United States
Department of
Agriculture

Soil
Conservation
Service

In cooperation with
United States Department
of the Interior,
Bureau of Land Management,
and University of Nevada,
Agricultural Experiment
Station

Soil Survey of Esmeralda County Area, Nevada

How To Use This Soil Survey

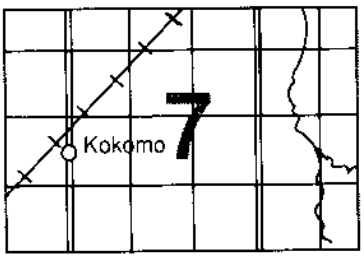
General Soil Map

The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

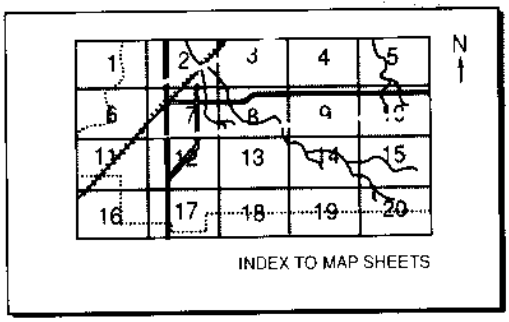
Detailed Soil Maps

The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.



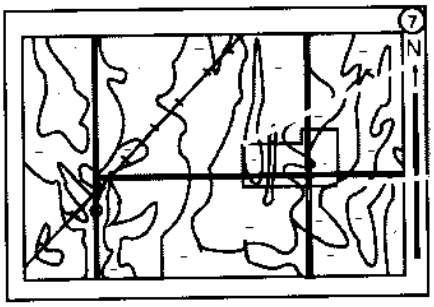
MAP SHEET

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet, and turn to that sheet.

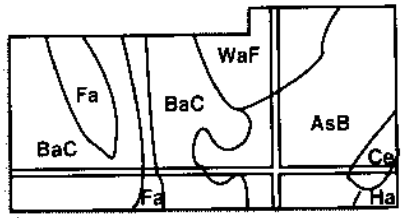


INDEX TO MAP SHEETS

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Index to Map Units** (see Contents), which lists the map units by symbol and name and shows the page where each map unit is described.



MAP SHEET



AREA OF INTEREST

NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, age, or handicap.

Major fieldwork for this soil survey was completed in 1983. Soil names and descriptions were approved in 1984. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1983. This survey was made cooperatively by the Soil Conservation Service, the Bureau of Land Management, and the University of Nevada, Agricultural Experiment Station. It is part of the technical assistance furnished to the Esmeralda Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Contents

Index to map units v
Summary of tables ix
Preface xi
General nature of the survey area 1
History 1
Water supply 1
Industry, transportation, and recreation 2
Geology 2
Climate 2
How this survey was made 2
General soil map units 5
Map unit descriptions 5
Detailed soil map units 9
Map unit descriptions 14
Use and management of the soils 957
Crops and pasture 957
Rangeland 958
Woodland 959
Windbreaks and environmental plantings 959
Wildlife habitat 959
Classification of the soils 961
Taxonomic units and their morphology 961
Formation of the soils 1035
Climate 1035
Relief 1036
Biological forces 1036
Parent material 1037
Time 1037
References 1039
Glossary 1041
Tables 1051
Appendix 1063

Taxonomic units

Advokay series 961
Alcan series 962
Annaw series 963
Aquic Calciorthids 963
Ardivey series 964
Arizo series 965
Armespan series 965
Armespan Variant 966
Armoine series 967
Beano series 968
Beelem series 969
Belcher series 969
Bellehelen series 970
Belted series 970
Blacktop series 971
Blappert series 971
Breko series 972
Brier series 973
Candelaria series 974
Celeton series 975
Cirac series 975
Cucamungo series 976
Downeyville series 976
Eaglepass series 977
Entero series 978
Espint series 978
Fuegosta series 979
Gabbvally series 980
Garhill series 980
Geer series 981
Gynelle series 982
Handpah series 982
Handpah Variant 983
Hiridge series 984
Itme series 984
Izo series 985
Kawich series 986
Keefa series 986
Kiote series 987
Koyen series 988
Kyler series 988
Lathrop series 989
Laxal series 990
Lazan series 991
Leo series 991
Logring series 992
Lomoine series 992
Louderback series 993
Luning series 994
Lyda series 994
Malmesa series 995
Mohocken series 996
Noyson series 997
Nuyobe series 998

Oricto series 998
Orphant series 999
Orwash series 1000
Papoose series 1000
Penelas series 1001
Penoyer series 1002
Pintwater series 1003
Pumel series 1003
Ravenswood series 1004
Ravenswood Variant 1004
Rodad series 1005
Roic series 1006
Rustigate series 1006
Scottcas series 1007
Scottcas Variant 1008
Settlement series 1008
Silverbow series 1009
Skelon series 1010
Slatery series 1010
Slaw series 1011
Sodaspring series 1011
Squawtip series 1012
Stargo series 1013
Stewval series 1014
Stonell series 1014
Stumble series 1015
Sylvaniam series 1015
Terlco series 1016
Theriot series 1017
Thike series 1018
Timper series 1018
Tognoni series 1019
Tokoper series 1020
Tomel series 1020
Trailamp series 1021
Tulecan series 1022
Ubehebe series 1022
Unsel series 1023
Unsel Variant 1024
Upspring series 1025
Veet series 1025
Veet Variant 1026
Vigus series 1026
Vindicator series 1027
Wahguyhe series 1028
Wardenot series 1028
Weepah series 1029
Wrango series 1030
Yermo series 1030
Yomba series 1031
Youngston series 1032
Zaba series 1032
Zadvar series 1033
Zibate series 1033

Issued May 1991

Index to Map Units

100—Unsel-Belted-Orphant association 15
101—Unsel-Wardenot-Izo association 19
103—Unsel-Silverbow-Izo association 22
105—Unsel-Itme-Advokay association 26
106—Unsel-Wardenot-Terlco association 29
108—Unsel-Izo association 33
109—Unsel-Advokay-Blacktop association 36
110—Blacktop-Rock outcrop-Pintwater association 39
111—Blacktop-Rodad-Theriot association 42
112—Blacktop-Rock outcrop association 45
115—Blacktop-Rock outcrop-Wahguyhe association 47
120—Leo-Belcher association 50
121—Leo-Ardivey association 53
122—Leo-Izo association 56
124—Leo-Koyen association 59
126—Leo-Itme-Izo association 62
127—Leo-Unsel-Belcher association 65
128—Leo-Stonell association 68
130—Belcher-Timper-Noyson association 71
131—Belcher-Playas-Yomba association 74
140—Stumble loamy fine sand, 0 to 4 percent slopes 77
141—Stumble-Belcher-Izo association 79
142—Stumble-Leo association 82
144—Stumble-Wardenot-Unsel association 85
145—Stumble-Luning association 88
151—Kawich-Playas association 91
160—Yomba-Playas-Youngston association 93
161—Yomba-Wardenot-Izo association 96
162—Yomba-Playas-Youngston association, alkali 99
163—Yomba-Playas-Kawich association 102
164—Yomba-Kawich association 105
165—Yomba-Belcher association 108
180—Youngston-Playas association 111
190—Terlco-Wardenot association 113
191—Terlco-Advokay-Downeyville association 116
193—Terlco-Pintwater-Wardenot association 120
194—Terlco-Roic-Wardenot association 123
195—Terlco-Lyda-Lathrop association 126
196—Terlco-Unsel-Lathrop association 130
200—Zadvar-Stewval association 134
201—Zadvar-Veet-Lyda association 137
203—Zadvar-Armespan-Wrango association 141
211—Lomoine-Pumel-Rock outcrop association 145
220—Advokay-Itme association 148
221—Advokay-Blacktop-Itme association 151
222—Advokay-Blacktop association 154
224—Advokay-Ardivey-Leo association 157
225—Advokay-Blacktop-Tomel association 160
230—Stewval-Downeyville-Rock outcrop association 163
231—Stewval-Pintwater-Rock outcrop association 166
232—Stewval-Advokay-Itme association 169
233—Stewval-Blacktop-Rock outcrop association 172
234—Stewval-Bellehelen-Rock outcrop association 175
235—Stewval-Bellehelen-Gabbvally association 178
236—Stewval-Downeyville, moist-Rock outcrop association 182
237—Stewval-Gabbvally-Rock outcrop association 185
238—Stewval-Malmesa-Wahguyhe association 188
239—Stewval-Wahguyhe-Pintwater association 191
240—Settlement-Aquic Calciorthids complex 194
250—Theriot-Kyler-Rock outcrop association 197
251—Theriot-Rock outcrop association 200
252—Theriot-Kyler-Leo association 202
253—Theriot-Slatery-Rock outcrop association 205
254—Theriot-Rodad-Leo association 208
270—Lathrop-Leo association 211
271—Lathrop-Itme association 214
272—Lathrop-Itme-Zadvar association 217
273—Lathrop-Terlco-Izo association 221
276—Lathrop-Wardenot-Lyda association 225
278—Lathrop-Belted-Veet association 229
280—Tognoni-Blacktop association 233
281—Tognoni-Blacktop-Downeyville association 236
282—Tognoni-Gabbvally-Malmesa association 239
290—Pumel-Rock outcrop-Itme association 242
291—Pumel-Rock outcrop association 245
294—Pumel-Upspring association 248
295—Pumel-Thike-Rock outcrop association 251
300—Itme association, sandy surface 254
301—Itme very stony loamy sand, 8 to 15 percent slopes, occasionally flooded 257
302—Itme-Luning-Wardenot association 259
304—Itme association 262
310—Gynelle-Oricto association 265
311—Gynelle-Cirac association 268
312—Gynelle-Oricto association, alkali 271
313—Gynelle-Luning association 275
314—Gynelle-Cirac-Oricto association 278
316—Gynelle-Wardenot association 281
317—Gynelle-Oricto association, warm 284
321—Oricto-Roic-Gynelle association 287
323—Oricto-Terlco-Roic association 290
326—Oricto-Blacktop-Gynelle association 294
327—Oricto-Gynelle association 297

331—Candelaria-Gynelle-Izo association 300
334—Candelaria-Izo association 303
340—Zaba very gravelly loam, 0 to 8 percent slopes 306
341—Zaba-Gynelle association 308
342—Zaba-Yomba-Slaw association 311
350—Roic-Oricto-Wardenot association 314
351—Roic-Vindicator-Rock outcrop association 317
352—Roic-Wardenot-Badland association 320
353—Roic-Stumble-Badland association 323
354—Roic-Stumble-Vindicator association 326
355—Roic-Gullied land complex, 2 to 8 percent slopes 329
356—Roic-Advokay-Blacktop association 332
360—Downeyville-Pintwater-Rock outcrop association 335
361—Downeyville-Pumel-Rock outcrop association 338
362—Downeyville-Blacktop-Rock outcrop association 341
363—Downeyville-Silverbow-Rock outcrop association 344
364—Downeyville-Vindicator-Advokay association 347
365—Downeyville-Gabbvally-Malmesa association 350
367—Downeyville-Gabbvally association 353
368—Downeyville-Pintwater-Upspring association 356
369—Downeyville-Advokay-Pintwater association 359
370—Rustigate-Louderback-Cirac association 362
371—Rustigate-Slaw-Playas association 365
372—Rustigate-Nuyobe association 368
373—Rustigate-Kawich-Cirac association 371
380—Nuyobe-Rustigate-Playas association 374
390—Noyson-Stumble-Izo association 377
391—Noyson-Lathrop-Itme association 380
400—Annaw-Wardenot-Ardivey association 383
402—Annaw-Wardenot-Pintwater association 387
410—Pintwater-Wardenot-Unsel association 390
411—Pintwater-Theriot-Wardenot association 393
413—Pintwater-Blacktop association 396
414—Pintwater-Blacktop-Downeyville association 399
420—Vigus-Unsel-Izo association 402
421—Vigus-Fuegosta-Izo association 406
422—Vigus-Wardenot association 409
430—Slaw-Playas complex 412
431—Slaw-Kawich-Nuyobe association 414
432—Slaw-Kawich-Playas association 417
433—Slaw-Cirac association 420
440—Wardenot-Unsel-Yomba association 423
442—Wardenot-Izo association 427
443—Wardenot-Roic association 430
444—Wardenot-Terlco-Badland association 433
445—Wardenot-Gynelle-Stonell association 436
446—Wardenot-Annaw-Izo association 439
447—Wardenot-Annaw-Izo association, moist 442
449—Wardenot-Stonell-Roic association 445
450—Cirac-Oricto association 448
451—Cirac-Luning association 451
452—Cirac-Rustigate-Settlement association 454
453—Cirac-Gynelle-Oricto association 457
454—Cirac-Playas-Kawich association 460
455—Cirac-Kawich association 463
460—Tomel-Ardivey-Wardenot association 466
462—Tomel-Wardenot association 470
470—Ardivey-Unsel-Wardenot association 473
471—Ardivey-Izo association 476
472—Ardivey-Wardenot-Lyda association 479
473—Ardivey-Veet-Vindicator association 482
475—Ardivey-Tomel-Izo association 486
476—Ardivey-Wardenot-Izo association 489
477—Ardivey-Downeyville-Leo association 492
480—Stonell-Wardenot-Izo association, moist 495
481—Stonell-Roic-Wardenot association 498
482—Stonell-Wardenot-Izo association 501
484—Stonell-Gynelle-Wardenot association 504
490—Weepah-Kyler-Rock outcrop association 507
491—Weepah-Rodad-Blacktop association 510
492—Weepah-Slatery-Penelas association 513
501—Eaglepass-Rock outcrop complex, 30 to 75 percent slopes 517
510—Silverbow-Wardenot-Izo association 520
511—Silverbow-Annaw-Ardivey association 523
520—Celeton-Dumps-Izo association 526
540—Veet-Leo association 529
541—Veet very gravelly sandy loam, 2 to 8 percent slopes 532
542—Veet-Laxal association 535
543—Veet-Veet Variant association 538
544—Veet-Ardivey-Espint association 542
550—Luning-Timper-Gynelle association 545
551—Luning-Sodaspring association 548
552—Luning-Candelaria-Pintwater association 551
560—Unsel Variant-Vindicator-Espint association 555
570—Espint-Vindicator association 558
571—Espint-Stewval-Vindicator association 561
590—Vindicator-Espint-Dumps association 564
591—Vindicator-Unsel-Leo association 567
592—Vindicator-Gabbvally-Advokay association 570
593—Vindicator-Downeyville-Blacktop association 574

600—Trailamp-Sylvaniam association 577
601—Trailamp-Entero association 580
610—Ubehebe-Logring-Penelas association 583
611—Ubehebe-Trailamp association 587
612—Ubehebe-Weepah association 590
620—Cucamungo-Tulecan-Ubehebe association 593
622—Cucamungo-Alcan association 597
623—Cucamungo-Rock outcrop-Tulecan complex, 30 to 50 percent slopes 600
624—Cucamungo-Alcan-Thike association 603
630—Hiridge-Kiote-Rock outcrop association 607
631—Hiridge-Squawtip-Bellehelen association 610
632—Hiridge-Ravenswood Variant-Rock outcrop association 614
633—Hiridge-Ravenswood-Cucamungo association 617
640—Logring-Kyler-Ubehebe association 621
641—Logring-Brier-Armespan Variant association 625
650—Gabbvally-Stewval-Vindicator association 629
651—Gabbvally-Bellehelen-Stewval association 633
652—Gabbvally-Wahguyhe-Rock outcrop association 637
653—Gabbvally-Brier-Rock outcrop association 640
654—Gabbvally-Malmesa-Espint association 643
655—Gabbvally-Brier-Wahguyhe association 646
656—Gabbvally-Beelem-Rock outcrop association .. 649
658—Gabbvally-Downeyville-Rock outcrop association 652
660—Bellehelen-Brier-Stewval association 655
661—Bellehelen-Stewval association 659
680—Malmesa-Stewval-Gabbvally association 662
681—Malmesa-Wahguyhe-Bellehelen association ... 665
682—Malmesa-Gabbvally-Brier association 669
683—Malmesa-Gabbvally-Wahguyhe association 673
690—Entero-Penelas-Rodad association 676
691—Entero-Ubehebe-Penelas association 680
692—Entero-Penelas-Slatery association 684
693—Entero-Rodad association 687
700—Armoine-Blappert-Advokay association 690
701—Armoine-Tulecan association 693
702—Armoine-Blappert-Rock outcrop association ... 696
703—Armoine-Pumel-Rock outcrop association 699
704—Armoine-Rock outcrop-Tulecan complex, 30 to 50 percent slopes 702
705—Armoine-Penelas association 705
706—Armoine-Itme-Lathrop association 708
710—Tokoper-Blacktop association 712
711—Tokoper-Ardivey association 715
712—Tokoper-Stewval association 718
713—Tokoper-Upspring-Rock outcrop association... 721
715—Tokoper-Downeyville-Pintwater association 724
720—Penelas-Weepah association 727
721—Penelas-Ubehebe-Entero association 730
723—Penelas-Slatery-Rock outcrop association 734
724—Penelas-Entero-Weepah association 737
730—Koyen-Stumble-Penoyer association 740
741—Tulecan-Ubehebe-Armoine association 743
760—Lazan-Rock outcrop-Cucamungo association . 747
761—Lazan-Squawtip association 750
770—Alcan-Cucamungo association 753
780—Lyda-Ardivey-Izo association 757
781—Lyda-Itme-Lathrop association 760
790—Handpah-Zadvar-Lyda association 763
791—Handpah-Veet association 767
792—Handpah-Breko-Veet association 770
793—Handpah very gravelly loam, 2 to 15 percent slopes 774
794—Handpah-Tomel-Breko association 776
800—Garhill-Upspring-Rock outcrop association 780
811—Slatery-Rodad association 783
812—Slatery-Entero-Rock outcrop association 786
813—Slatery very gravelly loam, 8 to 30 percent slopes 789
820—Thike-Alcan association 791
821—Thike-Rock outcrop association 794
830—Yermo-Arizo association 797
831—Yermo-Skelon association 800
833—Yermo-Arizo-Skelon association 803
851—Skelon-Yermo-Arizo association 806
860—Orwash-Arizo association, cool 809
861—Orwash-Arizo association 812
871—Arizo association 815
880—Scottcas-Yermo association 818
881—Scottcas-Skelon-Yermo association 821
900—Playas 824
901—Badland-Belcher-Belted association 825
902—Slickens 828
905—Badland 829
910—Stargo-Playas association 830
920—Fuegosta-Tomel-Izo association 832
921—Fuegosta-Unsel association 835
931—Laxal-Wardenot-Ardivey association 838
940—Belted-Keefa association 841
941—Belted-Lathrop association 844
950—Sylvaniam-Logring-Rock outcrop association .. 847
960—Beano-Wardenot association 850
961—Beano-Annaw-Wardenot association 853
970—Blappert-Pumel association 856

971—Blappert-Slatery association 859
980—Geer fine sandy loam, 0 to 4 percent slopes.. 862
990—Sodaspring-Izo association 864
1000—Keefa-Itme association..... 867
1010—Scottcas Variant very gravelly sandy loam, 4 to 30 percent slopes 870
1020—Upspring very cobbly sandy loam, 4 to 30 percent slopes 872
1021—Upspring-Skelon-Rock outcrop association..... 874
1030—Papoose-Roic-Cirac association 877
1031—Papoose sandy loam, 0 to 8 percent slopes... 880
1032—Papoose-Cirac association 882
1033—Papoose-Roic association 885
1034—Papoose-Izo association..... 888
1035—Papoose-Stumble association 891
1050—Beelem-Rock outcrop-Bellehelen association. 894
1060—Wrango-Zadvar-Veet association..... 897
1070—Squawtip-Gabbvally-Rock outcrop association..... 901
1080—Ravenswood-Wahguyhe-Brier association 904
1081—Ravenswood-Brier association..... 908
1090—Zibate-Blacktop-Rock outcrop association..... 911
1120—Rodad-Entero association..... 914
1121—Rodad-Theriot-Rock outcrop association 917
1122—Rodad-Ardivey-Theriot association..... 920
1123—Rodad-Roic-Theriot association..... 923
1124—Rodad-Slatery-Leo association 926
1125—Rodad-Theriot-Kyler association..... 929
1140—Handpah Variant-Veet-Veet Variant association..... 932
1150—Brier-Squawtip-Gabbvally association 936
1151—Brier-Bellehelen-Gabbvally association..... 940
1160—Mohocken-Cucamungo-Ravenswood association..... 944
1200—Armespan Variant-Handpah-Ubehebe association..... 948
1210—Armespan-Zadvar-Veet association..... 952

Summary of Tables

Rangeland plants and woodland understory (tables 1-300; see individual detailed map unit descriptions)

Temperature and precipitation (table 301) 1052

Freeze dates in spring and fall (table 302) 1054
Probability. Temperature.

Growing season (table 303) 1055
Probability. Length of growing season if daily maximum temperature exceeds—24 degrees F, 28 degrees F, 32 degrees F.

Acreage and proportionate extent of the soils (table 304) 1056
Acres. Percent.

Classification of the soils (table 305) 1061
Family or higher taxonomic class.

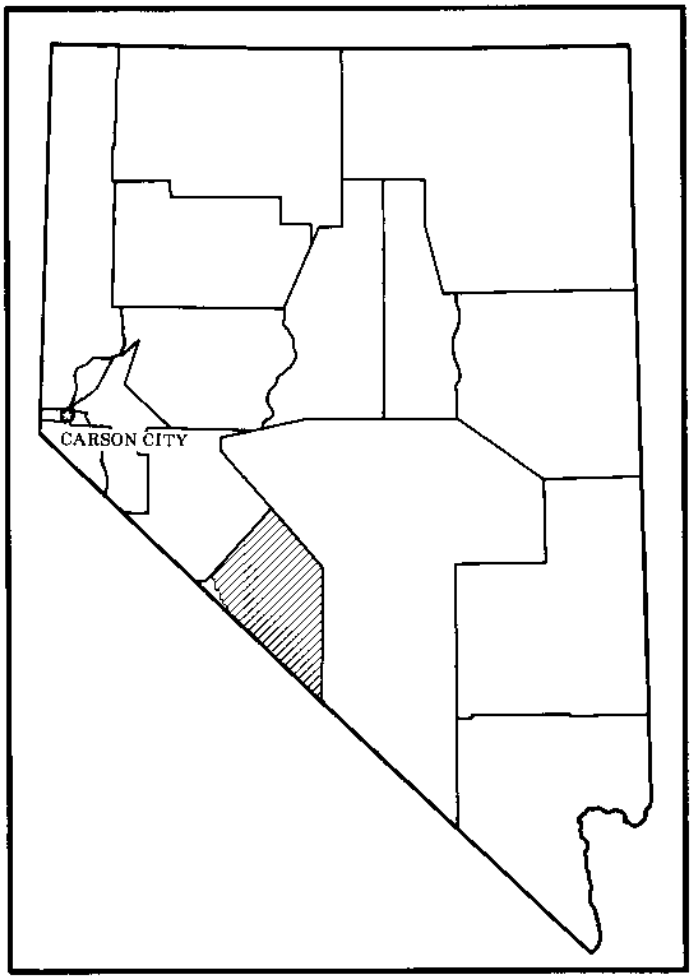
Preface

This soil survey contains information that can be used in land-planning programs in Esmeralda County Area, Nevada. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the suitability of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.



Location of Esmeralda County Area in Nevada.

Soil Survey of Esmeralda County Area, Nevada

By John B. Fisher, Soil Conservation Service

Fieldwork by John B. Fisher, Joseph H. DuRousseau, Jr.,
Thomas R. McKay, George A. Rolfes, and Delbert Christenson,
Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service
In cooperation with
United States Department of the Interior, Bureau of Land Management, and
University of Nevada, Agricultural Experiment Station

ESMERALDA COUNTY AREA includes all of Esmeralda County except for the extreme northwestern and southwestern corners. It has a total area of 2,241,063 acres, or about 3,502 square miles. Goldfield, the county seat, is the only incorporated town in the survey area.

Important physiographic units in the area include the Silver Peak Range, the Monte Cristo Range, Fish Lake Valley, and Clayton Valley.

Descriptions, names, and delineations of soils in this soil survey do not fully agree with those on soil maps for adjacent counties and adjacent parts of Esmeralda County. Differences are the result of better knowledge of soils, modifications in series concepts, intensity of mapping, or the extent of soils within the survey.

General Nature of the Survey Area

This section gives general information about the survey area. It briefly discusses history; water supply; industry, transportation, and recreation; geology; and climate.

History

The survey area was originally inhabited by the northern Paiute Indians. In 1827, Jedediah Smith crossed the northern part of this survey area and was reportedly the first non-Indian to visit the area. Between 1830 and 1840, American and Mexican trappers crossed the area in search of game and fur-bearing animals. Emigrant parties started migrating into the area between 1850 and 1860.

Mining has been the major industry in the survey area since the first mineral discoveries were made in the 1860's. The earliest discoveries were in the Silver Peak Mountains. There were numerous small precious metal finds in the Dyer, Hornsilver, Palmetto, Montezuma, and Sylvania mining districts; however, the most important discovery was at Goldfield in 1902.

Presently, the most important mineral products in the survey area are lithium and diatomite.

Ranching is a major industry only in the Fish Lake Valley area. Some of the first ranches were established in the early 1860's. Livestock grazing in the valleys of the survey area has been carried on since the 1860's.

Water Supply

The supply of surface water in the survey area is very limited. Irrigation water is used in the Fish Lake Valley area. The source of the water is Chiatovich, Indian, Leidy, Busher, Perry Aiken, and McAfee Creeks, which are perennial streams flowing from the White Mountains.

Water for household use is obtained from wells. The quality of the ground water is highly variable; in some areas high levels of salts or toxic minerals make the ground water unsuitable for household use.

Industry, Transportation, and Recreation

The main industries in the survey area are tourism, mining, and agriculture.

The area is served by U.S. Highways 6 and 95 and by State Highways 267, 266, 264, and 265.

Outdoor recreation opportunities are abundant in the survey area. They include hunting deer and birds, fishing, collecting rocks, gathering pine nuts, sightseeing, and driving four-wheel-drive vehicles.

Geology

The survey area lies within a zone of disrupted structure that forms a transition between the northwest-trending Sierra Nevada block to the west and the north-northeast-trending ranges of the Great Basin Province to the east.

The topography in the area is dominated by ranges of differing types of rock and by intervening valleys. Upper Precambrian and lower Cambrian sedimentary rocks are widely exposed in the southern two-thirds of the area. Eaglepass, Logring, Entero, Penelas, Rodad, and Slatery are some of the soils that formed in these kinds of parent material.

The igneous rock in the survey area occurs as outcrop throughout the area, but mostly in the northern and eastern parts. It includes welding and nonwelding ash flows, lava flows, and volcanic breccia. The composition of the rock ranges from rhyolite to basalt. Some of the soils that formed in this material are the soils of the Downeyville, Beelem, Bellehelen, Espint, Gabbvally, Malmesa, Squawtip, Stewval, and Vindicator series.

Coarse grained plutonic rock occurs in numerous separate bodies throughout the survey area, but mostly in the southwestern part. The composition of most of these bodies is quartz monzonite. Alcan, Armoine, Cucamungo, Pumel, and Thike are some of the soils that formed in material derived from quartz monzonite (*1*).

Recent alluvium occurs in areas along flood plains, inset fans, fan aprons, and drainageways. Youngston, Itme, Izo, Leo, and Penoyer are examples of recently formed soils in these areas.

Climate

Prepared by the National Climatic Center, Asheville, North Carolina.

In Esmeralda County Area, summers are hot, especially at the lower elevations, and winters are cold. Precipitation normally is light at the lower elevations during all months of the year. At the higher elevations, precipitation is much greater and snow accumulates to considerable depths.

Table 301 gives data on temperature and precipitation for the survey area, as recorded at Dyer and Tonopah, Nevada, for the period 1951-80. Table 302 shows probable dates of the first freeze in fall and the last freeze in spring. Table 303 provides data on length of the growing season.

In winter the average temperature at both Dyer and Tonopah is 33 degrees F. The average daily minimum temperature is 17 degrees at Dyer and 20 degrees at Tonopah. The lowest recorded temperature occurred at Dyer on January 24, 1962, and is -21 degrees. In summer the average temperature is 70 degrees at Dyer and 71 degrees at Tonopah. The average daily maximum temperature is about 89 degrees. The highest recorded temperature, which occurred at Dyer on June 20, 1961, is 106 degrees.

Growing degree days, shown in table 301, are equivalent to heat units. During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 5 inches. Of this, 55 percent usually falls in April through September, which includes the growing season for most crops. The heaviest 1-day rainfall during the period of record was 1.73 inches at Dyer on November 6, 1960. Thunderstorms occur on about 15 days each year, and most occur in summer.

Average seasonal snowfall is 13 inches at Dyer and 11 inches at Tonopah. The greatest snow depth at any one time during the period was 30 inches at Dyer and 13 inches at Tonopah. On the average, 4 days at Dyer and 7 days at Tonopah have at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 20 percent. Humidity is higher at night, and the average at dawn is about 40 percent. The percentage of possible sunshine is 90 percent in summer and 80 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 11 miles per hour, in spring.

Every few years a blizzard strikes the survey area with high winds and drifting snow. Even at lower elevations, snow remains on the ground for many weeks and livestock suffer.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The

information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unmodified parent material in which the soil formed. The unmodified material is devoid of roots and most other living organisms and has not been changed by other biologic activity.

The soils and miscellaneous areas in the survey area are in orderly patterns that are related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil or miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge gradually into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size, and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes. Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While the soil survey was in progress, samples of some of the soils in the area were collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses and under different levels of management. Some interpretations were modified to fit local conditions, and some new interpretations were developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The soils or miscellaneous areas making up one unit can occur in other units but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils or miscellaneous areas can be identified on the map. Likewise, areas that are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The general map units in this survey have been grouped into general kinds of landscape for broad interpretive purposes. Each of the broad groups and the map units in each group are described in the following pages.

Map Unit Descriptions

Soils on basin floors

These soils make up about 9 percent of the survey area. There are two map units in the group.

1. Typic Torrifluvents-Playas-Duric Camborthids

Very deep, nearly level to gently sloping, well drained and somewhat excessively drained soils, and Playas; on alluvial flats and adjacent fan skirts, axial stream flood plains, and lake plains

This map unit consists of irregularly shaped areas in the northern and central parts of the survey area. It makes up 7 percent of the survey area. The elevation is 4,000 to 5,200 feet. Slopes are dominantly 0 to 4 percent. The average annual precipitation is 3 to 8 inches, the average annual air temperature is 51 to 57 degrees F, and the frost-free season is 100 to 150 days.

Typic Torrifluvents are nearly level to gently sloping, well drained soils on alluvial flats, axial stream flood plains, and lake plains. These soils formed in mixed alluvium. Typically, these soils are stratified. They average moderately coarse to moderately fine in texture. Vegetation is mainly black greasewood, shadscale, and scattered Indian ricegrass.

Playas are barren land areas that are seasonally flooded by runoff from higher areas. Playas typically are devoid of vegetation.

Duric Camborthids and similar soils are nearly level, somewhat excessively drained soils on alluvial flats and adjacent fan skirts. These soils formed in alluvium derived from various kinds of rock. They are very gravelly or gravelly and coarse or moderately coarse in texture. Weakly silica and lime cemented layers are at a shallow to moderate depth. Vegetation is mainly shadscale, bud sagebrush, and scattered Indian ricegrass.

Of minor extent in this unit are Typic Torripsamments, Typic Torriorthents, and Aquic Torriorthents. Typic Torripsamments are on sand sheets and dunes. Typic Torriorthents are on relict offshore bars and encroaching fan skirts. Aquic Torriorthents are somewhat poorly drained soils on alluvial flats.

This unit is used as rangeland and wildlife habitat. Small areas are cultivated and used for irrigated hay and grain.

This unit is limited for irrigated crops by the salinity of the soils and the lack of water for irrigation.

Wildlife habitat is limited by the sparseness of the vegetation and its lack of diversity.

2. Typic Torrifluvents-Aquic Torriorthents-Aeric Halaquepts

Very deep, nearly level, well drained, somewhat poorly drained, and poorly drained soils; on alluvial flats, axial stream flood plains, and lake plains

This map unit consists of elongated, irregularly shaped areas, mainly in the western and central parts of the survey area. It makes up 2 percent of the survey area. Elevation is 4,200 to 5,000 feet. Slopes are 0 to 2 percent. The average annual precipitation is 4 to 8 inches, the average annual air temperature is 51 to 57 degrees F, and the frost-free season is 100 to 150 days.

Typic Torrifluvents are nearly level, well drained soils on alluvial flats, axial stream flood plains, and lake plains. They formed in mixed alluvium. Typically, these soils are stratified and average moderately fine to

moderately coarse in texture. Vegetation is mainly black greasewood, shadscale, and scattered Indian ricegrass.

Aquic Torriorthents are nearly level, somewhat poorly drained soils on alluvial flats and lake plains. They formed in alluvium derived from various kinds of rock. Typically, these soils are moderately fine in texture. Vegetation is mainly inland saltgrass, alkali sacaton, and rubber rabbitbrush.

Aeric Halaquepts are nearly level, somewhat poorly drained and poorly drained soils on alluvial flats and lake plains. They formed in alluvium derived from various kinds of rock. Typically, these soils are medium in texture, although in some areas they are fine textured. Vegetation is mainly alkali sacaton, inland saltgrass, and Baltic rush.

Of minor extent in this unit are Aquic Calciorthids, Typic Torripsamments, and Playas. Typic Torripsamments are on sand sheets and dunes, and Aquic Calciorthids are somewhat poorly drained soils on alluvial flats.

This unit is used as rangeland and wildlife habitat. Some areas are cultivated and used for irrigated hay and grain.

This unit is limited for irrigated crops by the salinity and restricted drainage of the soils.

Wildlife habitat is somewhat limited by the salinity and restricted drainage of the soils.

Soils on piedmont slopes

These soils make up 47 percent of the survey area. There are four map units in this group.

3. Typic Torriorthents-Duric Haplargids-Typic Durargids

Very deep, shallow, and very shallow, gently sloping to strongly sloping, excessively drained to well drained soils; on fan piedmonts

This map unit consists of irregularly shaped areas throughout the survey area. It makes up 33 percent of the area. Elevation is 4,400 to 6,900 feet. Slopes range from 2 to 15 percent. The average annual precipitation is 4 to 8 inches, the average annual air temperature is 51 to 57 degrees F, and the frost-free season is 100 to 160 days.

Typic Torriorthents are very deep, excessively drained to well drained soils on inset fans and fan skirts. These soils formed in alluvium derived from various kinds of rock. They are gravelly to extremely gravelly and coarse or moderately coarse in texture. Vegetation is mainly shadscale, bud sagebrush, and Indian ricegrass.

Duric Haplargids and similar soils are very deep, well drained soils on fan remnants. These soils formed in alluvium derived from various kinds of rock. Typically, they have a very gravelly, moderately coarse textured upper layer, a moderate to moderately fine textured, gravelly middle layer, and a weakly cemented, very gravelly, coarse or moderately coarse textured underlying layer. Vegetation is mainly shadscale, bud sagebrush, galleta, and Indian ricegrass.

Typic Durargids and similar soils are very shallow or shallow, well drained soils on fan remnants. These soils formed in alluvium derived from various kinds of rock. Typically, they have a gravelly or very gravelly, moderately coarse or medium textured upper layer, a gravelly or very gravelly, medium to fine textured middle layer, and an indurated hardpan at a very shallow or shallow depth. Vegetation is mainly shadscale, bud sagebrush, Indian ricegrass, and galleta.

Soils of minor extent in this unit are Typic Camborthids, Typic Torripsamments, and Entic Durorthids. Typic Camborthids are on inset fans and recent fan remnants, Typic Torripsamments are on sand sheets, and Entic Durorthids are on fan aprons and fan skirts.

This unit is used as rangeland and wildlife habitat.

Wildlife habitat is limited by the sparseness of the vegetation and its lack of diversity.

4. Typic Torriorthents

Very deep, gently sloping, well drained to excessively drained soils; on fan piedmonts and fan skirts

This map unit consists of irregularly shaped areas in the southern part of the survey area. It makes up 2 percent of the survey area. Elevation is 3,900 to 4,600 feet. Slopes are 2 to 8 percent. The average annual precipitation is 4 to 8 inches, the average annual air temperature is 57 to 59 degrees F, and the frost-free season is 150 to 200 days.

Typic Torriorthents are gently sloping, well drained to excessively drained soils on fan piedmonts and fan skirts. These soils formed in alluvium derived from various kinds of rock. Typically, they are very gravelly and are moderately coarse or coarse in texture. Vegetation is mainly white bursage, creosotebush, and scattered Indian ricegrass.

Of minor extent in this unit are Typic Durorthids and Duric Haplargids. Typic Durorthids are on fan remnants, and Duric Haplargids are on fan remnants and partial ballenas.

This map unit is used as rangeland and wildlife habitat.

Wildlife habitat is limited by the sparseness of the vegetation.

5. Xerollic Camborthids-Xerollic Durargids-Haploxerollic Durargids

Very deep, shallow, and very shallow, gently sloping to strongly sloping, well drained to excessively drained soils; on fan piedmonts

This map unit consists of irregularly shaped areas, mainly in the southern and western parts of the survey area. It makes up 3 percent of the survey area. Elevation is 6,700 to 7,400 feet. Slopes are 2 to 15 percent. The

average annual precipitation is 8 to 12 inches, the average annual temperature is 51 to 57 degrees F, and the frost-free season is 100 to 130 days.

Xerollic Camborthids and similar soils are very deep, well drained to excessively drained soils on inset fans and recent alluvial fans. These soils formed in alluvium derived from various kinds of rock. Typically, they have a very gravelly, moderately coarse or coarse textured upper layer and very gravelly, moderately coarse or coarse textured middle and underlying layers. Vegetation is mainly Wyoming big sagebrush, Indian ricegrass, and bottlebrush squirreltail.

Xerollic Durargids are well drained, shallow soils on fan remnants. These soils formed in mixed alluvium. Typically, they have a very gravelly or gravelly, moderately coarse or medium textured upper layer, a gravelly, medium or moderately fine textured middle layer, and an indurated hardpan at a shallow depth. Vegetation is mainly Wyoming big sagebrush, Nevada ephedra, and Indian ricegrass.

Haploxerollic Durargids are very shallow, well drained soils on fan remnants. These soils formed in alluvium derived from various kinds of rock. Typically, they have a very gravelly, moderately coarse textured upper layer, a gravelly, moderately fine or medium textured middle layer, and a strongly cemented hardpan at a very shallow depth. Vegetation is mainly black sagebrush, Nevada ephedra, galleta, and Indian ricegrass.

Of minor extent in this unit are Aridic Argixerolls, Fluvaquentic Haploxerolls, Typic Durargids, and Xerollic Haplargids. Aridic Argixerolls are on fan remnants and partial ballenas, Fluvaquentic Haploxerolls are on axial stream flood plains, and Typic Durargids and Xerollic Haplargids are on fan remnants.

This unit is used as rangeland and wildlife habitat.

This map unit provides habitat for a number of wildlife species.

6. Typic Torriorthents-Typic Haplargids

Very deep, gently sloping to moderately sloping, excessively drained to well drained soils; on fan skirts and lower fan piedmonts

This map unit consists of irregularly shaped areas, mainly in the northern and central parts of the survey area. It makes up 9 percent of the survey area. Elevation is 4,300 to 5,200 feet. Slopes are 2 to 8 percent. The average annual precipitation is 3 to 6 inches, the average annual air temperature is 51 to 57 degrees F, and the frost-free season is 120 to 150 days.

Typic Torriorthents are somewhat excessively drained and excessively drained soils on fan skirts and inset fans. These soils formed in alluvium derived from various kinds of rock. Typically, they are very gravelly or gravelly, coarse textured soils. Vegetation is mainly sparse shadscale, Bailey greasewood, and Copper wolfberry. Black greasewood also grows in areas near the basin floor, where these soils are alkaline.

Typic Haplargids are well drained soils on fan remnants. These soils formed in alluvium derived from various kinds of rock. Typically, they have a very gravelly, moderately coarse textured surface layer, a thin, very gravelly, medium textured upper layer, and a very gravelly, coarse textured underlying layer. Vegetation is mainly sparse shadscale, Bailey greasewood, and Cooper wolfberry.

Of minor extent in this unit are Typic Torrifluvents, Lithic Torriorthents, and Entic Durorthids. Typic Torrifluvents are on alluvial flats, Lithic Torriorthents are on low hills and rock pediments, and Entic Durorthids are on fan skirts.

This unit is used as rangeland and wildlife habitat.

Wildlife habitat is limited by the very sparse vegetation.

Soils on mountains and hills

These soils make up 44 percent of the survey area. There are three map units in this group.

7. Lithic Haplargids-Lithic Torriorthents-Typic Haplargids, shallow

Very shallow, hilly to very steep, well drained and somewhat excessively drained soils; on mountains and hills

This map unit consists of irregularly shaped areas throughout the survey area. It makes up 22 percent of the area. Elevation is 4,800 to 7,200 feet. Slopes are 15 to 75 percent. The average annual precipitation is 4 to 8 inches, the average annual air temperature is 51 to 57 degrees F, and the frost-free season is 100 to 150 days.

Lithic Haplargids are well drained, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very stony, medium or moderately coarse textured upper layer over a very gravelly, medium or moderately fine textured layer. Hard rock is at a very shallow depth. Vegetation is mainly shadscale, bud sagebrush, galleta, and Indian ricegrass.

Lithic Torriorthents are somewhat excessively drained and well drained, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, the soils are very gravelly and moderately coarse or medium textured and have bedrock at a very shallow depth. Vegetation is mainly shadscale, bud sagebrush, and Indian ricegrass.

Typic Haplargids, shallow, are well drained, hilly to very steep soils on mountains and hills. The soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very gravelly, moderately coarse textured upper layer over a very gravelly, medium textured layer. Soft bedrock is at a very shallow depth. Vegetation is mainly shadscale, bud sagebrush, galleta, and Indian ricegrass.

Of minor extent in this unit are Lithic Xerollic Haplargids, Typic Durargids, Typic Torriorthents, and Rock outcrop. Lithic Xerollic Haplargids are on north and sheltered aspects of mountains and hills, Typic Durargids are on partial ballenas and on plateaus, and Typic Torriorthents are in drainageways.

This unit is used as rangeland and wildlife habitat.

Wildlife habitat is limited by the sparseness of the vegetation and its lack of diversity.

8. Lithic Xerollic Haplargids-Xerollic Haplargids, shallow-Xeric Torriorthents, shallow

Very shallow and shallow, hilly to very steep, well drained soils; on mountains and hills

This map unit consists of irregularly shaped areas throughout the survey area. It makes up 15 percent of the area. Elevation is 6,800 to 7,500 feet. Slopes are 15 to 75 percent. The average annual precipitation is 8 to 12 inches, the average annual air temperature is 51 to 57 degrees F, and the frost-free season is 90 to 130 days.

Lithic Xerollic Haplargids are well drained, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very stony, moderately coarse or medium textured upper layer over a very gravelly, medium or moderately fine textured layer. Hard bedrock is at a very shallow or shallow depth. Vegetation is mainly black sagebrush, Nevada ephedra, and bottlebrush squirreltail. Some areas support Wyoming big sagebrush in place of black sagebrush.

Xerollic Haplargids, shallow, are well drained, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very gravelly, medium textured upper layer over a very gravelly, moderately fine textured layer. Soft bedrock is at a very shallow depth. Vegetation is mainly Wyoming big sagebrush, Nevada ephedra, and bluegrass.

Xeric Torriorthents, shallow, and similar soils are well drained, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they are very gravelly and medium or moderately coarse textured. Soft bedrock is at a very shallow depth. Vegetation is mainly black sagebrush, Nevada ephedra, and bottlebrush squirreltail.

Components of minor extent include Lithic Haplargids; Typic Torriorthents, shallow; Xerollic Durargids; Lithic Argixerolls; and Rock outcrop. Lithic Haplargids and Typic Torriorthents, shallow, are on mountains and hills and have south or west aspects, Xerollic Durargids are on plateaus and mountains, and Lithic Argixerolls are on mountains and hills and have north or sheltered aspects.

This unit is used as rangeland and wildlife habitat.

This unit provides habitat for a number of wildlife species.

9. Typic Argixerolls-Lithic Argixerolls-Lithic Xerollic Haplargids

Moderately deep to very shallow, hilly to very steep, well drained soils; on mountains and hills

This map unit consists of irregularly shaped areas, mainly in the central part of the survey area. It makes up 7 percent of the survey area. Elevation is 7,400 to 9,500 feet. Slopes are 15 to 75 percent. The average annual precipitation is 10 to 16 inches, the average annual air temperature is 40 to 48 degrees F, and the frost-free season is 70 to 110 days.

Typic Argixerolls and similar soils are moderately deep to very shallow, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very stony, medium textured upper layer over a very gravelly, medium textured layer. Bedrock is at a moderately deep to very shallow depth. Vegetation is mainly pinyon and juniper woodland with an understory of mountain big sagebrush and bluegrass.

Lithic Argixerolls and similar soils are very shallow, hilly to very steep soils on mountains and hills. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very stony, medium textured upper layer over a very gravelly, medium or moderately fine textured layer. Bedrock is at a very shallow depth. Vegetation is mainly pinyon and juniper woodland with an understory of black sagebrush and bluegrass. Some areas have Wyoming big sagebrush in the understory instead of black sagebrush.

Lithic Xerollic Haplargids and similar soils are very shallow or shallow, hilly to very steep soils on mountains and hills, mainly on south aspects or at low elevations. These soils formed in residuum and colluvium derived from various kinds of rock. Typically, they have a very stony, moderately coarse textured upper layer over a very gravelly, medium or moderately fine textured layer. Bedrock is at a very shallow depth. Vegetation is mainly black sagebrush, Nevada ephedra, bluegrass, and Indian ricegrass.

Of minor extent in this unit are Argic Cryoborolls, Argic Pachic Cryoborolls, Lithic Xeric Torriorthents, and Rock outcrop. Argic Cryoborolls and Argic Pachic Cryoborolls are on mountains, and Lithic Xeric Torriorthents are on hills.

This unit is used for grazing and as wildlife habitat.

This unit supports a number of wildlife species.

Detailed Soil Map Units

Definition of map unit

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and limitations of a unit for specific uses. The soil properties and characteristics described can be used to plan the management needed for those uses or for other ones. More information is given under "Use and Management of the Soils."

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation to precisely define and locate the soils and miscellaneous areas is needed.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes facts about the unit and gives the principal hazards or limitations to be considered in planning for a few specific uses. Soil suitability ratings are given for selected uses, including rangeland seeding, roadfill, daily cover for landfill, shallow excavations, local roads and streets, pond reservoir areas, embankments, dikes, levees, sand, and gravel. The Appendix lists criteria used to develop these ratings.

Soils that have profiles that are almost alike make up a *soil series*. The soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of one series can differ in texture of the upper layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Itme very stony loamy sand, 8 to 15 percent slopes, occasionally flooded, is one of several phases in the Itme series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or associations.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Settlement-Aquic Calciorthids complex is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Cirac-Gynelle-Oricto association is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Playas is an example.

The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Acreage and extent

The acreage and proportionate extent of the soils in the survey area are given in table 304.

Explanations of introductory phrases

In the map unit descriptions that follow, a semitabular format is used. In this format a boldface heading (for example, **Composition**) is used to identify the information grouped directly below it. Introducing each item of information under the heading is an italicized term or phrase (for example, *Contrasting inclusions*) that identifies or describes the information. Many of the headings and introductory terms or phrases are self-explanatory; however, some of them need further explanation. These explanations are provided in the following paragraphs, generally in the order in which they are used in the map unit descriptions.

Map unit setting is given for the entire map unit. The setting includes the landscape positions, elevation, and climate. The landscape positions given under "Map unit setting" generally are broader than those given for each major component. The elevation and climatic data given under "Map unit setting" are those applicable to the entire unit and are not given for the individual components.

Composition is given for the components identified in the name of the map unit as well as for the contrasting inclusions.

Inclusions are areas of components (soils or miscellaneous areas) that differ from the components for which the unit is named. Inclusions can be either similar or contrasting. *Similar inclusions* are components that differ from the components for which the unit is named but that for purposes of use and management can be considered to be the same as the named components. Note that under "Composition" a single percentage is provided for a named soil and the similar inclusions because their use and management are similar. Contrasting inclusions are components that differ sufficiently from the components for which the unit is named that they would have different use and management if they were extensive enough to be managed separately. For most uses, contrasting inclusions have limited effect on use and management. Inclusions generally are in small areas, and it is not practical to map them separately because of the scale used. Some small areas of strongly contrasting inclusions are identified by a special symbol on the detailed soil maps. A few inclusions may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the inclusions on the landscape.

Position on landscape refers to the dominant position or positions on which the component is located. In naming landscape positions, an effort has been made to give the specific position of the component rather than a general position that could encompass other components. In some instances, however, the component is distributed over a larger landscape to such a degree that it is more nearly accurate to name the larger landscape positions rather than the local ones.

Dominant present vegetation refers to the plants that were growing in noncultivated areas at the time this survey was made. The range condition can be judged by comparing the dominant present vegetation with that in the potential plant community.

Typical profile is a vertical, two-dimensional section of the soil extending from the surface to a restrictive layer or to a depth of 60 inches or more.

Engineering classification of the soils is determined according to the system adopted by the American Association of State Highway and Transportation Officials *(1)* and the Unified Soil classification system *(2)*. The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM. The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Permeability is the quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil.

Available water capacity is the capacity of the soil to hold water available for use by most plants. It commonly is expressed as inches of water per inch of soil (see "Glossary").

Water supplying capacity is the total water available in the soil for plant growth in a normal year from the precipitation, runon, and water available from a capillary fringe minus runoff.

Hydrologic soil group is used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms (see "Glossary").

Erosion factors (surface layer) refers to the susceptibility of the soil to erosion. *K value* indicates the susceptibility of a soil to sheet and rill erosion by water. *T value* indicates the maximum average annual rate of

soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. *Wind erodibility groups* indicate the susceptibility of soil to wind erosion. They are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas (see "Glossary").

Hazard of erosion refers to the hazard if protective cover is removed. The hazard of erosion is constant and cannot be increased or reduced.

Shrink-swell potential refers to the property of the soil that causes it to shrink or swell upon wetting or drying.

Corrosivity refers to the potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. Corrosivity to uncoated steel is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract. Corrosivity to concrete is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing.

Major uses can include *current uses* and *potential foreseeable uses*. Current uses are affected by factors such as changes in population patterns and economic considerations. Potential foreseeable uses are those to which the unit is suited or for which the unit could be used if some limitation or limitations were overcome.

Potential native plant community refers to the plant community that would exist if present environmental conditions were to continue without interference by man. Information on plant community is given in the tables. A scientific plant symbol and the common plant name are given (*17*).

Three remaining topics—elements of wildlife habitat, ratings for selected uses, and interpretive groups—are discussed in this section. Because discussion of these topics is detailed, they are described under separate headings in the following paragraphs.

Elements of wildlife habitat

The soils in the survey area are rated according to their suitability for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, orchardgrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are needlegrass, balsamroot, globemallow, wheatgrass, and bluegrass.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are singleleaf pinyon and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are mountainmahogany, bitterbrush, snowberry, and big sagebrush.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, reed canarygrass, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

Ratings for selected uses

In the detailed map units, the soils are rated for various uses and the most limiting features are identified. The ratings are based on observed performance of the soils and on the estimated data given in the map units

and lab test data. In this section the ratings for each use and the limiting features are defined.

Soil interpretations are periodically updated as more is learned about a soil and its behavior under specific uses. New technology can change the relative suitability of a soil for various uses; however, the soil maps remain useful after the soil interpretations originally published with them have become outdated. For this reason, the criteria and guides that were used to make the interpretations presented in the detailed map units are provided in the Appendix. These criteria have been taken directly from the National Soils Handbook (*18*).

The limitations for shallow excavations, local roads and streets, pond reservoir areas, and embankments, dikes, and levees are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic supporting capacity.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In the detailed map units, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the upper layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Rangeland seeding ratings are intended to be a relative rating that suggests the number of successful seeding establishments that might be expected during a given period of years. In addition, the number of plant species adapted to the soil decreases with decreasing soil suitability.

This rating is not intended to be a measure of the total annual yield. Productivity is dependent upon the interaction of most of the soil properties and characteristics that are considered.

Successful seeding of depleted areas of rangeland in Nevada results in decreased runoff and subsequently, decreased soil losses from erosion.

Soils that are best suited to seeding are those that are moderately deep or deeper; receive adequate moisture and can hold it; are resistent to sheet, rill, and wind erosion; are free of salts and alkali; and have a medium textured surface layer that is relatively free of rock fragments and is resistent to crusting.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. The soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the upper layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The performance of soil material after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of

excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragment content, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The upper layer generally has the best workability, more organic matter, and the best potential for plants. Material from the upper layer should be stockpiled for use as the final cover.

The soils are rated as a probable or improbable source of *sand* and *gravel.* The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. Only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

The limiting features of the soils in this survey area and a brief definition of each follows.

Cemented pan. A cemented pan is too close to the surface for the specified use.

Cutbanks cave. The walls of excavations tend to cave in or slough.

Deep to water. The soil is deep to a permanent water table during dry periods.

Depth to rock. Bedrock is too near the surface for the specified use.

Droughty. The soil holds too little water for plants during dry periods.

Erodes easily. Water erodes the soil easily.

Excess fines. Excess silt and clay are in the soil. The soil does not provide a source of gravel or sand for use in construction.

Excess humus. Too much organic matter is in the soil for the specified use.

Excess lime. The soil has excess carbonates that restrict the growth of some plants.

Excess salt. The soil has excess water-soluble salts that restrict the growth of most plants.

Excess sodium. The soil has excess exchangeable sodium that restricts the growth of plants.

Flooding. The soil is flooded by moving water from stream overflow, runoff, or high tides.

Frost action. The moisture in the soil freezes and thaws. Frost action can damage roads, buildings, and other structures.

Hard to pack. The soil is difficult to compact.

Large stones. The soil has rock fragments that are 3 inches (7.5 centimeters) in diameter or more.

Low strength. The soil is not strong enough to support a load.

No water. Depth to ground water is too great for the specified use.

Piping. Water moving through the soil forms subsurface tunnels or pipelike cavities.

Ponding. Water stands on the soil in closed depressional areas. The water can be removed only by percolation or evapotranspiration.

Rooting depth. The soil is shallow to a layer that greatly restricts roots; shallow root zone.

Salty water. Water is too salty for consumption by livestock.

Seepage. The movement of water through the soil. Seepage adversely affects the specified use of the soil.

Shrink-swell. The soil shrinks when dry and swells when wet.

Slope. The slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specified use.

Slow refill. The restricted permeability of the soil results in slow filling of ponds.

Small stones. The soil has rock fragments that are less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil blowing. The soil is easily moved by wind.

Subsides. The soil settles because of the content of organic matter or the presence of saturated mineral layers.

Too arid. The soil is dry most of the time, and vegetation is difficult to establish.

Too clayey. The soil is slippery and sticky when wet and is slow to dry.

Too sandy. The soil is soft and loose; it is droughty and low in fertility.

Wetness. The soil is wet during the period of use.

Interpretive groups

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

A *range site* is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other range sites in kind, amount, and proportion of range plants. The relationship between soils and vegetation was established during this survey; thus, range sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, salt content, and a seasonal water table are also important.

Woodland suitability group (ordination symbol) is given for the soils suitable for wood crops. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol,* a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *x* indicates stoniness or rockiness; *w,* excessive water in or on the soil; *t,* toxic substances in the soil; *d,* restricted root depth; *c,* clay in the upper part of the soil; *s,* sandy texture; *f,* high content of coarse fragments in the soil profile; and *r,* steep slopes. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: r, x, w, t, d, c, s, and f.

Detailed Map Unit Descriptions

Interpretive groups

Land capability classification.—This classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only

class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter—e, w, s, or c—to the class numeral, for example, IIe. The letter e shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by w, s, or c because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

Site symbols.—The site symbols given in each map unit identify a distinctive kind of grazing land that produces a characteristic natural plant community that differs from natural plant communities on other sites in kind, amount, and proportion of forage plants. The relationship between soils and vegetation was established during this survey; thus, grazing sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of forage plants. Soil reaction, salt content, and a seasonal water table are also important.

In each detailed soil map unit in this survey, a table entitled "Potential plant community" is presented. The range sites for which data are given in these tables are identified by "site symbols." Additional information on these symbols is available at the local office of the Soil Conservation Service.

Woodland suitability group.—Soils suitable for wood crops are placed in a woodland suitability group and assigned an ordination symbol. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the ordination symbol, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter x indicates stoniness or rockiness; w, excessive water in or on the soil; t, toxic substances in the soil; d, restricted root depth; c, clay in the upper part of the soil; s, sandy texture; f, high content of coarse fragments in the soil profile; and r, steep slopes. The letter o indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: r, x, w, t, d, c, s, and f.

Map Unit Descriptions

100—Unsel-Belted-Orphant association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—40 percent
Belted gravelly loamy sand, 2 to 8 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—30 percent
Orphant gravelly sandy loam, 2 to 4 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Inclusion 3: Roic very gravelly fine sand, dry, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—2 percent

Unsel Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, Cooper wolfberry, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Moderately slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belted Soil

Position on landscape: Upper part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, Cooper wolfberry, Indian ricegrass, galleta
Typical profile:
0 to 6 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
6 to 13 inches—sandy clay loam, gravelly clay loam, loam; 0 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC, CL, SC; estimated AASHTO classification - A-6, A-2
13 to 25 inches—cemented
25 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to hardpan: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1 to 2 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Orphant Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex

Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, Cooper wolfberry, Indian ricegrass, galleta
Typical profile:
0 to 5 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
5 to 17 inches—gravelly fine sandy loam, loam, sandy clay loam; 0 to 10 percent cobbles and stones and 0 to 40 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
17 to 60 inches or more—cemented
Range in depth to cemented layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans, drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—inset fans, drainageways; distinctive present vegetation—shadscale, bud sagebrush, Bailey greasewood
Inclusion 3: Position on landscape—rock pediments adjacent to fan piedmonts; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 1)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Belted soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Orphant soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Belted Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Orphant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Unsel soil—VIIc, nonirrigated; Belted soil—VIIs, nonirrigated; Orphant soil—VIIs, nonirrigated
Site symbol: Unsel soil—029X017N; Belted soil—029X017N; Orphant soil—029X017N

TABLE 1.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel	Belted	Orphant	1	2	3
Galleta	HIJA	10-25	10-25	10-25	---	10-25	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10	2-5
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	2-5	1-2
Needlegrass	STIPA	2-5	2-5	2-5	---	2-5	---
King desertgrass	BLKI	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	5-15	1-5
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	4-10	2-6	4-10	2-5
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	10-25	---	10-25	40-60
Bailey greasewood	SAVEB	5-10	5-10	5-10	2-10	5-10	10-15
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10	2-5
Winterfat	EULA5	5-10	5-10	5-10	---	5-10	---
Nevada ephedra	EPNE	1-5	1-5	1-5	2-5	1-5	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	2-5
Nevada dalea	DAPO2	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	1-2	1-2	1-2	---	1-2	---
Site symbol		029X017N	029X017N	029X017N	029X041N	029X017N	029X033N
Potential production (lb/acre):							
Favorable years		350	350	350	500	350	100
Normal years		250	250	250	300	250	50
Unfavorable years		100	100	100	100	100	25

101—Unsel-Wardenot-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,400 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—45 percent
Wardenot gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Izo gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Noyson gravelly sandy loam, 2 to 4 percent slopes (Entic Durorthids - coarse-loamy, mixed, mesic)—5 percent
Inclusion 2: Stumble gravelly sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent
Inclusion 3: Advokay gravelly coarse sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—2 percent

Unsel Soil

Position on landscape: Summits and upper side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—plane to convex
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—slightly convex
Dominant present vegetation: Shadscale, fourwing saltbush, bud sagebrush, Indian ricegrass
Typical profile:
0 to 7 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave
Dominant present vegetation: Burrobrush, shadscale, Bailey greasewood, galleta, Indian ricegrass, fourwing saltbush
Typical profile:
0 to 8 inches—gravelly sand; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—2
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—toe slopes of fan piedmonts, adjacent fan remnants; distinctive present vegetation—Indian ricegrass, shadscale, bud sagebrush
Inclusion 2: Position on landscape—side slopes of drainageways; distinctive present vegetation—fourwing saltbush, Indian ricegrass, horsebrush
Inclusion 3: Position on landscape—hills, piedmonts adjacent to fan piedmonts; distinctive present vegetation—Indian ricegrass, bud sagebrush, galleta
Inclusions of minor extent: Position on landscape—fan-piedmont remnants; distinctive present vegetation—spiny mendora

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 2)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, too sandy, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source

TABLE 2.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel	Wardenot	Izo	1	2	3
Galleta	HIJA	10-25	10-25	---	10-25	2-5	10-25
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	20-30	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	---	2-5
Needlegrass	STIPA	2-5	2-5	---	2-5	2-5	2-5
Dropseed	SPORO	---	---	---	---	5-25	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15	5-15	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	2-5	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	4-10	5-10	4-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	2-5	1-5
Shadscale	ATCO	10-25	10-25	---	10-25	---	10-25
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	---	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10	5-10
Winterfat	EULA5	5-10	5-10	---	5-10	5-20	5-10
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	---	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	15-25	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Spiny hopsage	GRSP	---	---	---	---	1-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2	---	1-2
Site symbol		029X017N	029X017N	029X041N	029X017N	029X012N	029X017N
Potential production (lb/acre):							
Favorable years		350	350	500	350	500	350
Normal years		250	250	300	250	350	250
Unfavorable years		100	100	100	100	200	100

Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Unsel soil—VIIc, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Unsel soil—029X017N; Wardenot soil—029X017N; Izo soil—029X041N

103—Unsel-Silverbow-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts, alluvial fans
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—45 percent
Silverbow very stony fine sandy loam, 8 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Stumble loamy sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—6 percent
Inclusion 3: Roic very gravelly fine sandy loam, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—3 percent

Unsel Soil

Position on landscape: Dissected fan piedmonts and alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Silverbow Soil

Position on landscape: Upper part of alluvial fans and fan piedmonts, toe slopes of hills
Parent material: Mixed alluvium and colluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass
Typical profile:
0 to 2 inches—very stony fine sandy loam; 5 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very stony clay loam, very cobbly clay loam, extremely cobbly sandy clay loam; 30 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
10 to 18 inches—indurated
18 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave
Dominant present vegetation: Shadscale, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, Indian ricegrass, galleta
Inclusion 2: Position on landscape—side slopes of drainageways, sand sheets on fan piedmonts; distinctive present vegetation—fourwing saltbush, Indian ricegrass
Inclusion 3: Position on landscape—hills adjacent to fan piedmonts; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 3)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Silverbow soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Silverbow Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, droughty
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding

TABLE 3.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel	Silverbow	Izo	1	2	3
Galleta	HIJA	10-25	5-10	---	5-20	2-5	---
Indian ricegrass	ORHY	5-10	5-20	5-10	5-15	20-30	2-5
Bottlebrush squirreltail	SIHY	2-5	---	---	2-5	---	1-2
Needlegrass	STIPA	2-5	---	---	5-10	2-5	---
Dropseed	SPORO	---	---	---	---	5-25	---
King desertgrass	BLKI	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-15	5-10	5-10	5-10	5-15	1-5
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	2-5	1-5
Perennial forbs	PPFF	4-10	5-10	2-6	5-10	5-10	2-5
Native annual forbs	AAFF	1-5	2-5	1-5	2-5	2-5	1-5
Shadscale	ATCO	10-25	5-15	---	15-25	---	40-60
Bailey greasewood	SAVEB	5-10	5-15	2-10	5-15	---	10-15
Bud sagebrush	ARSP5	5-10	5-10	---	2-5	5-10	2-5
Winterfat	EULA5	5-10	---	---	---	5-20	---
Nevada ephedra	EPNE	1-5	5-10	2-5	2-5	---	---
Spiny menodora	MESP2	---	10-30	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	15-25	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	2-5
Spiny hopsage	GRSP	---	---	---	---	1-5	---
Nevada dalea	DAPO2	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	1-2	---	---	---	---	---
Site symbol		029X017N	029X036N	029X041N	029X022N	029X012N	029X033N
Potential production (lb/acre):							
Favorable years		350	400	500	300	500	100
Normal years		250	300	300	200	350	50
Unfavorable years		100	100	100	100	200	25

Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Unsel soil—VIIc, nonirrigated; Silverbow soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Unsel soil—029X017N; Silverbow soil—029X036N; Izo soil—029X041N

105—Unsel-Itme-Advokay association

Map Unit Setting

Position on landscape: Rock pediments, alluvial fans, hills
Elevation: 5,400 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—35 percent
Itme gravelly loamy sand, dry, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Advokay gravelly coarse sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Roic very gravelly fine sandy loam, dry, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—5 percent
Inclusion 3: Stewval very stony fine sandy loam, 8 to 15 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent

Unsel Soil

Position on landscape: Erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—plane to convex
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Indian ricegrass, bud sagebrush
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less

than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Advokay Soil

Position on landscape: Hills, dissected rock pediments
Parent material: Kind—colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—hills; distinctive present vegetation—shadscale, Indian ricegrass, galleta
Inclusion 2: Position on landscape—hills; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—north facing slopes of hills; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 4)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock

TABLE 4.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel	Itme	Advokay	1	2	3
Galleta	HIJA	10-25	10-25	10-25	5-20	---	5-15
Indian ricegrass	ORHY	5-10	5-10	5-10	5-15	2-5	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	1-2	1-5
Needlegrass	STIPA	2-5	2-5	2-5	5-10	---	2-10
King desertgrass	BLKI	---	---	---	---	1-2	---
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	1-5	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	4-10	5-10	2-5	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	10-25	15-25	40-60	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	5-15	10-15	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	2-5	2-5	2-5
Winterfat	EULA5	5-10	5-10	5-10	---	---	2-5
Nevada ephedra	EPNE	1-5	1-5	1-5	2-5	---	5-10
Nevada dalea	DAPO2	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	5-15	10-20
Joshua-tree	YUBR	1-2	1-2	1-2	---	---	---
Site symbol		029X017N	029X017N	029X017N	029X022N	029X033N	029X014N
Potential production (lb/acre):							
Favorable years		350	350	350	300	100	500
Normal years		250	250	250	200	50	300
Unfavorable years		100	100	100	100	25	100

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Unsel soil—VIIc, nonirrigated; Itme soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated
Site symbol: Unsel soil—029X017N; Itme soil—029X017N; Advokay soil—029X017N

106—Unsel-Wardenot-Terlco association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts, alluvial fans
Elevation: 5,300 to 5,800 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—40 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Terlco very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Oricto very gravelly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Advokay gravelly coarse sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—2 percent

Unsel Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Foot slopes of fan piedmonts, inset fans, alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches

Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Terlco Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, bud sagebrush, spiny menodora, galleta, shadscale
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—sparse shadscale, Bailey greasewood, Cooper wolfberry
Inclusion 3: Position on landscape—rock pediments and hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 5)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 5.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel	Wardenot	Terlco	1	2	3
Galleta	HIJA	10-25	10-25	5-10	---	---	10-25
Indian ricegrass	ORHY	5-10	5-10	5-20	5-10	1-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	---	---	2-5
Needlegrass	STIPA	2-5	2-5	---	---	---	2-5
King desertgrass	BLKI	---	---	---	---	1-2	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-10	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	5-10	2-6	5-10	4-10
Native annual forbs	AAFF	1-5	1-5	2-5	1-5	2-5	1-5
Shadscale	ATCO	10-25	10-25	5-15	---	20-40	10-25
Bailey greasewood	SAVEB	5-10	5-10	5-15	2-10	10-15	5-10
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	---	5-10
Winterfat	EULA5	5-10	5-10	---	---	---	5-10
Nevada ephedra	EPNE	1-5	1-5	5-10	2-5	---	1-5
Spiny menodora	MESP2	---	---	10-30	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	5-15	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	5-15	10-20
Joshua-tree	YUBR	1-2	1-2	---	---	---	1-2
Site symbol		029X017N	029X017N	029X036N	029X041N	029X032N	029X017N
Potential production (lb/acre):							
Favorable years		350	350	400	500	150	350
Normal years		250	250	300	300	100	250
Unfavorable years		100	100	100	100	50	100

(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium

Interpretive Groups

Capability classification: Unsel soil—VIIc, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Terlco soil—VIIs, nonirrigated

Site symbol: Unsel soil—029X017N; Wardenot soil—029X017N; Terlco soil—029X036N

108—Unsel-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Unsel very cobbly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—70 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - fine-loamy, mixed, mesic)—8 percent
Inclusion 2: Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Unsel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood, Indian ricegrass, galleta, Cooper wolfberry
Typical profile:
0 to 7 inches—very cobbly sandy loam; 40 to 50 percent cobbles and stones and 20 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 20); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, Bailey greasewood, galleta, Indian ricegrass
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3

Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—higher fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greaswood
Inclusion 2: Position on landscape—fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, spiny hopsage, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 6)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Unsel soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Unsel soil—029X017N; Izo soil—029X041N

TABLE 6.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Unsel	Izo	1	2	3
Galleta	HIJA	10-25	---	10-25	10-25	1-3
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	2-5
Bottlebrush squirreltail	SIHY	2-5	---	2-5	2-5	---
Needlegrass	STIPA	2-5	---	2-5	2-5	---
Basin wildrye	ELCI2	---	---	---	---	2-5
Other perennial grasses	PPGG	5-15	5-10	5-15	5-15	5-10
Native annual grasses	AAGG	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	2-6	4-10	4-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	---	10-25	10-25	---
Bailey greasewood	SAVEB	5-10	2-10	5-10	5-10	---
Bud sagebrush	ARSP5	5-10	---	5-10	5-10	---
Winterfat	EULA5	5-10	---	5-10	5-10	---
Nevada ephedra	EPNE	1-5	2-5	1-5	1-5	1-5
Rubber rabbitbrush	CHNA2	---	10-25	---	---	2-5
Fourwing saltbush	ATCA2	---	5-15	---	---	---
Burrobrush	HYMEN3	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---	1-5
Cooper wolfberry	LYCO2	---	2-5	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	1-2	---	1-2	1-2	---
Site symbol		029X017N	029X041N	029X017N	029X017N	029X009N
Potential production (lb/acre):						
Favorable years		350	500	350	350	700
Normal years		250	300	250	250	500
Unfavorable years		100	100	100	100	200

109—Unsel-Advokay-Blacktop association

Map Unit Setting

Position on landscape: Rock pediments, fan piedmont remnants
Elevation: 5,500 to 6,100 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Unsel very gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—50 percent
Advokay gravelly coarse sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—20 percent
Blacktop very gravelly fine sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Rock outcrop—4 percent
Inclusion 3: Stewval very gravelly sandy loam, 8 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Unsel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 7 inches—very gravelly fine sandy loam; 15 to 30 percent cobbles and stones and 40 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC, GM-GC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, extremely gravelly sand; 65 to 85 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Advokay Soil

Position on landscape: Summits of rock pediments
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass, bud sagebrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D

Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Summits and side slopes of rock pediments
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—side slopes of rock pediments; distinctive present vegetation—barren
Inclusion 3: Position on landscape—north-facing side slopes of rock pediments; distinctive present vegetation—black sagebrush, galleta, ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 7)

Elements of Wildlife Habitat

Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Unsel soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Unsel soil—029X017N; Advokay soil—029X017N; Blacktop soil—029X033N

TABLE 7.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel	Advokay	Blacktop	1	2	3
Galleta	HIJA	10-25	10-25	---	---	---	5-15
Indian ricegrass	ORHY	5-10	5-10	2-5	5-10	---	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	1-2	---	---	1-5
Needlegrass	STIPA	2-5	2-5	---	---	---	2-10
King desertgrass	BLKI	---	---	1-2	---	---	---
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-15	5-15	1-5	5-10	---	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	---	1-5
Perennial forbs	PPFF	4-10	4-10	2-5	2-6	---	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	---	1-5
Shadscale	ATCO	10-25	10-25	40-60	---	---	---
Bailey greasewood	SAVEB	5-10	5-10	10-15	2-10	---	---
Bud sagebrush	ARSP5	5-10	5-10	2-5	---	---	2-5
Winterfat	EULA5	5-10	5-10	---	---	---	2-5
Nevada ephedra	EPNE	1-5	1-5	---	2-5	---	5-10
Nevada dalea	DAPO2	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Other shrubs	SSSS	10-20	10-20	5-15	10-20	---	10-20
Joshua-tree	YUBR	1-2	1-2	---	---	---	---
Site symbol		029X017N	029X017N	029X033N	029X041N	---	029X014N
Potential production (lb/acre):							
Favorable years		350	350	100	500	---	500
Normal years		250	250	50	300	---	300
Unfavorable years		100	100	25	100	---	100

110—Blacktop-Rock outcrop-Pintwater association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,000 to 6,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Blacktop very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—40 percent
Rock outcrop—25 percent
Pintwater very cobbly fine sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very gravelly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, moist, 30 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Blacktop Soil

Position on landscape: Erosional side slopes of hills, mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Scattered peaks on hills and mountains
Dominant present vegetation: Barren

Pintwater Soil

Position on landscape: Side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—higher stable side slopes of hills and mountains; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—crests and stable side slopes of hills and mountains; distinctive present vegetation—shadscale, Bailey greaswood
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 8)

Elements of Wildlife Habitat

Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage

Interpretive Groups

Capability classification: Blacktop soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Pintwater soil—VIIs, nonirrigated
Site symbol: Blacktop soil—029X033N; Pintwater soil—029X022N

TABLE 8.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Blacktop	Rock outcrop	Pintwater	1	2	3
Indian ricegrass	ORHY	2-5	---	5-15	5-10	2-5	5-10
King desertgrass	BLKI	1-2	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-2	---	2-5	1-5	---	---
Galleta	HIJA	---	---	5-20	5-15	10-20	---
Needlegrass	STIPA	---	---	5-10	2-10	5-10	---
Bluegrass	POA++	---	---	---	2-10	---	---
Other perennial grasses	PPGG	1-5	---	5-10	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	---	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	2-5	---	5-10	5-10	5-10	2-6
Native annual forbs	AAFF	1-5	---	2-5	1-5	2-5	1-5
Shadscale	ATCO	40-60	---	15-25	---	2-5	---
Bailey greasewood	SAVEB	10-15	---	5-15	---	5-10	2-10
Nevada dalea	DAPO2	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	---	---	2-5
Bud sagebrush	ARSP5	2-5	---	2-5	2-5	2-5	---
Nevada ephedra	EPNE	---	---	2-5	5-10	5-10	2-5
Black sagebrush	ARARN	---	---	---	15-20	---	---
Winterfat	EULA5	---	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	---	---	10-25	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	---	10-20	10-20	15-25	10-20
Site symbol		029X033N	---	029X022N	029X014N	029X037N	029X041N
Potential production (lb/acre):							
Favorable years		100	---	300	500	300	500
Normal years		50	---	200	300	200	300
Unfavorable years		25	---	100	100	100	100

111—Blacktop-Rodad-Theriot association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 4,500 to 6,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 54 degrees F
Frost-free season—about 135 days

Composition

Blacktop very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—40 percent
Rodad very cobbly loam, 30 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Theriot very gravelly sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—8 percent
Inclusion 2: Izo very gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Weepah very cobbly fine sandy loam, 30 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—3 percent

Blacktop Soil

Position on landscape: Side slopes of hills and mountains
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rodad Soil

Position on landscape: Hills, mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Anderson wolfberry, Bailey greasewood, galleta
Typical profile:
0 to 4 inches—very cobbly loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Theriot Soil

Position on landscape: Hills, mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite

Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Anderson wolfberry
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2;
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—shoulders of mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 3: Position on landscape—north-facing mountainsides; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 9)

Elements of Wildlife Habitat

Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, large stones, slope
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, large stones, slope
Sand: Improbable source—large stones, excess fines
Gravel: Improbable source—large stones, excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones

Interpretive Groups

Capability classification: Blacktop soil—VIIs, nonirrigated; Rodad soil—VIIs, nonirrigated; Theriot soil—VIIs, nonirrigated
Site symbol: Blacktop soil—029X033N; Rodad soil—029X022N; Theriot soil—029X022N

TABLE 9.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Blacktop	Rodad	Theriot	1	2	3
Indian ricegrass	ORHY	2-5	5-15	5-15	---	5-10	5-10
King desertgrass	BLKI	1-2	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-2	2-5	2-5	---	---	1-5
Galleta	HIJA	---	5-20	5-20	---	---	5-15
Needlegrass	STIPA	---	5-10	5-10	---	---	2-10
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	1-5	5-10	5-10	---	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	---	2-4	1-5
Perennial forbs	PPFF	2-5	5-10	5-10	---	2-6	5-10
Native annual forbs	AAFF	1-5	2-5	2-5	---	1-5	1-5
Shadscale	ATCO	40-60	15-25	15-25	---	---	---
Bailey greasewood	SAVEB	10-15	5-15	5-15	---	2-10	---
Nevada dalea	DAPO2	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	---	2-5	---
Bud sagebrush	ARSPS	2-5	2-5	2-5	---	---	2-5
Nevada ephedra	EPNE	---	2-5	2-5	---	2-5	5-10
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Winterfat	EULA5	---	---	---	---	---	2-5
Other shrubs	SSSS	5-15	10-20	10-20	---	10-20	10-20
Site symbol		029X033N	029X022N	029X022N	---	029X041N	029X014N
Potential production (lb/acre):							
Favorable years		100	300	300	---	500	500
Normal years		50	200	200	---	300	300
Unfavorable years		25	100	100	---	100	100

112—Blacktop-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 4,500 to 6,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Blacktop very gravelly sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—45 percent
Rock outcrop—40 percent
Contrasting inclusions as follows—
Inclusion 1: Advokay very gravelly coarse sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—8 percent
Inclusion 2: Xeric Torriorthents, 15 to 50 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Wardenot very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Blacktop Soil

Position on landscape: Hills, mountainsides
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders of hills and mountainsides
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountainsides; distinctive present vegetation—shadscale, Indian ricegrass
Inclusion 2: Position on landscape—north-facing foot slopes of mountains; distinctive present vegetation—black sagebrush, big sagebrush, Utah juniper
Inclusion 3: Position on landscape—inset fans, foot slopes of fan piedmonts; distinctive present vegetation—shadscale, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 10)

Elements of Wildlife Habitat

Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Blacktop soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Blacktop soil—029X033N

TABLE 10.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Blacktop	Rock outcrop	1	2	3
Indian ricegrass	ORHY	2-5	---	5-10	5-10	5-10
King desertgrass	BLKI	1-2	---	---	---	---
Bottlebrush squirreltail	SIHY	1-2	---	2-5	1-5	2-5
Galleta	HIJA	---	---	10-25	5-15	10-25
Needlegrass	STIPA	---	---	2-5	2-10	2-5
Bluegrass	POA++	---	---	---	2-10	---
Other perennial grasses	PPGG	1-5	---	5-15	10-15	5-15
Native annual grasses	AAGG	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	2-5	---	4-10	5-10	4-10
Native annual forbs	AAFF	1-5	---	1-5	1-5	1-5
Shadscale	ATCO	40-60	---	10-25	---	10-25
Bailey greasewood	SAVEB	10-15	---	5-10	---	5-10
Nevada dalea	DAPO2	5-10	---	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	---	---
Bud sagebrush	ARSP5	2-5	---	5-10	2-5	5-10
Winterfat	EULA5	---	---	5-10	2-5	5-10
Nevada ephedra	EPNE	---	---	1-5	5-10	1-5
Black sagebrush	ARARN	---	---	---	15-20	---
Other shrubs	SSSS	5-15	---	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	1-2	---	1-2
Site symbol		029X033N	---	029X017N	029X014N	029X017N
Potential production (lb/acre):						
Favorable years		100	---	350	500	350
Normal years		50	---	250	300	250
Unfavorable years		25	---	100	100	100

115—Blacktop-Rock outcrop-Wahguyhe association

Map Unit Setting

Position on landscape: Hills, mountainsides
Elevation: 5,600 to 7,800 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Blacktop very gravelly fine sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—40 percent
Rock outcrop—25 percent
Wahguyhe very stony sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Advokay very gravelly coarse sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—8 percent
Inclusion 2: Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Beelem very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy, mixed (calcareous), mesic)—2 percent

Blacktop Soil

Position on landscape: Side slopes of hills and mountains
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, horsebrush
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders of hills and mountains
Dominant present vegetation: Barren

Wahguyhe Soil

Position on landscape: North-facing slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, rabbitbrush
Typical profile:
0 to 8 inches—very stony sandy loam; 25 to 30 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stable areas on hills and mountainsides; distinctive present vegetation—shadscale, Bailey greasewood, horsebrush

Inclusion 2: Position on landscape—north-facing slopes of hills and mountains; distinctive present vegetation—Wyoming big sagebrush, ephedra

Inclusion 3: Position on landscape—hills and mountainsides near areas of Rock outcrop; distinctive present vegetation—black sagebrush, Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 11)

Elements of Wildlife Habitat

Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Blacktop Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Wahguyhe Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage

Interpretive Groups

Capability classification: Blacktop soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Wahguyhe soil—VIIs, nonirrigated

Site symbol: Blacktop soil—029X033N; Wahguyhe soil—029X010N

TABLE 11.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Blacktop	Rock outcrop	Wahguyhe	1	2	3
Indian ricegrass	ORHY	2-5	---	5-10	5-10	5-10	2-5
King desertgrass	BLKI	1-2	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-2	---	1-4	2-5	1-4	2-5
Galleta	HIJA	---	---	5-15	10-25	5-15	---
Needlegrass	STIPA	---	---	5-10	2-5	5-10	---
Dropseed	SPORO	---	---	1-5	---	1-5	---
Other perennial grasses	PPGG	1-5	---	5-20	5-15	5-20	2-10
Native annual grasses	AAGG	1-5	---	1-5	1-5	1-5	---
Perennial forbs	PPFF	2-5	---	4-10	4-10	4-10	2-5
Native annual forbs	AAFF	1-5	---	2-7	1-5	2-7	---
Shadscale	ATCO	40-60	---	---	10-25	---	---
Bailey greasewood	SAVEB	10-15	---	---	5-10	---	---
Nevada dalea	DAPO2	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	---	---	---
Bud sagebrush	ARSP5	2-5	---	---	5-10	---	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---	20-30	10-25
Nevada ephedra	EPNE	---	---	5-10	1-5	5-10	5-15
Winterfat	EULA5	---	---	---	5-10	---	---
Black sagebrush	ARARN	---	---	---	---	---	20-35
Green ephedra	EPVI	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	---	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	---	---	---	1-2	---	---
Utah juniper	JUOS	---	---	---	---	---	2-5
Singleleaf pinyon	PIMO	---	---	---	---	---	2-5
Site symbol		O29XO33N	---	O29XO10N	O29XO17N	O29XO10N	O29XO81N
Potential production (lb/acre):							
Favorable years		100	---	600	350	600	125
Normal years		50	---	400	250	400	75
Unfavorable years		25	---	200	100	200	25

120—Leo-Belcher association

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats
Elevation: 4,700 to 5.400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—60 percent
Belcher gravelly sand, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Stumble loamy sand, 0 to 2 percent slopes (Typic Torripsamments - mixed, mesic)—9 percent
Inclusion 2: Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent

Leo Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Dalea, littleleaf horsebrush, fourwing saltbush, Indian ricegrass, Cooper wolfberry
Typical profile:
0 to 4 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belcher Soil

Position on landscape: Alluvial flats
Parent material: Kind—alluvium; source—lake sediment
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, Cooper wolfberry, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan skirts; distinctive present vegetation—Indian ricegrass, fourwing saltbush
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 12)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing

TABLE 12.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Leo	Belcher	1	2
Galleta	HIJA	5-20	5-20	2-5	---
Indian ricegrass	ORHY	5-10	5-10	20-30	5-10
Dropseed	SPORO	5-15	5-15	5-25	---
Needlegrass	STIPA	2-5	2-5	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	2-5	2-4
Perennial forbs	PPFF	5-7	5-7	5-10	2-6
Native annual forbs	AAFF	2-4	2-4	2-5	1-5
Fourwing saltbush	ATCA2	10-15	10-15	15-25	5-15
Winterfat	EULA5	5-20	5-20	5-20	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---
Spiny hopsage	GRSP	2-8	2-8	1-5	---
Anderson wolfberry	LYAN	1-5	1-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Bailey greasewood	SAVEB	---	---	---	2-10
Nevada ephedra	EPNE	---	---	---	2-5
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	10-25	10-25	10-20	10-20
Site symbol		029X046N	029X046N	029X012N	029X041N
Potential production (lb/acre):					
Favorable years		450	450	500	500
Normal years		350	350	350	300
Unfavorable years		175	175	200	100

Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Moderate—depth to rock, cemented pan
Roadfill: Poor—depth to rock, cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Leo soil—VIIs, nonirrigated; Belcher soil—VIIs, nonirrigated
Site symbol: Leo soil—029X046N; Belcher soil—029X046N

121—Leo-Ardivey association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 5,400 to 5,900 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—70 percent
Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Izo very gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Tokoper very gravelly fine sandy loam, 4 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—2 percent

Leo Soil

Position on landscape: Fan skirts, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Galleta, Indian ricegrass, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GM, SM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants; distinctive present vegetation—shadscale, galleta, spiny menodora
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—rabbitbrush, burrobrush
Inclusion 3: Position on landscape—rock pediment remnants adjacent to fan piedmonts; distinctive present vegetation—galleta, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 13)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Leo soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated
Site symbol: Leo soil—029X046N; Ardivey soil—029X036N

TABLE 13.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Leo	Ardivey	1	2	3
Galleta	HIJA	5-20	5-10	5-10	---	5-10
Indian ricegrass	ORHY	5-10	5-20	5-20	5-10	5-10
Dropseed	SPORO	5-15	---	---	---	---
Needlegrass	STIPA	2-5	---	---	---	5-10
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	5-7	5-10	5-10	2-6	5-10
Native annual forbs	AAFF	2-4	2-5	2-5	1-5	2-5
Fourwing saltbush	ATCA2	10-15	---	---	5-15	---
Winterfat	EULA5	5-20	---	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	2-5
Spiny hopsage	GRSP	2-8	---	---	---	---
Anderson wolfberry	LYAN	1-5	---	---	---	5-10
Spiny menodora	MESP2	---	10-30	10-30	---	---
Bailey greasewood	SAVEB	---	5-15	5-15	2-10	---
Shadscale	ATCO	---	5-15	5-15	---	15-20
Nevada ephedra	EPNE	---	5-10	5-10	2-5	5-10
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Nevada dalea	DAPO2	---	---	---	---	2-5
Other shrubs	SSSS	10-25	10-20	10-20	10-20	10-20
Site symbol		029X046N	029X036N	029X036N	029X041N	029X031N
Potential production (lb/acre):						
Favorable years		450	400	400	500	400
Normal years		350	300	300	300	250
Unfavorable years		175	100	100	100	150

122—Leo-Izo association

Map Unit Setting

Position on landscape: Inset fans, fan skirts
Elevation: 4,600 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—55 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly sand, alkali, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Gynelle very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent

Leo Soil

Position on landscape: Inset fans, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 4 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—toe slopes of fan piedmonts, adjacent to fan skirts and inset fans; distinctive present vegetation—black greasewood
Inclusion 2: Position on landscape—inset fans, fan skirts; distinctive present vegetation—Bailey greasewood, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 14)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:

TABLE 14.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Leo	Belcher	1	2
Galleta	HIJA	5-20	---	1-2	---
Indian ricegrass	ORHY	5-10	5-10	2-5	10-20
Dropseed	SPORO	5-15	---	---	---
Needlegrass	STIPA	2-5	---	---	---
Bottlebrush squirreltail	SIHY	---	---	1-2	5-10
Other perennial grasses	PPGG	5-10	5-10	2-5	5-10
Native annual grasses	AAGG	1-5	2-4	2-5	---
Perennial forbs	PPFF	5-7	2-6	2-6	3-7
Native annual forbs	AAFF	2-4	1-5	3-5	2-5
Fourwing saltbush	ATCA2	10-15	5-15	---	---
Winterfat	EULA5	5-20	---	---	---
Bud sagebrush	ARSP5	5-10	---	---	---
Spiny hopsage	GRSP	2-8	---	---	---
Anderson wolfberry	LYAN	1-5	---	---	---
Rubber rabbitbrush	CHNA2	---	10-25	---	---
Burrobrush	HYMEN3	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---
Bailey greasewood	SAVEB	---	2-10	5-10	5-10
Nevada ephedra	EPNE	---	2-5	---	---
Cooper wolfberry	LYCO2	---	2-5	---	5-20
Shadscale	ATCO	---	---	30-50	10-20
Black greasewood	SAVE4	---	---	10-20	---
Other shrubs	SSSS	10-25	10-20	10-25	5-15
Site symbol		029X046N	029X041N	029X063N	027X043N
Potential production (lb/acre):					
Favorable years		450	500	200	400
Normal years		350	300	100	200
Unfavorable years		175	100	50	100

Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Leo soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Leo soil—029X046N; Izo soil—029X041N

124—Leo-Koyen association

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats, lower part of fan piedmonts
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—50 percent
Koyen fine sandy loam, 0 to 4 percent slopes (Typic Camborthids - coarse-loamy, mixed, mesic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Stumble loamy fine sand, 0 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—9 percent
Inclusion 2: Izo very gravelly sand, 0 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent

Leo Soil

Position on landscape: Fan skirts and toe slopes of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, fourwing saltbush, Indian ricegrass, shadscale
Typical profile:
0 to 4 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Koyen Soil

Position on landscape: Fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, fourwing saltbush, Nevada dalea, shadscale, Indian ricegrass, galleta
Typical profile:
0 to 4 inches—fine sandy loam; 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 15 inches—sandy loam; 5 to 15 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
15 to 35 inches—stratified loam to gravelly loamy sand; 15 to 25 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
35 to 60 inches or more—gravelly loamy sand, very gravelly loamy sand; 45 to 55 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM, SP-SM, SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 5.5 to 6.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.32; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan skirts, alluvial flats; distinctive present vegetation—Indian ricegrass, fourwing saltbush
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 15)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Koyen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Koyen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Leo soil—VIIs, nonirrigated; Koyen soil—IIe, irrigated, and VIIc, nonirrigated
Site symbol: Leo soil—029X046N; Koyen soil—029X046N

TABLE 15.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Leo	Koyen	1	2
Galleta	HIJA	5-20	5-20	2-5	---
Indian ricegrass	ORHY	5-10	5-10	20-30	5-10
Dropseed	SPORO	5-15	5-15	5-25	---
Needlegrass	STIPA	2-5	2-5	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	2-5	2-4
Perennial forbs	PPFF	5-7	5-7	5-10	2-6
Native annual forbs	AAFF	2-4	2-4	2-5	1-5
Fourwing saltbush	ATCA2	10-15	10-15	15-25	5-15
Winterfat	EULA5	5-20	5-20	5-20	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---
Spiny hopsage	GRSP	2-8	2-8	1-5	---
Anderson wolfberry	LYAN	1-5	1-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Bailey greasewood	SAVEB	---	---	---	2-10
Nevada ephedra	EPNE	---	---	---	2-5
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	10-25	10-25	10-20	10-20
Site symbol		029X046N	029X046N	029X012N	029X041N
Potential production (lb/acre):					
Favorable years		450	450	500	500
Normal years		350	350	350	300
Unfavorable years		175	175	200	100

126—Leo-Itme-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Leo very gravelly sandy loam, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—40 percent
Itme very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Durorthidic Torriorthents, 2 to 8 percent slopes (Durorthidic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent

Leo Soil

Position on landscape: Fan piedmonts, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, bud sagebrush, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Fan piedmonts, fan skirts
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, shadscale, fourwing saltbush, littleleaf horsebrush, Indian ricegrass
Typical profile:
0 to 3 inches—very gravelly sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP, SP-SM; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, dalea, galleta, Indian ricegrass
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora, Joshua-tree

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 16)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, piping
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Leo soil—VIIs, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Leo soil—029X046N; Itme soil—029X016N; Izo soil—029X041N

TABLE 16.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Leo	Itme	Izo	1	2
Galleta	HIJA	5-20	5-20	---	5-10	5-10
Indian ricegrass	ORHY	5-10	5-20	5-10	5-20	5-20
Dropseed	SPORO	5-15	---	---	---	---
Needlegrass	STIPA	2-5	---	---	---	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	2-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-7	5-10	2-6	5-10	5-10
Native annual forbs	AAFF	2-4	1-5	1-5	2-5	2-5
Fourwing saltbush	ATCA2	10-15	---	5-15	---	---
Winterfat	EULA5	5-20	---	---	---	---
Bud sagebrush	ARSP5	5-10	5-15	---	5-10	5-10
Spiny hopsage	GRSP	2-8	10-20	---	---	---
Anderson wolfberry	LYAN	1-5	5-15	---	---	---
Fremont dalea	DAFR	---	2-10	---	---	---
Nevada dalea	DAPO2	---	2-10	---	---	---
Cooper wolfberry	LYCO2	---	2-5	2-5	---	---
Nevada ephedra	EPNE	---	2-5	2-5	5-10	5-10
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Bailey greasewood	SAVEB	---	---	2-10	5-15	5-15
Spiny menodora	MESP2	---	---	---	10-30	10-30
Shadscale	ATCO	---	---	---	5-15	5-15
Other shrubs	SSSS	10-25	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	0-2	---	---	---
Site symbol		029X046N	029X016N	029X041N	029X036N	029X036N
Potential production (lb/acre):						
Favorable years		450	400	500	400	400
Normal years		350	300	300	300	300
Unfavorable years		175	200	100	100	100

127—Leo-Unsel-Belcher association

Map Unit Setting

Position on landscape: Fan skirts, fan piedmonts, alluvial flats
Elevation: 4,800 to 5,700 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Leo gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—35 percent
Belcher gravelly sand, 0 to 4 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Roic very gravelly fine sandy loam, dry, 2 to 8 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 2: Izo gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Oricto very gravelly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—4 percent

Leo Soil

Position on landscape: Inset fans, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 4 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 20); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6

Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belcher Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium over lake sediment
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, fourwing saltbush, shadscale
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—pediments; distinctive present vegetation—shadscale, Cooper wolfberry
Inclusion 2: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 3: Position on landscape—concave fan piedmont remnants; distinctive present vegetation—shadscale, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 17)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Moderate—depth to rock, cemented pan
Roadfill: Poor—cemented pan, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Leo soil—VIIc, nonirrigated; Unsel soil—VIIc, nonirrigated; Belcher soil—VIIs, nonirrigated
Site symbol: Leo soil—029X046N; Unsel soil—029X017N; Belcher soil—029X046N

TABLE 17.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Leo	Unsel	Belcher	1	2	3
Galleta	HIJA	5-20	10-25	5-20	---	---	---
Indian ricegrass	ORHY	5-10	5-10	5-10	2-5	5-10	1-10
Dropseed	SPORO	5-15	---	5-15	---	---	---
Needlegrass	STIPA	2-5	2-5	2-5	---	---	---
Bottlebrush squirreltail	SIHY	---	2-5	---	1-2	---	---
King desertgrass	BLKI	---	---	---	1-2	---	1-2
Other perennial grasses	PPGG	5-10	5-15	5-10	1-5	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	5-7	4-10	5-7	2-5	2-6	5-10
Native annual forbs	AAFF	2-4	1-5	2-4	1-5	1-5	2-5
Fourwing saltbush	ATCA2	10-15	---	10-15	---	5-15	---
Winterfat	EULA5	5-20	5-10	5-20	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	2-5	---	---
Spiny hopsage	GRSP	2-8	---	2-8	---	---	---
Anderson wolfberry	LYAN	1-5	---	1-5	---	---	---
Shadscale	ATCO	---	10-25	---	40-60	---	20-40
Bailey greasewood	SAVEB	---	5-10	---	10-15	2-10	10-15
Nevada ephedra	EPNE	---	1-5	---	---	2-5	---
Nevada dalea	DAPO2	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	2-5	5-15
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Other shrubs	SSSS	10-25	10-20	10-25	5-15	10-20	5-15
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		029X046N	029X017N	029X046N	029X033N	029X041N	029X032N
Potential production (lb/acre):							
Favorable years		450	350	450	100	500	150
Normal years		350	250	350	50	300	100
Unfavorable years		175	100	175	25	100	50

128—Leo-Stonell association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,100 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—55 percent
Stonell very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Typic Torriorthents, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Oricto very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—4 percent

Leo Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Galleta, Indian ricegrass, fourwing saltbush
Typical profile:
0 to 4 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stonell Soil

Position on landscape: Erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, white bursage
Inclusion 2: Position on landscape—fan skirts at the lower edge of fan piedmonts; distinctive present vegetation—Cooper wolfberry, shadscale, Bailey greasewood
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 18)

Elements of Wildlife Habitat

Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Leo soil—VIIs, nonirrigated; Stonell soil—VIIs, nonirrigated
Site symbol: Leo soil—029X046N; Stonell soil—29X017N

TABLE 18.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Leo	Stonell	1	2	3
Galleta	HIJA	5-20	10-25	2-5	---	---
Indian ricegrass	ORHY	5-10	5-10	2-5	10-20	1-10
Dropseed	SPORO	5-15	---	---	---	---
Needlegrass	STIPA	2-5	2-5	---	---	---
Bottlebrush squirreltail	SIHY	---	2-5	---	5-10	---
Fluffgrass	TRPU2	---	---	1-2	---	---
King desertgrass	BLKI	---	---	---	---	1-2
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-3	---	1-5
Perennial forbs	PPFF	5-7	4-10	1-5	3-7	5-10
Native annual forbs	AAFF	2-4	1-5	1-3	2-5	2-5
Fourwing saltbush	ATCA2	10-15	---	---	---	---
Winterfat	EULA5	5-20	5-10	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	---	---	---
Spiny hopsage	GRSP	2-8	---	---	---	---
Anderson wolfberry	LYAN	1-5	---	---	---	---
Shadscale	ATCO	---	10-25	20-40	10-20	20-40
Bailey greasewood	SAVEB	---	5-10	10-20	5-10	10-15
Nevada ephedra	EPNE	---	1-5	---	---	---
White bursage	FRDU	---	---	10-20	---	---
Cooper wolfberry	LYCO2	---	---	5-10	5-20	5-15
Other shrubs	SSSS	10-25	10-20	10-20	5-15	5-15
Joshua-tree	YUBR	---	1-2	---	---	---
Site symbol		029X046N	029X017N	029X039N	027X043N	029X032N
Potential production (lb/acre):						
Favorable years		450	350	150	400	150
Normal years		350	250	100	200	100
Unfavorable years		175	100	50	100	50

130—Belcher-Timper-Noyson association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Belcher gravelly sand, 0 to 4 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—40 percent
Timper gravelly sandy loam, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—25 percent
Noyson gravelly sand, 0 to 4 percent slopes (Entic Durorthids - coarse-loamy, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Yomba gravelly sand, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Kawich fine sand, 4 to 5 percent slopes (Typic Torripsamments - mixed, mesic)—5 percent
Inclusion 3: Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Belcher Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium over lake sediment
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, shadscale, black greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Timper Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, Indian ricegrass, galleta
Typical profile:
0 to 3 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
3 to 14 inches—sandy loam, gravelly fine sandy loam; 0 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-1, A-2
14 to 24 inches—cemented
24 to 60 inches or more—stratified loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 40 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM, SM, SP-SM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Noyson Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM; estimated AASHTO classification - A-1
3 to 28 inches—stratified sandy loam to gravelly sand; 0 to 5 percent cobbles and stones and 10 to 40 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
28 to 45 inches—cemented
Range in depth to cemented layer: 20 to 36 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—2; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—dunes superimposed over alluvial flats; distinctive present vegetation—black greasewood
Inclusion 3: Position on landscape—lower margin of fan skirts; distinctive present vegetation—dalea, littleleaf horsebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 19)

Elements of Wildlife Habitat

Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Timper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Noyson soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Moderate—depth to rock, cemented pan
Roadfill: Poor—cemented pan, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Timper Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Moderate—thin layer
(Noyson Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Fair—thin layer
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Belcher soil—VIIs, nonirrigated; Timper soil—VIIs, nonirrigated; Noyson soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Belcher soil—029X046N; Timper soil—029X017N; Noyson soil—029X017N

TABLE 19.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Belcher	Timper	Noyson	1	2	3
Galleta	HIJA	5-20	10-25	10-25	10-25	---	5-20
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	10-20	5-10
Dropseed	SPORO	5-15	---	---	---	---	5-15
Needlegrass	STIPA	2-5	2-5	2-5	2-5	5-10	2-5
Bottlebrush squirreltail	SIHY	---	2-5	2-5	2-5	---	---
Other perennial grasses	PPGG	5-10	5-15	5-15	5-15	2-5	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-3	1-5
Perennial forbs	PPFF	5-7	4-10	4-10	4-10	2-5	5-7
Native annual forbs	AAFF	2-4	1-5	1-5	1-5	2-5	2-4
Fourwing saltbush	ATCA2	10-15	---	---	---	---	10-15
Winterfat	EULA5	5-20	5-10	5-10	5-10	---	5-20
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	---	5-10
Spiny hopsage	GRSP	2-8	---	---	---	---	2-8
Anderson wolfberry	LYAN	1-5	---	---	---	---	1-5
Shadscale	ATCO	---	10-25	10-25	10-25	---	---
Bailey greasewood	SAVEB	---	5-10	5-10	5-10	---	---
Nevada ephedra	EPNE	---	1-5	1-5	1-5	---	---
Black greasewood	SAVE4	---	---	---	---	10-40	---
Other shrubs	SSSS	10-25	10-20	10-20	10-20	5-20	10-25
Joshua-tree	YUBR	---	1-2	1-2	1-2	---	---
Site symbol		O29XO46N	O29XO17N	O29XO17N	O29XO17N	O27XO16N	O29XO46N
Potential production (lb/acre):							
Favorable years		450	350	350	350	300	450
Normal years		350	250	250	250	200	350
Unfavorable years		175	100	100	100	50	175

131—Belcher-Playas-Yomba association

Map Unit Setting

Position on landscape: Basin floors, alluvial flats
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Belcher gravelly sand, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—45 percent
Playas—20 percent
Yomba gravelly fine sandy loam, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Youngston silt loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—8 percent
Inclusion 2: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—7 percent

Belcher Soil

Position on landscape: Alluvial flats
Parent material: Kind—alluvium; source—lake sediment
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, shadscale, black greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways and flood plains on alluvial flats; distinctive present vegetation—black greasewood, rubber rabbitbrush
Inclusion 2: Position on landscape—dunes on alluvial flats; distinctive present vegetation—black greasewood, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 20)

Elements of Wildlife Habitat

Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Moderate—depth to rock, cemented pan
Roadfill: Poor—depth to rock, cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Belcher soil—VIIs, nonirrigated; Playas; VIIIw, Yomba soil—VIIs, nonirrigated
Site symbol: Belcher soil—029X046N; Yomba soil—029X017N

TABLE 20.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Belcher	Playas	Yomba	1	2
Galleta	HIJA	5-20	---	10-25	---	---
Indian ricegrass	ORHY	5-10	---	5-10	---	10-20
Dropseed	SPORO	5-15	---	---	---	---
Needlegrass	STIPA	2-5	---	2-5	---	5-10
Bottlebrush squirreltail	SIHY	---	---	2-5	---	---
Alkali sacaton	SPAI	---	---	---	15-30	---
Inland saltgrass	DIST	---	---	---	5-15	---
Baltic rush	JUBA	---	---	---	5-10	---
Basin wildrye	ELCI2	---	---	---	5-10	---
Western wheatgrass	AGSM	---	---	---	1-5	---
Other perennial grasses	PPGG	5-10	---	5-15	8-20	2-5
Native annual grasses	AAGG	1-5	---	1-5	1-5	1-3
Perennial forbs	PPFF	5-7	---	4-10	2-8	2-5
Native annual forbs	AAFF	2-4	---	1-5	1-5	2-5
Fourwing saltbush	ATCA2	10-15	---	---	---	---
Winterfat	EULA5	5-20	---	5-10	---	---
Bud sagebrush	ARSP5	5-10	---	5-10	---	---
Spiny hopsage	GRSP	2-8	---	---	---	---
Anderson wolfberry	LYAN	1-5	---	---	---	---
Shadscale	ATCO	---	---	10-25	---	---
Bailey greasewood	SAVEB	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	1-5	---	---
Torrey quailbrush	ATTO	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	5-10	---
Basin big sagebrush	ARTRT*	---	---	---	1-5	---
Black greasewood	SAVE4	---	---	---	1-5	10-40
Other shrubs	SSSS	10-25	---	10-20	5-15	5-20
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		029X046N	---	029X017N	029X004N	027X016N
Potential production (lb/acre):						
Favorable years		450	---	350	2,000	300
Normal years		350	---	250	1,400	200
Unfavorable years		175	---	100	600	50

140—Stumble loamy fine sand, 0 to 4 percent slopes

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Stumble loamy fine sand, 0 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—90 percent
Contrasting inclusion as follows—
Inclusion 1: Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent

Stumble Soil

Position on landscape: Sand sheets on fan skirts and alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, winterfat, Indian ricegrass
Typical profile:
0 to 4 inches—loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusion

Inclusion 1: Position on landscape—fan skirts, alluvial flats; distinctive present vegetation—dalea, littleleaf horsebrush, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 21)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: IIIs, irrigated, and VIIs, nonirrigated
Site symbol: 029X012N

TABLE 21.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions	
		Component name	Inclusion number--
		Stumble	1
Indian ricegrass	ORHY	20-30	5-10
Dropseed	SPORO	5-25	5-15
Galleta	HIJA	2-5	5-20
Needlegrass	STIPA	2-5	2-5
Other perennial grasses	PPGG	5-15	5-10
Native annual grasses	AAGG	2-5	1-5
Perennial forbs	PPFF	5-10	5-7
Native annual forbs	AAFF	2-5	2-4
Fourwing saltbush	ATCA2	15-25	10-15
Winterfat	EULA5	5-20	5-20
Bud sagebrush	ARSP5	5-10	5-10
Spiny hopsage	GRSP	1-5	2-8
Anderson wolfberry	LYAN	---	1-5
Other shrubs	SSSS	10-20	10-25
Site symbol		O29XO12N	O29XO46N
Potential production (lb/acre):			
Favorable years		500	450
Normal years		350	350
Unfavorable years		200	175

141—Stumble-Belcher-Izo association

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Stumble loamy sand, 0 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—40 percent
Belcher gravelly sand, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—25 percent
Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Youngston silt loam, 0 to 4 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—8 percent
Inclusion 2: Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent

Stumble Soil

Position on landscape: Sand sheets on fan skirts and alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, winterfat, Indian ricegrass
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belcher Soil

Position on landscape: Alluvial flats
Parent material: Kind—alluvium; source—lake sediment
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, shadscale, black greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways

Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, spiny hopsage, rubber rabbitbrush, Indian ricegrass
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans at upper margins of fan skirts and drainageways; distinctive present vegetation—black greasewood, rubber rabbitbrush
Inclusion 2: Position on landscape—inset fans at upper margins of fan skirts and fan skirts; distinctive present vegetation—horsebrush, dalea, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 22)

Elements of Wildlife Habitat

Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Moderate—depth to rock, cemented pan
Roadfill: Poor—cemented pan, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Belcher soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Stumble soil—029X012N; Belcher soil—029X046N; Izo soil—029X041N

TABLE 22.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Stumble	Belcher	Izo	1	2
Indian ricegrass	ORHY	20-30	5-10	5-10	---	5-10
Dropseed	SPORO	5-25	5-15	---	---	5-15
Galleta	HIJA	2-5	5-20	---	---	5-20
Needlegrass	STIPA	2-5	2-5	---	---	2-5
Alkali sacaton	SPAI	---	---	---	15-30	---
Inland saltgrass	DIST	---	---	---	5-15	---
Baltic rush	JUBA	---	---	---	5-10	---
Basin wildrye	ELCI2	---	---	---	5-10	---
Western wheatgrass	AGSM	---	---	---	1-5	---
Other perennial grasses	PPGG	5-15	5-10	5-10	8-20	5-10
Native annual grasses	AAGG	2-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-7	2-6	2-8	5-7
Native annual forbs	AAFF	2-5	2-4	1-5	1-5	2-4
Fourwing saltbush	ATCA2	15-25	10-15	5-15	---	10-15
Winterfat	EULA5	5-20	5-20	---	---	5-20
Bud sagebrush	ARSP5	5-10	5-10	---	---	5-10
Spiny hopsage	GRSP	1-5	2-8	---	---	2-8
Anderson wolfberry	LYAN	---	1-5	---	---	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	5-10	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Bailey greasewood	SAVEB	---	---	2-10	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Torrey quailbrush	ATTO	---	---	---	5-10	---
Basin big sagebrush	ARTRT*	---	---	---	1-5	---
Black greasewood	SAVE4	---	---	---	1-5	---
Other shrubs	SSSS	10-20	10-25	10-20	5-15	10-25
Site symbol		O29XO12N	O29XO46N	O29XO41N	O29XOO4N	O29XO46N
Potential production (lb/acre):						
Favorable years		500	450	500	2,000	450
Normal years		350	350	300	1,400	350
Unfavorable years		200	175	100	600	175

142—Stumble-Leo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,600 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Stumble loamy sand, 0 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—45 percent
Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—45 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Stumble Soil

Position on landscape: Sand sheets on fan piedmonts
Parent material: Sandy alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Indian ricegrass, littleleaf horsebrush, dalea, fourwing saltbush
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Leo Soil

Position on landscape: Fan piedmonts, fan aprons
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 4 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—higher fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 23)

Elements of Wildlife Habitat

Suitability of Stumble soil for named elements:

Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Leo soil for named elements:

Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 23.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Stumble	Leo	1	2
Indian ricegrass	ORHY	20-30	5-10	5-10	5-10
Dropseed	SPORO	5-25	5-15	---	---
Galleta	HIJA	2-5	5-20	10-25	---
Needlegrass	STIPA	2-5	2-5	2-5	---
Bottlebrush squirreltail	SIHY	---	---	2-5	---
Other perennial grasses	PPGG	5-15	5-10	5-15	5-10
Native annual grasses	AAGG	2-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-7	4-10	2-6
Native annual forbs	AAFF	2-5	2-4	1-5	1-5
Fourwing saltbush	ATCA2	15-25	10-15	---	5-15
Winterfat	EULA5	5-20	5-20	5-10	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---
Spiny hopsage	GRSP	1-5	2-8	---	---
Anderson wolfberry	LYAN	---	1-5	---	---
Shadscale	ATCO	---	---	10-25	---
Bailey greasewood	SAVEB	---	---	5-10	2-10
Nevada ephedra	EPNE	---	---	1-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	10-20	10-25	10-20	10-20
Joshua-tree	YUBR	---	---	1-2	---
Site symbol		029X012N	029X046N	029X017N	029X041N
Potential production (lb/acre):					
Favorable years		500	450	350	500
Normal years		350	350	250	300
Unfavorable years		200	175	100	100

Ratings for Selected Uses

(Stumble Soil)
Suitability of limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Leo Soil)
Suitability of limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Leo soil—VIIs, nonirrigated
Site symbol: Stumble soil—029X012N; Leo soil—029X046N

144—Stumble-Wardenot-Unsel association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts, alluvial flats
Elevation: 4,900 to 5,300 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Stumble loamy sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—35 percent
Wardenot gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Unsel very gravelly fine sandy loam, 2 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Durorthidic Torriorthents, 2 to 8 percent slopes (Durorthidic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent
Inclusion 2: Izo gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Stumble Soil

Position on landscape: Sand sheets on alluvial flats and fan skirts
Parent material: Sandy alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, Indian ricegrass, dalea
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 7 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood
Typical profile:
0 to 7 inches—very gravelly fine sandy loam; 15 to 30 percent cobbles and stones and 40 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC, GM-GC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmonts; distinctive present vegetation—Indian ricegrass, bud sagebrush, shadscale
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 24)

Elements of Wildlife Habitat

Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, too sandy, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 24.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Stumble	Wardenot	Unsel	1	2
Indian ricegrass	ORHY	20-30	5-10	5-10	20-30	5-10
Dropseed	SPORO	5-25	---	---	5-25	---
Galleta	HIJA	2-5	10-25	10-25	2-5	---
Needlegrass	STIPA	2-5	2-5	2-5	2-5	---
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-15	5-10
Native annual grasses	AAGG	2-5	1-5	1-5	2-5	2-4
Perennial forbs	PPFF	5-10	4-10	4-10	5-10	2-6
Native annual forbs	AAFF	2-5	1-5	1-5	2-5	1-5
Fourwing saltbush	ATCA2	15-25	---	---	15-25	5-15
Winterfat	EULA5	5-20	5-10	5-10	5-20	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	---
Spiny hopsage	GRSP	1-5	---	---	1-5	---
Shadscale	ATCO	---	10-25	10-25	---	---
Bailey greasewood	SAVEB	---	5-10	5-10	---	2-10
Nevada ephedra	EPNE	---	1-5	1-5	---	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	1-2	---	---
Site symbol		029X012N	029X017N	029X017N	029X012N	029X041N
Potential production (lb/acre):						
Favorable years		500	350	350	500	500
Normal years		350	250	250	350	300
Unfavorable years		200	100	100	200	100

Interpretive Groups

Capability classification: Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Unsel soil—VIIs, nonirrigated

Site symbol: Stumble soil—029X012N; Wardenot soil—029X017N; Unsel soil—029X017N

145—Stumble-Luning association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 4,600 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Stumble loamy sand, 2 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—60 percent
Luning gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Itme very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent

Stumble Soil

Position on landscape: Sand sheets on fan piedmonts and fan skirts
Parent material: Sandy alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Fourwing saltbrush, winterfat, Indian ricegrass, bud sagebrush
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Luning Soil

Position on landscape: Inset fans, fan aprons, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 60 inches or more—stratified sandy loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora, bud sagebrush
Inclusion 2: Position on landscape—upper parts of inset fans and fan aprons; distinctive present vegetation—shadscale, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 25)

Elements of Wildlife Habitat

Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor

TABLE 25.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Stumble	Luning	1	2
Indian ricegrass	ORHY	20-30	30-50	5-20	5-20
Dropseed	SPORO	5-25	---	---	---
Galleta	HIJA	2-5	---	5-10	5-20
Needlegrass	STIPA	2-5	---	---	---
Other perennial grasses	PPGG	5-15	2-5	5-10	5-15
Native annual grasses	AAGG	2-5	---	1-5	2-5
Globemallow	SPHAE	---	1-3	---	---
Birdcage eveningprimrose	OEDE2	---	1-3	---	---
Other perennial forbs	PPFF	5-10	2-5	5-10	5-10
Native annual forbs	AAFF	2-5	---	2-5	1-5
Fourwing saltbush	ATCA2	15-25	15-30	---	---
Winterfat	EULA5	5-20	---	---	---
Bud sagebrush	ARSP5	5-10	---	5-10	5-15
Spiny hopsage	GRSP	1-5	---	---	10-20
Cooper wolfberry	LYCO2	---	10-20	---	2-5
Nevada dalea	DAPO2	---	5-10	---	2-10
Spiny menodora	MESP2	---	---	10-30	---
Bailey greasewood	SAVEB	---	---	5-15	---
Shadscale	ATCO	---	---	5-15	---
Nevada ephedra	EPNE	---	---	5-10	2-5
Anderson wolfberry	LYAN	---	---	---	5-15
Fremont dalea	DAFR	---	---	---	2-10
Other shrubs	SSSS	10-20	2-15	10-20	10-20
Joshua-tree	YUBR	---	---	---	0-2
Site symbol		029X012N	027X060N	029X036N	029X016N
Potential production (lb/acre):					
Favorable years		500	400	400	400
Normal years		350	200	300	300
Unfavorable years		200	100	100	200

Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping
(Luning Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage

Interpretive Groups

Capability classification: Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Luning soil—VIIs, nonirrigated
Site symbol: Stumble soil—029X012N; Luning soil—027X060N

151—Kawich-Playas association

Map Unit Setting

Position on landscape: Basin floors, alluvial flats
Elevation: 4,100 to 4,700 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—45 percent
Playas—40 percent
Contrasting inclusions as follows—
Inclusion 1: Rustigate loamy sand, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—6 percent
Inclusion 2: Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaquepts - fine-silty, mixed (calcareous), mesic)—5 percent
Inclusion 3: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—4 percent

Kawich Soil

Position on landscape: Dunes and dune sheets on playas and alluvial flats
Parent material: Eolian material
Slope features: Length—short; shape—convex
Dominant present vegetation: Black greasewood, rubber rabbitbrush, Indian ricegrass
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—flood plains, alluvial flats; distinctive present vegetation—saltgrass
Inclusion 2: Position on landscape—flood plains, alluvial flats; distinctive present vegetation—saltgrass
Inclusion 3: Position on landscape—alluvial flats and fan skirts adjacent to basin floors; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 26)

Elements of Wildlife Habitat

Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage

Interpretive Groups

Capability classification: Kawich soil—IVs, irrigated, and VIIs, nonirrigated; Playas—VIIIw
Site symbol: Kawich soil—027X016N

TABLE 26.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Kawich	Playas	1	2	3
Indian ricegrass	ORHY	10-20	---	---	---	---
Needlegrass	STIPA	5-10	---	---	---	---
Alkali sacaton	SPAI	---	---	15-30	15-40	---
Inland saltgrass	DIST	---	---	5-15	10-15	5-10
Baltic rush	JUBA	---	---	5-10	5-15	---
Basin wildrye	ELCI2	---	---	5-10	2-5	---
Western wheatgrass	AGSM	---	---	1-5	---	---
Giantreed	ARDO4	---	---	---	2-5	---
Alkali cordgrass	SPGR	---	---	---	2-5	---
Other perennial grasses	PPGG	2-5	---	8-20	10-20	5-15
Native annual grasses	AAGG	1-3	---	1-5	2-6	---
Perennial forbs	PPFF	2-5	---	2-8	2-6	3-7
Native annual forbs	AAFF	2-5	---	1-5	1-5	---
Black greasewood	SAVE4	10-40	---	1-5	---	40-60
Torrey quailbrush	ATTO	---	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	5-10	---	---
Basin big sagebrush	ARTRT*	---	---	1-5	---	---
Shadscale	ATCO	---	---	---	---	2-10
Seepweed	SUAED	---	---	---	---	2-5
Other shrubs	SSSS	5-20	---	5-15	2-10	5-15
Site symbol		O27X016N	---	O29X004N	O29X002N	O27X025N
Potential production (lb/acre):						
Favorable years		300	---	2,000	3,300	400
Normal years		200	---	1,400	2,200	200
Unfavorable years		50	---	600	1,000	50

160—Yomba-Playas-Youngston association

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Yomba gravelly sand, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—40 percent
Playas—25 percent
Youngston silt loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Belcher gravelly sand, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—6 percent
Inclusion 2: Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—4 percent

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, littleleaf horsebrush, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Youngston Soil

Position on landscape: Narrow flood plains within alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Rubber rabbitbrush, basin wildrye, shadscale
Typical profile:
0 to 3 inches—silt loam; subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
3 to 60 inches or more—stratified very fine sandy loam to silty clay loam; massive; hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL; estimated AASHTO classification - A-6
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—brief; months—February to August

Permeability: Moderately slow
Available water capacity: 11 to 12 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—dalea, bud sagebrush, Indian ricegrass
Inclusion 2: Position on landscape—alluvial flats; distinctive present vegetation—greasewood, shadscale
Inclusion 3: Position on landscape—alluvial flats, lake plains; distinctive present vegetation—black greasewood, seepweed

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 27)

Elements of Wildlife Habitat

Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Youngston soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Youngston Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, excess salt, too crusty
Shallow excavations: Moderate—flooding
Local roads and streets: Severe—flooding, low strength
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Moderate—excess salt

Interpretive Groups

Capability classification: Yomba soil—VIIs, nonirrigated; Playas—VIIIw; Youngston soil—IIw, irrigated, and VIIw, nonirrigated
Site symbol: Yomba soil—029X017N; Youngston soil—029X004N

TABLE 27.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Yomba	Playas	Youngston	1	2	3
Galleta	HIJA	10-25	---	---	5-20	---	---
Indian ricegrass	ORHY	5-10	---	---	5-10	---	---
Bottlebrush squirreltail	SIHY	2-5	---	---	---	---	---
Needlegrass	STIPA	2-5	---	---	2-5	---	---
Alkali sacaton	SPAI	---	---	15-30	---	10-15	---
Inland saltgrass	DIST	---	---	5-15	---	1-5	5-10
Baltic rush	JUBA	---	---	5-10	---	---	---
Basin wildrye	ELCI2	---	---	5-10	---	5-10	---
Western wheatgrass	AGSM	---	---	1-5	---	---	---
Dropseed	SPORO	---	---	---	5-15	---	---
Other perennial grasses	PPGG	5-15	---	8-20	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	---	1-5	1-5	2-5	---
Perennial forbs	PPFF	4-10	---	2-8	5-7	5-10	3-7
Native annual forbs	AAFF	1-5	---	1-5	2-4	2-5	---
Shadscale	ATCO	10-25	---	---	---	15-30	2-10
Bailey greasewood	SAVEB	5-10	---	---	---	---	---
Bud sagebrush	ARSP5	5-10	---	---	5-10	---	---
Winterfat	EULA5	5-10	---	---	5-20	---	---
Nevada ephedra	EPNE	1-5	---	---	---	---	---
Torrey quailbrush	ATTO	---	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	5-10	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	1-5	---	2-5	---
Black greasewood	SAVE4	---	---	1-5	---	5-15	40-60
Fourwing saltbush	ATCA2	---	---	---	10-15	2-5	---
Spiny hopsage	GRSP	---	---	---	2-8	---	---
Anderson wolfberry	LYAN	---	---	---	1-5	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	5-10	---
Seepweed	SUAED	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	---	5-15	10-25	10-20	5-15
Joshua-tree	YUBR	1-2	---	---	---	---	---
Site symbol		029X017N	---	029X004N	029X046N	029X024N	027X025N
Potential production (lb/acre):							
Favorable years		350	---	2,000	450	800	400
Normal years		250	---	1,400	350	35	200
Unfavorable years		100	---	600	175	150	50

161—Yomba-Wardenot-Izo association

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Yomba gravelly sand, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—45 percent
Wardenot gravelly fine sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly loamy sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Zaba very gravelly loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Duric Haplargids very gravelly loamy sand, 2 to 4 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry, Indian ricegrass
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2, A-4
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches

Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways of fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, rubber rabbitbrush, spiny hopsage, Indian ricegrass
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan skirts; distinctive present vegetation—shadscale, Bailey greasewood, Cooper wolfberry
Inclusion 2: Position on landscape—beach terraces; distinctive present vegetation—black greasewood
Inclusion 3: Position on landscape—fan piedmonts, fan skirts; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 28)

Elements of Wildlife Habitat

Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 28.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Yomba	Wardenot	Izo	1	2	3
Galleta	HIJA	10-25	10-25	---	---	---	10-25
Indian ricegrass	ORHY	5-10	5-10	5-10	10-20	---	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	5-10	---	2-5
Needlegrass	STIPA	2-5	2-5	---	---	---	2-5
Inland saltgrass	DIST	---	---	---	---	5-10	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	---	---	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	3-7	3-7	4-10
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	---	1-5
Shadscale	ATCO	10-25	10-25	---	10-20	2-10	10-25
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	---	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	---	---	5-10
Winterfat	EULA5	5-10	5-10	---	---	---	5-10
Nevada ephedra	EPNE	1-5	1-5	2-5	---	---	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	5-20	---	---
Black greasewood	SAVE4	---	---	---	---	40-60	---
Seepweed	SUAED	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	5-15	5-15	10-20
Joshua-tree	YUBR	1-2	1-2	---	---	---	1-2
Site symbol		029X017N	029X017N	029X041N	027X043N	027X025N	029X017N
Potential production (lb/acre):							
Favorable years		350	350	500	400	400	350
Normal years		250	250	300	200	200	250
Unfavorable years		100	100	100	100	50	100

Interpretive Groups

Capability classification: Yomba soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Yomba soil—029X017N; Wardenot soil—029X017N; Izo soil—029X041N

162—Yomba-Playas-Youngston association, alkali

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—40 percent
Playas—25 percent
Youngston silt loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—8 percent
Inclusion 2: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—5 percent
Inclusion 3: Yomba gravelly sand, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—2 percent

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood, Cooper wolfberry, fourwing saltbush
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth or slightly concave
Dominant present vegetation: Barren

Youngston Soil

Position on landscape: Narrow flood plains of alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Rubber rabbitbrush, basin wildrye, shadscale
Typical profile:
0 to 3 inches—silt loam; subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
3 to 60 inches or more—stratified very fine sandy loam to silty clay loam; massive; hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL; estimated AASHTO classification - A-6
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—brief; months—February to August
Permeability: Moderately slow

Available water capacity: 11 to 12 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—black greasewood, seepweed
Inclusion 2: Position on landscape—sand dunes on alluvial flats; distinctive present vegetation—black greasewood
Inclusion 3: Position on landscape—alluvial flats, adjacent areas of fan skirts; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 29)

Elements of Wildlife Habitat

Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of the Youngston soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Youngston Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, excess salt, too crusty
Shallow excavations: Moderate—flooding
Local roads and streets: Severe—flooding, low strength
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Moderate—excess salt

Interpretive Groups

Capability classification: Yomba soil—VIIs, nonirrigated; Playas—VIIIw; Youngston soil—IIw, irrigated, and VIIw, nonirrigated
Site symbol: Yomba soil—029X024N; Youngston soil—029X004N

TABLE 29.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Yomba	Playas	Youngston	1	2	3
Alkali sacaton	SPAI	10-15	---	15-30	---	---	---
Basin wildrye	ELCI2	5-10	---	5-10	---	---	---
Inland saltgrass	DIST	1-5	---	5-15	5-10	---	---
Baltic rush	JUBA	---	---	5-10	---	---	---
Western wheatgrass	AGSM	---	---	1-5	---	---	---
Indian ricegrass	ORHY	---	---	---	---	10-20	5-10
Needlegrass	STIPA	---	---	---	---	5-10	2-5
Galleta	HIJA	---	---	---	---	---	10-25
Bottlebrush squirreltail	SIHY	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-15	---	8-20	5-15	2-5	5-15
Native annual grasses	AAGG	2-5	---	1-5	---	1-3	1-5
Perennial forbs	PPFF	5-10	---	2-8	3-7	2-5	4-10
Native annual forbs	AAFF	2-5	---	1-5	---	2-5	1-5
Shadscale	ATCO	15-30	---	---	2-10	---	10-25
Black greasewood	SAVE4	5-15	---	1-5	40-60	10-40	---
Cooper wolfberry	LYCO2	5-10	---	---	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	5-10	---	---	---
Fourwing saltbush	ATCA2	2-5	---	---	---	---	---
Basin big sagebrush	ARTRT*	2-5	---	1-5	---	---	---
Torrey quailbrush	ATTO	---	---	5-10	---	---	---
Seepweed	SUAED	---	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	5-10
Bud sagebrush	ARSP5	---	---	---	---	---	5-10
Winterfat	EULA5	---	---	---	---	---	5-10
Nevada ephedra	EPNE	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	---	5-15	5-15	5-20	10-20
Joshua-tree	YUBR	---	---	---	---	---	1-2
Site symbol		029X024N	---	029X004N	027X025N	027X016N	029X017N
Potential production (lb/acre):							
Favorable years		800	---	2,000	400	300	350
Normal years		350	---	1,400	200	200	250
Unfavorable years		150	---	600	50	50	100

163—Yomba-Playas-Kawich association

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,500 to 4,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—30 percent
Playas—30 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Youngston silt loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—5 percent
Inclusion 2: Belcher gravelly sand, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—4 percent
Inclusion 3: Izo gravelly sand, 0 to 2 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Kawich Soil

Position on landscape: Sand dunes and sand sheets on playas and alluvial flats
Parent material: Eolian material
Slope features: Length—short; shape—convex
Dominant present vegetation: Black greasewood, rubber rabbitbrush, Indian ricegrass
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow

Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, flood plains; distinctive present vegetation—rubber rabbitbrush
Inclusion 2: Position on landscape—fan skirts and toe slopes of fan piedmonts adjacent to alluvial flats; distinctive present vegetation—dalea, horsebrush, Indian ricegrass
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 30)

Elements of Wildlife Habitat

Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage

Interpretive Groups

Capability classification: Yomba soil—VIIs, nonirrigated; Playas—VIIIw; Kawich soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Yomba soil—029X024N; Kawich soil—027X016N

TABLE 30.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Yomba	Playas	Kawich	1	2	3
Alkali sacaton	SPAI	10-15	---	---	15-30	---	---
Basin wildrye	ELCI2	5-10	---	---	5-10	---	---
Inland saltgrass	DIST	1-5	---	---	5-15	---	---
Indian ricegrass	ORHY	---	---	10-20	---	5-10	5-10
Needlegrass	STIPA	---	---	5-10	---	2-5	---
Baltic rush	JUBA	---	---	---	5-10	---	---
Western wheatgrass	AGSM	---	---	---	1-5	---	---
Galleta	HIJA	---	---	---	---	5-10	---
Dropseed	SPORO	---	---	---	---	5-15	---
Other perennial grasses	PPGG	5-15	---	2-5	8-20	5-10	5-10
Native annual grasses	AAGG	2-5	---	1-3	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	---	2-5	2-8	5-7	2-6
Native annual forbs	AAFF	2-5	---	2-5	1-5	2-4	1-5
Shadscale	ATCO	15-30	---	---	---	---	---
Black greasewood	SAVE4	5-15	---	10-40	1-5	---	---
Cooper wolfberry	LYCO2	5-10	---	---	---	---	2-5
Anderson wolfberry	LYAN	5-10	---	---	---	1-5	---
Rubber rabbitbrush	CHNA2	2-5	---	---	5-10	---	10-25
Fourwing saltbush	ATCA2	2-5	---	---	---	10-15	5-15
Basin big sagebrush	ARTRT*	2-5	---	---	1-5	---	---
Torrey quailbrush	ATTO	---	---	---	5-10	---	---
Winterfat	EULA5	---	---	---	---	5-20	---
Bud sagebrush	ARSP5	---	---	---	---	5-10	---
Spiny hopsage	GRSP	---	---	---	---	2-8	---
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Bailey greasewood	SAVEB	---	---	---	---	---	2-10
Nevada ephedra	EPNE	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	---	5-20	5-15	10-25	10-20
Site symbol		029X024N	---	027X016N	029X004N	029X046N	029X041N
Potential production (lb/acre):							
Favorable years		800	---	300	2,000	450	500
Normal years		350	---	200	1,400	350	300
Unfavorable years		150	---	50	600	175	100

164—Yomba-Kawich association

Map Unit Setting

Position on landscape: Alluvial flats
Elevation: 4,750 to 4,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 120 days

Composition

Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—50 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Playas—8 percent
Inclusion 2: Youngston silt loam, 0 to 4 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—4 percent
Inclusion 3: Rustigate loamy sand, ponded, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—3 percent

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Kawich Soil

Position on landscape: Sand dunes and sand sheets on alluvial flats
Parent material: Eolian material
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black greasewood, littleleaf horsebrush
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—areas of basin floors adjacent to alluvial flats; distinctive present vegetation—barren
Inclusion 2: Position on landscape—flood plains, drainageways; distinctive present vegetation—basin wildrye, rabbitbrush
Inclusion 3: Position on landscape—lower part of alluvial flats; distinctive present vegetation—inland saltgrass, basin wildrye

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 31)

Elements of Wildlife Habitat

Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping

Interpretive Groups

Capability classification: Yomba soil—VIIs, nonirrigated; Kawich soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Yomba soil—029X024N; Kawich soil—027X016N

TABLE 31.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Yomba	Kawich	1	2	3
Alkali sacaton	SPAI	10-15	---	---	15-30	15-40
Basin wildrye	ELCI2	5-10	---	---	5-10	2-5
Inland saltgrass	DIST	1-5	---	---	5-15	10-15
Indian ricegrass	ORHY	---	10-20	---	---	---
Needlegrass	STIPA	---	5-10	---	---	---
Baltic rush	JUBA	---	---	---	5-10	5-15
Western wheatgrass	AGSM	---	---	---	1-5	---
Giantreed	ARDO4	---	---	---	---	2-5
Alkali cordgrass	SPGR	---	---	---	---	2-5
Other perennial grasses	PPGG	5-15	2-5	---	8-20	10-20
Native annual grasses	AAGG	2-5	1-3	---	1-5	2-6
Perennial forbs	PPFF	5-10	2-5	---	2-8	2-6
Native annual forbs	AAFF	2-5	2-5	---	1-5	1-5
Shadscale	ATCO	15-30	---	---	---	---
Black greasewood	SAVE4	5-15	10-40	---	1-5	---
Cooper wolfberry	LYCO2	5-10	---	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	---	5-10	---
Fourwing saltbush	ATCA2	2-5	---	---	---	---
Basin big sagebrush	ARTRT*	2-5	---	---	1-5	---
Torrey quailbush	ATTO	---	---	---	5-10	---
Other shrubs	SSSS	10-20	5-20	---	5-15	2-10
Site symbol		029X024N	027X016N	---	029X004N	029X002N
Potential production (lb/acre):						
Favorable years		800	300	---	2,000	3,300
Normal years		350	200	---	1,400	2,200
Unfavorable years		150	50	---	600	1,000

165—Yomba-Belcher association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts
Elevation: 5,100 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—45 percent
Belcher gravelly sand, 0 to 2 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—7 percent
Inclusion 2: Wardenot gravelly fine sandy loam, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent

Yomba Soil

Position on landscape: Fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belcher Soil

Position on landscape: Alluvial flats, fan skirts
Parent material: Kind—alluvium; source—lake sediment
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, galleta
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: D

Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lake plains adjacent to alluvial flats; distinctive present vegetation—black greasewood, seepweed
Inclusion 2: Position on landscape—fan remnants and fan aprons adjacent to inset fans; distinctive present vegetation—shadscale, bud sagebrush, Bailey greasewood
Inclusion 3: Position on landscape—sand dunes on alluvial flats and inset fans; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 32)

Elements of Wildlife Habitat

Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Moderate—depth to rock, cemented pan
Roadfill: Poor—cemented pan, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Yomba soil—VIIs, nonirrigated; Belcher soil—VIIs, nonirrigated
Site symbol: Yomba soil—029X024N; Belcher soil—029X046N

TABLE 32.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Yomba	Belcher	1	2	3
Alkali sacaton	SPAI	10-15	---	---	---	---
Basin wildrye	ELCI2	5-10	---	---	---	---
Inland saltgrass	DIST	1-5	---	---	5-10	---
Galleta	HIJA	---	5-20	10-25	---	---
Indian ricegrass	ORHY	---	5-10	5-10	---	10-20
Dropseed	SPORO	---	5-15	---	---	---
Needlegrass	STIPA	---	2-5	2-5	---	5-10
Bottlebrush squirreltail	SIHY	---	---	2-5	---	---
Other perennial grasses	PPGG	5-15	5-10	5-15	5-15	2-5
Native annual grasses	AAGG	2-5	1-5	1-5	---	1-3
Perennial forbs	PPFF	5-10	5-7	4-10	3-7	2-5
Native annual forbs	AAFF	2-5	2-4	1-5	---	2-5
Shadscale	ATCO	15-30	---	10-25	2-10	---
Black greasewood	SAVE4	5-15	---	---	40-60	10-40
Cooper wolfberry	LYCO2	5-10	---	---	---	---
Anderson wolfberry	LYAN	5-10	1-5	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	---	---	---
Fourwing saltbush	ATCA2	2-5	10-15	---	---	---
Basin big sagebrush	ARTRT*	2-5	---	---	---	---
Winterfat	EULA5	---	5-20	5-10	---	---
Bud sagebrush	ARSP5	---	5-10	5-10	---	---
Spiny hopsage	GRSP	---	2-8	---	---	---
Bailey greasewood	SAVEB	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	1-5	---	---
Seepweed	SUAED	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-25	10-20	5-15	5-20
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		029X024N	029X046N	029X017N	027X025N	027X016N
Potential production (lb/acre):						
Favorable years		800	450	350	400	300
Normal years		350	350	250	200	200
Unfavorable years		150	175	100	50	50

180—Youngston-Playas association

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,700 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Youngston silt loam, 0 to 2 percent slopes (Typic Torriorthents - fine-loamy, mixed (calcareous), mesic)—60 percent
Playas—25 percent
Contrasting inclusions as follows—
Inclusion 1: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—8 percent
Inclusion 2: Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—7 percent

Youngston Soil

Position on landscape: Flood plains on alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Rubber rabbitbrush, basin wildrye, shadscale
Typical profile:
0 to 3 inches—silt loam; 0 to 5 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
3 to 60 inches or more—stratified very fine sandy loam to silty clay loam; massive; hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL; estimated AASHTO classification - A-6
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—brief; months—February to August
Permeability: Moderately slow
Available water capacity: 11 to 12 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—sand dunes on adjacent alluvial flats; distinctive present vegetation—black greasewood, Indian ricegrass, fourwing saltbush
Inclusion 2: Position on landscape—adjacent alluvial flats; distinctive present vegetation—black greasewood, seepweed

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 33)

Elements of Wildlife Habitat

Suitability of Youngston soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Youngston Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, excess salt, too crusty
Shallow excavations: Moderate—flooding
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Moderate—excess salt

Interpretive Groups

Capability classification: Youngston soil—IIw, irrigated, and VIIw, nonirrigated; Playas—VIIIw
Site symbol: Youngston soil—029X004N

TABLE 33.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Youngston	Playas	1	2
Alkali sacaton	SPAI	15-30	---	---	10-15
Inland saltgrass	DIST	5-15	---	---	1-5
Baltic rush	JUBA	5-10	---	---	---
Basin wildrye	ELCI2	5-10	---	---	5-10
Western wheatgrass	AGSM	1-5	---	---	---
Indian ricegrass	ORHY	---	---	10-20	---
Needlegrass	STIPA	---	---	5-10	---
Other perennial grasses	PPGG	8-20	---	2-5	5-15
Native annual grasses	AAGG	1-5	---	1-3	2-5
Perennial forbs	PPFF	2-8	---	2-5	5-10
Native annual forbs	AAFF	1-5	---	2-5	2-5
Torrey quailbush	ATTO	5-10	---	---	---
Rubber rabbitbrush	CHNA2	5-10	---	---	2-5
Basin big sagebrush	ARTRT*	1-5	---	---	2-5
Black greasewood	SAVE4	1-5	---	10-40	5-15
Shadscale	ATCO	---	---	---	15-30
Cooper wolfberry	LYCO2	---	---	---	5-10
Anderson wolfberry	LYAN	---	---	---	5-10
Fourwing saltbush	ATCA2	---	---	---	2-5
Other shrubs	SSSS	5-15	---	5-20	10-20
Site symbol		O29XO04N	---	O27XO16N	O29XO24N
Potential production (lb/acre):					
Favorable years		2,000	---	300	800
Normal years		1,400	---	200	350
Unfavorable years		600	---	50	150

190—Terlco-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 54 degrees F
Frost-free season—about 135 days

Composition

Terlco very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—60 percent
Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Oricto very cobbly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—6 percent

Terlco Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2, A-4
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4

Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 34)

Elements of Wildlife Habitat

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Terlco Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium

(Wardenot Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Terlco soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Terlco soil—029X036N; Wardenot soil—029X017N

TABLE 34.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Terlco	Wardenot	1	2
Indian ricegrass	ORHY	5-20	5-10	5-10	1-10
Galleta	HIJA	5-10	10-25	---	---
Bottlebrush squirreltail	SIHY	---	2-5	---	---
Needlegrass	STIPA	---	2-5	---	---
King desertgrass	BLKI	---	---	---	1-2
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	4-10	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	1-5	2-5
Spiny menodora	MESP2	10-30	---	---	---
Bailey greasewood	SAVEB	5-15	5-10	2-10	10-15
Shadscale	ATCO	5-15	10-25	---	20-40
Bud sagebrush	ARSP5	5-10	5-10	---	---
Nevada ephedra	EPNE	5-10	1-5	2-5	---
Winterfat	EULA5	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	5-15	---
Burrobrush	HYMEN3	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	2-5	5-15
Other shrubs	SSSS	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	---	1-2	---	---
Site symbol		029X036N	029X017N	029X041N	029X032N
Potential production (lb/acre):					
Favorable years		400	350	500	150
Normal years		300	250	300	100
Unfavorable years		100	100	100	50

191—Terlco-Advokay-Downeyville association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments
Elevation: 5,500 to 6,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Terlco extremely stony sandy loam, 4 to 30 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—50 percent
Advokay gravelly coarse sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—20 percent
Downeyville very stony fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Unsel very gravelly fine sandy loam, 4 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—4 percent
Inclusion 3: Pintwater very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 4: Rock outcrop—2 percent

Terlco Soil

Position on landscape: Side slopes and shoulders of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Galleta, shadscale, spiny menodora
Typical profile:
0 to 2 inches—extremely stony sandy loam; 30 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 35 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, friable; very strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Advokay Soil

Position on landscape: Rock pediment remnants
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Downeyville Soil

Position on landscape: Summits and shoulders of rock pediment remnants
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass, galleta
Typical profile:
0 to 4 inches—very stony fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification-GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—narrow drainageways of fan piedmonts and rock pediments; distinctive present vegetation—Indian ricegrass, fourwing saltbush, shadscale
Inclusion 2: Position on landscape—side slopes of fan remnants; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 3: Position on landscape—crests and shoulders of rock pediment remnants; distinctive present vegetation—shadscale
Inclusion 4: Position on landscape—small peaks and ridges on rock pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 35)

Elements of Wildlife Habitat

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, large stones, excess salt
Shallow excavations: Severe—cutbanks cave, slope
Local roads and streets: Severe—slope
Roadfill: Fair—slope
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 35.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Terlco	Advokay	Downeyville	1	2	3	4
Indian ricegrass	ORHY	5-20	5-10	5-15	5-10	5-10	5-15	---
Galleta	HIJA	5-10	10-25	5-20	---	10-25	5-20	---
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	2-5	2-5	---
Needlegrass	STIPA	---	2-5	5-10	---	2-5	5-10	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5	---
Perennial forbs	PPFF	5-10	4-10	5-10	2-6	4-10	5-10	---
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	1-5	2-5	---
Spiny menodora	MESP2	10-30	---	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-10	5-15	2-10	5-10	5-15	---
Shadscale	ATCO	5-15	10-25	15-25	---	10-25	15-25	---
Bud sagebrush	ARSP5	5-10	5-10	2-5	---	5-10	2-5	---
Nevada ephedra	EPNE	5-10	1-5	2-5	2-5	1-5	2-5	---
Winterfat	EULA5	---	5-10	---	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20	---
Joshua-tree	YUBR	---	1-2	---	---	1-2	---	---
Site symbol		029X036N	029X017N	029X022N	029X041N	029X017N	029X022N	---
Potential production (lb/acre):								
Favorable years		400	350	300	500	350	300	---
Normal years		300	250	200	300	250	200	---
Unfavorable years		100	100	100	100	100	100	---

Embankments, dikes, and levees: Severe—thin layer

(Downeyville Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, large stones

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—depth to rock, slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Terlco soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated

Site symbol: Terlco soil—029X036N; Advokay soil—029X017N; Downeyville soil—029X022N

193—Terlco-Pintwater-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Terlco very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—40 percent
Pintwater very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Badland—6 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Terlco Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, bud sagebrush, Bailey greasewood
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Pintwater Soil

Position on landscape: Side slopes of rock pediment remnants
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2, A-4
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of rock pediment remnants; distinctive present vegetation—barren
Inclusion 2: Position on landscape—small peaks and ridges on rock pediment remnants; distinctive present vegetation—barren
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 36)

Elements of Wildlife Habitat

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 36.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Terlco	Pintwater	Wardenot	1	2	3
Indian ricegrass	ORHY	5-20	5-15	5-10	---	---	5-10
Galleta	HIJA	5-10	5-20	10-25	---	---	---
Needlegrass	STIPA	---	5-10	2-5	---	---	---
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	---	---
Other perennial grasses	PPGG	5-10	5-10	5-15	---	---	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	---	2-4
Perennial forbs	PPFF	5-10	5-10	4-10	---	---	2-6
Native annual forbs	AAFF	2-5	2-5	1-5	---	---	1-5
Spiny menodora	MESP2	10-30	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	5-10	---	---	2-10
Shadscale	ATCO	5-15	15-25	10-25	---	---	---
Bud sagebrush	ARSP5	5-10	2-5	5-10	---	---	---
Nevada ephedra	EPNE	5-10	2-5	1-5	---	---	2-5
Winterfat	EULA5	---	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	---	---	10-20
Joshua-tree	YUBR	---	---	1-2	---	---	---
Site symbol		029X036N	029X022N	029X017N	---	---	029X041N
Potential production (lb/acre):							
Favorable years		400	300	350	---	---	500
Normal years		300	200	250	---	---	300
Unfavorable years		100	100	100	---	---	100

Interpretive Groups

Capability classification: Terlco soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated

Site symbol: Terlco soil—029X036N; Pintwater soil—029X022N; Wardenot soil—29X017N

194—Terlco-Roic-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Terlco very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—40 percent
Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes, (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—30 percent
Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Badland—5 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Oricto very gravelly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 4: Rock outcrop—2 percent

Terlco Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, spiny menodora
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Roic Soil

Position on landscape: Rock pediment remnants
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches

Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2, A-4
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of unconsolidated rock pediment remnants; distinctive present vegetation—barren
Inclusion 2: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush
Inclusion 3: Position on landscape—fan remnants; distinctive present vegetation—shadscale, Bailey greasewood, Cooper wolfberry
Inclusion 4: Position on landscape—rock pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 37)

Elements of Wildlife Habitat

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 37.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Terlco	Roic	Wardenot	1	2	3	4
Indian ricegrass	ORHY	5-20	2-5	5-10	---	5-10	1-10	---
Galleta	HIJA	5-10	---	10-25	---	---	---	---
King desertgrass	BLKI	---	1-2	---	---	---	1-2	---
Bottlebrush squirreltail	SIHY	---	1-2	2-5	---	---	---	---
Needlegrass	STIPA	---	---	2-5	---	---	---	---
Other perennial grasses	PPGG	5-10	1-5	5-15	---	5-10	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	---	2-4	1-5	---
Perennial forbs	PPFF	5-10	2-5	4-10	---	2-6	5-10	---
Native annual forbs	AAFF	2-5	1-5	1-5	---	1-5	2-5	---
Spiny menodora	MESP2	10-30	---	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	10-15	5-10	---	2-10	10-15	---
Shadscale	ATCO	5-15	40-60	10-25	---	---	20-40	---
Bud sagebrush	ARSP5	5-10	2-5	5-10	---	---	---	---
Nevada ephedra	EPNE	5-10	---	1-5	---	2-5	---	---
Nevada dalea	DAPO2	---	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	2-5	5-15	---
Winterfat	EULA5	---	---	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---	---
Other shrubs	SSSS	10-20	5-15	10-20	---	10-20	5-15	---
Joshua-tree	YUBR	---	---	1-2	---	---	---	---
Site symbol		029X036N	029X033N	029X017N	---	029X041N	029X032N	---
Potential production (lb/acre):								
Favorable years		400	100	350	---	500	150	---
Normal years		300	50	250	---	300	100	---
Unfavorable years		100	25	100	---	100	5	---

Interpretive Groups

Capability classification: Terlco soil—VIIs, nonirrigated; Roic soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated

Site symbol: Terlco soil—029X036N; Roic soil—029X033N; Wardenot soil—029X017N

195—Terlco-Lyda-Lathrop association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,400 to 6,100 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Terlco very gravelly fine sandy loam, 8 to 15 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—35 percent
Lyda very gravelly fine sandy loam, 2 to 4 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Lathrop very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Haplic Durargids, 2 to 8 percent slopes (Haplic Durargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Wardenot very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Terlco Soil

Position on landscape: Lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, spiny menodora, Indian ricegrass, galleta
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Lyda Soil

Position on landscape: Stable surfaces on fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, spiny menodora, Indian ricegrass, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lathrop Soil

Position on landscape: Upper part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, spiny menodora, shadscale, bud sagebrush
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 3: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 38)

Elements of Wildlife Habitat

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium
(Lyda Soil)
Suitability and limitations for the following uses:

TABLE 38.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Terlco	Lyda	Lathrop	1	2	3
Indian ricegrass	ORHY	5-20	5-20	5-20	5-20	5-10	5-10
Galleta	HIJA	5-10	5-10	5-10	5-10	10-25	---
Bottlebrush squirreltail	SIHY	---	---	---	---	2-5	---
Needlegrass	STIPA	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	5-10	5-10	4-10	2-6
Native annual forbs	AAFF	2-5	2-5	2-5	2-5	1-5	1-5
Spiny menodora	MESP2	10-30	10-30	10-30	10-30	---	---
Bailey greasewood	SAVEB	5-15	5-15	5-15	5-15	5-10	2-10
Shadscale	ATCO	5-15	5-15	5-15	5-15	10-25	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	5-10	---
Nevada ephedra	EPNE	5-10	5-10	5-10	5-10	1-5	2-5
Winterfat	EULA5	---	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	---	1-2	---
Site symbol		029X036N	029X036N	029X036N	029X036N	029X017N	029X041N
Potential production (lb/acre):							
Favorable years		400	400	400	400	350	500
Normal years		300	300	300	300	250	300
Unfavorable years		100	100	100	100	100	100

Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Lathrop Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones

Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Terlco soil—VIIs, nonirrigated; Lyda soil—VIIs, nonirrigated; Lathrop soil—VIIs, nonirrigated

Site symbol: Terlco soil—029X036N; Lyda soil—029X036N; Lathrop soil—029X036N

196—Terlco-Unsel-Lathrop association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,300 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Terlco very cobbly sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—45 percent
Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—25 percent
Lathrop gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Lyda extremely gravelly fine sandy loam, 2 to 4 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—3 percent

Terlco Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, bud sagebrush, spiny menodora, Indian ricegrass
Typical profile:
0 to 2 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Unsel Soil

Position on landscape: Lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2

20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lathrop Soil

Position on landscape: Higher part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, bud sagebrush, spiny menodora, Indian ricegrass, galleta
Typical profile:

0 to 5 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-2, A-4

5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6

11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1

30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP, GP-GM, SP-SM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush
Inclusion 3: Position on landscape—fan remnants; distinctive present vegetation—shadscale, Bailey greasewood, spiny menodora

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 39)

Elements of Wildlife Habitat

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, large stones, excess salt
Shallow excavations: Severe—cutbanks cave

TABLE 39.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tulco	Unsel	Lathrop	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-20	5-10	5-10	5-20
Galleta	HIJA	5-10	10-25	5-10	---	10-25	5-10
Bottlebrush squirreltail	SIHY	---	2-5	---	---	2-5	---
Needlegrass	STIPA	---	2-5	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	5-10	2-6	4-10	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	1-5	2-5
Spiny menodora	MESP2	10-30	---	10-30	---	---	10-30
Bailey greasewood	SAVEB	5-15	5-10	5-15	2-10	5-10	5-15
Shadscale	ATCO	5-15	10-25	5-15	---	10-25	5-15
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10	5-10
Nevada ephedra	EPNE	5-10	1-5	5-10	2-5	1-5	5-10
Winterfat	EULA5	---	5-10	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	---	---	1-2	---
Site symbol		029X036N	029X017N	029X036N	029X041N	029X017N	029X036N
Potential production (lb/acre):							
Favorable years		400	350	400	500	350	400
Normal years		300	250	300	300	250	300
Unfavorable years		100	100	100	100	100	100

Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium

(Unsel Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Lathrop Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—large stones, seepage

Interpretive Groups

Capability classification: Terlco soil—VIIs, nonirrigated; Unsel soil—VIIc, nonirrigated; Lathrop soil—VIIs, nonirrigated
Site symbol: Terlco soil—029X036N; Unsel soil—029X017N; Lathrop soil—029X036N

200—Zadvar-Stewval association

Map Unit Setting

Position on landscape: Rock pediments, hills, fan piedmont remnants
Elevation: 6,100 to 6,400 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 100 days

Composition

Zadvar gravelly fine sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—50 percent
Stewval very gravelly fine sandy loam, 8 to 15 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 4 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—10 percent
Inclusion 2: Unsel very gravelly fine sandy loam, 4 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—5 percent

Zadvar Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 6 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 5 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6
12 to 22 inches—cemented
22 to 60 inches—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle, firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Stewval Soil

Position on landscape: Hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—long; shape—convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low

Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—black sagebrush, ephedra

Inclusion 2: Position on landscape—fan remnants; distinctive present vegetation—shadscale, bud sagebrush

Inclusion of minor extent: Position on landscape—drainageways near Montezuma Mountain; distinctive present vegetation—basin big sagebrush, Wyoming big sagebrush

Inclusion of minor extent: Position on landscape—fan remnants near Montezuma Mountain; distinctive present vegetation—Joshua-tree

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 40)

TABLE 40.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Zadvar	Stewval	1	2
Galleta	HIJA	5-20	5-15	5-15	10-25
Needlegrass	STIPA	5-15	2-10	2-10	2-5
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10
Bluegrass	POA++	---	2-10	2-10	---
Bottlebrush squirreltail	SIHY	---	1-5	1-5	2-5
Other perennial grasses	PPGG	10-15	10-15	10-15	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	3-8	5-10	5-10	4-10
Native annual forbs	AAFF	2-5	1-5	1-5	1-5
Black sagebrush	ARARN	20-25	15-20	15-20	---
Bud sagebrush	ARSP5	5-10	2-5	2-5	5-10
Winterfat	EULA5	2-5	2-5	2-5	5-10
Nevada ephedra	EPNE	2-5	5-10	5-10	1-5
Shadscale	ATCO	---	---	---	10-25
Bailey greasewood	SAVEB	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2
Site symbol		029X008N	029X014N	029X014N	029X017N
Potential production (lb/acre):					
Favorable years		700	500	500	350
Normal years		400	300	300	250
Unfavorable years		200	100	100	100

Elements of Wildlife Habitat

Suitability of Zadvar soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Zadvar Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, soil blowing
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Zadvar soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated
Site symbol: Zadvar soil—029X008N; Stewval soil—029X014N

201—Zadvar-Veet-Lyda association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,900 to 6,500 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Zadvar gravelly fine sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—45 percent
Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—25 percent
Lyda very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Stewval very gravelly sandy loam, 8 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Xeric Torriorthents, 15 to 50 percent (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—3 percent
Inclusion 4: Rock outcrop—2 percent

Zadvar Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta, bluegrass
Typical profile:
0 to 6 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 5 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6
12 to 22 inches—cemented
22 to 60 inches—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle, firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Soil

Position on landscape: Side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic

(SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Lyda Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush, spiny menodora
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rabbitbrush
Inclusion 2: Position on landscape—hills and rock pediments adjacent to fan piedmonts; distinctive present vegetation—black sagebrush, galleta
Inclusion 3: Position on landscape—eroded side slopes of fan remnants; distinctive present vegetation—Wyoming big sagebrush, needlegrass
Inclusion 4: Position on landscape—side slopes of rock pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 41)

Elements of Wildlife Habitat

Suitability of Zadvar soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Zadvar Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, soil blowing
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Lyda Soil)

TABLE 41.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Zadvar	Veet	Lydia	1	2	3	4
Galleta	HIJA	5-20	5-25	5-10	1-3	5-15	5-15	---
Needlegrass	STIPA	5-15	5-15	---	---	2-10	5-10	---
Indian ricegrass	ORHY	5-10	5-15	5-20	2-5	5-10	5-10	---
Dropseed	SPORO	---	5-15	---	---	---	1-5	---
Bottlebrush squirreltail	SIHY	---	1-5	---	---	1-5	1-4	---
Basin wildrye	ELCI2	---	---	---	2-5	---	---	---
Bluegrass	POA++	---	---	---	---	2-10	---	---
Other perennial grasses	PPGG	10-15	5-20	5-10	5-10	10-15	5-20	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	3-8	3-10	5-10	5-10	5-10	4-10	---
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	1-5	2-7	---
Black sagebrush	ARARN	20-25	---	---	---	15-20	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	2-5	---	---
Winterfat	EULA5	2-5	2-10	---	---	2-5	---	---
Nevada ephedra	EPNE	2-5	---	5-10	1-5	5-10	5-10	---
Wyoming big sagebrush	ARTRW*	---	15-20	---	---	---	20-30	---
Spiny hopsage	GRSP	---	5-10	---	---	---	---	---
Spiny menodora	MESP2	---	---	10-30	---	---	---	---
Bailey greasewood	SAVEB	---	---	5-15	---	---	---	---
Shadscale	ATCO	---	---	5-15	---	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-20	10-20	---
Site symbol		029X008N	029X049N	029X036N	029X009N	029X014N	029X010N	---
Potential production (lb/acre):								
Favorable years		700	900	400	700	500	600	---
Normal years		400	600	300	500	300	400	---
Unfavorable years		200	300	100	200	100	200	---

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, small stones

Shallow excavations: Severe—cemented pan

Local roads and streets: Severe—cemented pan

Roadfill: Poor—cemented pan

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Zadvar soil—VIIs, nonirrigated; Veet soil—VIIs, nonirrigated; Lyda soil—VIIs, nonirrigated

Site symbol: Zadvar soil—029X008N; Veet soil—029X049N; Lyda soil—029X036N

203—Zadvar-Armespan-Wrango association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,800 to 6,800 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Zadvar very gravelly sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—55 percent
Armespan very gravelly sandy loam, 4 to 15 percent slopes (Durixerollic Calciorthids - loamy-skeletal, mixed, mesic)—15 percent
Wrango gravelly loamy sand, 4 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Xeric Torriorthents, 8 to 30 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 3: Armespan Variant very cobbly sandy loam, 4 to 15 percent slopes (Typic Durixerolls - loamy-skeletal, mixed, mesic, shallow)—3 percent
Inclusion 4: Tomel very gravelly sandy loam, moist, 2 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—2 percent

Zadvar Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, bottlebrush squirreltail, galleta
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 5 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6
12 to 22 inches—cemented
22 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle, firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Armespan Soil

Position on landscape: Upper part of fan piedmont remnants and fan-remnant side slopes
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, galleta, bottlebrush squirreltail
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 9 inches—sandy loam, gravelly sandy loam, gravelly loam; 0 to 5 percent cobbles and stones and 10 to 35 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
9 to 15 inches—gravelly sandy loam, gravelly loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky

structure; slightly hard, very friable; moderately alkaline (pH 8.4); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2, A-4

15 to 30 inches—very gravelly sandy loam, very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1

30 to 60 inches or more—very gravelly loamy coarse sand, very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, GM, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Wrango Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta, rabbitbrush
Typical profile:

0 to 2 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1

2 to 14 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2

14 to 60 inches or more—extremely gravelly loamy coarse sand, extremely gravelly sand, extremely gravelly loamy sand; 5 to 40 percent cobbles and stones and 70 to 85 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 2.0 to 3.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush
Inclusion 2: Position on landscape—lower part of side slopes of fan piedmonts; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—higher fan remnants; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush
Inclusion 4: Position on landscape—lower side slopes of fan piedmont remnants; distinctive present vegetation—spiny menodora, shadscale, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 42)

Elements of Wildlife Habitat

Suitability of Zadvar soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Armespan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Wrango soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 42.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Zadvar	Armespan	Wrango	1	2	3	4
Galleta	HIJA	5-20	5-20	---	1-3	5-15	---	5-10
Needlegrass	STIPA	5-15	5-15	5-10	---	2-10	2-5	---
Indian ricegrass	ORHY	5-10	5-10	15-25	2-5	5-10	---	5-20
Basin wildrye	ELCI2	---	---	2-5	2-5	---	---	---
Bluegrass	POA++	---	---	---	---	2-10	10-20	---
Bottlebrush squirreltail	SIHY	---	---	---	---	1-5	5-10	---
Muttongrass	POFE	---	---	---	---	---	25-40	---
Prairie junegrass	KOCR	---	---	---	---	---	5-10	---
Other perennial grasses	PPGG	10-15	10-15	10-20	5-10	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	---	1-5
Perennial forbs	PPFF	3-8	3-8	5-10	5-10	5-10	5-15	5-10
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	1-5	1-3	2-5
Black sagebrush	ARARN	20-25	20-25	20-30	---	15-20	---	---
Bud sagebrush	ARSP5	5-10	5-10	2-5	---	2-5	---	5-10
Winterfat	EULA5	2-5	2-5	5-10	---	2-5	---	---
Nevada ephedra	EPNE	2-5	2-5	---	1-5	5-10	---	5-10
Small rabbitbrush	CHVIS	---	---	2-5	---	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---	---
Mountain big sagebrush	ARTRV	---	---	---	---	---	10-20	---
Bitterbrush	PURSH	---	---	---	---	---	5-15	---
Snowberry	SYMPH	---	---	---	---	---	2-5	---
Curlleaf mountainmahogany	CELE3	---	---	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	---	1-3	---
Spiny menodora	MESP2	---	---	---	---	---	---	10-30
Bailey greasewood	SAVEB	---	---	---	---	---	---	5-15
Shadscale	ATCO	---	---	---	---	---	---	5-15
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-20	5-15	10-20
Singleleaf pinyon	PIMO	---	---	---	---	---	2-5	---
Utah juniper	JUOS	---	---	---	---	---	1-3	---
Site symbol		029X008N	029X008N	028B011N	029X009N	029X014N	029X066N	029X036N
Potential production (lb/acre):								
Favorable years		700	700	900	700	500	475	400
Normal years		400	400	700	500	300	375	300
Unfavorable years		200	200	400	200	100	200	100

Ratings for Selected Uses

(Zadvar Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Armespan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—frost action, slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Moderate—seepage
(Wrango Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, too sandy, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Zadvar soil—VIIs, nonirrigated; Armespan soil—VIIs, nonirrigated; Wrango soil—VIIs, nonirrigated
Site symbol: Zadvar soil—029X008N; Armespan soil—029X008N; Wrango soil—028B011N

211—Lomoine-Pumel-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,000 to 7,000 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 105 days

Composition

Lomoine very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—35 percent
Pumel very gravelly sandy loam, 30 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—35 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Lathrop very gravelly sandy loam, 8 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Zadvar very stony sandy loam, 8 to 15 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—4 percent
Inclusion 3: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent

Lomoine Soil

Position on landscape: Mountainsides, mainly north aspects
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
4 to 8 inches—very gravelly sandy loam, very gravelly coarse sandy loam; 0 to 30 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
8 inches—unweathered bedrock
Range in depth to bedrock: 3 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Pumel Soil

Position on landscape: Side slopes of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders and side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—mountain-valley fans; distinctive present vegetation—shadscale, Indian ricegrass, spiny menodora

Inclusion 2: Position on landscape—mountain-valley fans; distinctive present vegetation—black sagebrush, galleta

Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—black sagebrush, ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 43)

Elements of Wildlife Habitat

Suitability of Lomoine soil for named elements:

TABLE 43.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Lomoine	Pumel	Rock outcrop	1	2	3
Galleta	HIJA	5-15	5-20	---	5-10	5-20	5-20
Indian ricegrass	ORHY	5-10	5-15	---	5-20	5-10	5-10
Needlegrass	STIPA	2-10	5-10	---	---	5-15	5-15
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	---	---	---	---
Other perennial grasses	PPGG	10-15	5-10	---	5-10	10-15	10-15
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	3-8	3-8
Native annual forbs	AAFF	1-5	2-5	---	2-5	2-5	2-5
Black sagebrush	ARARN	15-20	---	---	---	20-25	20-25
Nevada ephedra	EPNE	5-10	2-5	---	5-10	2-5	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	5-10	5-10	5-10
Winterfat	EULA5	2-5	---	---	---	2-5	2-5
Shadscale	ATCO	---	15-25	---	5-15	---	---
Bailey greasewood	SAVEB	---	5-15	---	5-15	---	---
Spiny menodora	MESP2	---	---	---	10-30	---	---
Other shrubs	SSSS	10-20	10-20	---	10-20	10-20	10-20
Site symbol		029X014N	029X022N	---	029X036N	029X008N	029X008N
Potential production (lb/acre):							
Favorable years		500	300	---	400	700	700
Normal years		300	200	---	300	400	400
Unfavorable years		100	100	---	100	200	200

Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lomoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage
(Pumel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Lomoine soil—VIIs, nonirrigated; Pumel soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Lomoine soil—029X014N; Pumel soil—029X022N

220—Advokay-Itme association

Map Unit Setting

Position on landscape: Hills, rock pediments, inset fans
Elevation: 5,400 to 6,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Advokay gravelly coarse sandy loam, 4 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—50 percent
Itme gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very gravelly fine sandy loam, 8 to 15 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—4 percent
Inclusion 3: Rock outcrop—1 percent

Advokay Soil

Position on landscape: Rock pediments, hills
Parent material: Residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—coarse grained tuffaceous rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Indian ricegrass, shadscale
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, dissected rock pediments; distinctive present vegetation—black sagebrush

Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush

Inclusion 3: Position on landscape—shoulders of hills; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 44)

Elements of Wildlife Habitat

Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor

TABLE 44.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Advokey	Itme	1	2	3
Galleta	HIJA	10-25	10-25	5-15	10-25	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	---
Bottlebrush squirreltail	SIHY	2-5	2-5	1-5	2-5	---
Needlegrass	STIPA	2-5	2-5	2-10	2-5	---
Bluegrass	POA++	---	---	2-10	---	---
Other perennial grasses	PPGG	5-15	5-15	10-15	5-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	4-10	4-10	5-10	4-10	---
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	---
Shadscale	ATCO	10-25	10-25	---	10-25	---
Bailey greasewood	SAVEB	5-10	5-10	---	5-10	---
Bud sagebrush	ARSP5	5-10	5-10	2-5	5-10	---
Winterfat	EULA5	5-10	5-10	2-5	5-10	---
Nevada ephedra	EPNE	1-5	1-5	5-10	1-5	---
Black sagebrush	ARARN	---	---	15-20	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	---
Joshua-tree	YUBR	1-2	1-2	---	1-2	---
Site symbol		O29XO17N	O29XO17N	O29XO14N	O29XO17N	---
Potential production (lb/acre):						
Favorable years		350	350	500	350	---
Normal years		250	250	300	250	---
Unfavorable years		100	100	100	100	---

Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Advokay soil—VIIs, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Advokay soil—029X017N; Itme soil—029X017N

221—Advokay-Blacktop-Itme association

Map Unit Setting

Position on landscape: Hills, rock pediments, inset fans
Elevation: 5,400 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 115 days

Composition

Advokay gravelly coarse sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—35 percent
Blacktop very gravelly fine sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Itme gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—7 percent
Inclusion 2: Roic gravelly fine sandy loam, 4 to 15 percent slopes, eroded (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 3: Stewval very gravelly fine sandy loam, 8 to 15 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—2 percent

Advokay Soil

Position on landscape: Summits and shoulders of rock pediments and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Side slopes of rock pediments and hills
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:

0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1

3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1

41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 2: Position on landscape—hills; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—hills and dissected rock pediments; distinctive present vegetation—black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 45)

Elements of Wildlife Habitat

Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Advokay soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Advokay soil—029X017N; Blacktop soil—029X033N; Itme soil—029X017N

TABLE 45.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Advokay	Blacktop	Itme	1	2	3
Galleta	HIJA	10-25	---	10-25	10-25	---	5-15
Indian ricegrass	ORHY	5-10	2-5	5-10	5-10	2-5	5-10
Bottlebrush squirreltail	SIHY	2-5	1-2	2-5	2-5	1-2	1-5
Needlegrass	STIPA	2-5	---	2-5	2-5	---	2-10
King desertgrass	BLKI	---	1-2	---	---	1-2	---
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-15	1-5	5-15	5-15	1-5	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	2-5	4-10	4-10	2-5	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	40-60	10-25	10-25	40-60	---
Bailey greasewood	SAVEB	5-10	10-15	5-10	5-10	10-15	---
Bud sagebrush	ARSP5	5-10	2-5	5-10	5-10	2-5	2-5
Winterfat	EULA5	5-10	---	5-10	5-10	---	2-5
Nevada ephedra	EPNE	1-5	---	1-5	1-5	---	5-10
Nevada dalea	DAPO2	---	5-10	---	---	5-10	---
Cooper wolfberry	LYCO2	---	2-5	---	---	2-5	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Other shrubs	SSSS	10-20	5-15	10-20	10-20	5-15	10-20
Joshua-tree	YUBR	1-2	---	1-2	1-2	---	---
Site symbol		O29XO17N	O29XO33N	O29XO17N	O29XO17N	O29XO33N	O29XO14N
Potential production (lb/acre):							
Favorable years		350	100	350	350	100	500
Normal years		250	50	250	250	50	300
Unfavorable years		100	25	100	100	25	100

222—Advokay-Blacktop association

Map Unit Setting

Position on landscape: Hills, rock pediments
Elevation: 5,000 to 5,700 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Advokay gravelly coarse sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—65 percent
Blacktop very gravelly fine sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Unsel very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 3: Stumble fine sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—4 percent

Advokay Soil

Position on landscape: Summits and shoulders of rock pediments and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass, bud sagebrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Side slopes of hills and rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush, shadscale
Inclusion 2: Position on landscape—adjacent alluvial fans and inset fans; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush
Inclusion 3: Position on landscape—sand sheets on rock pediments and adjacent alluvial fans; distinctive

present vegetation—dalea, Indian ricegrass, littleleaf horsebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 46)

Elements of Wildlife Habitat

Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 46.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Advokay	Blacktop	1	2	3
Galleta	HIJA	10-25	---	---	10-25	2-5
Indian ricegrass	ORHY	5-10	2-5	5-10	5-10	20-30
Bottlebrush squirreltail	SIHY	2-5	1-2	---	2-5	---
Needlegrass	STIPA	2-5	---	---	2-5	2-5
King desertgrass	BLKI	---	1-2	---	---	---
Dropseed	SPORO	---	---	---	---	5-25
Other perennial grasses	PPGG	5-15	1-5	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	2-5
Perennial forbs	PPFF	4-10	2-5	2-6	4-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	2-5
Shadscale	ATCO	10-25	40-60	---	10-25	---
Bailey greasewood	SAVEB	5-10	10-15	2-10	5-10	---
Bud sagebrush	ARSP5	5-10	2-5	---	5-10	5-10
Winterfat	EULA5	5-10	---	---	5-10	5-20
Nevada ephedra	EPNE	1-5	---	2-5	1-5	---
Nevada dalea	DAPO2	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	2-5	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	15-25
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Spiny hopsage	GRSP	---	---	---	---	1-5
Other shrubs	SSSS	10-20	5-15	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	---	1-2	---
Site symbol		029X017N	029X033N	029X041N	029X017N	029X012N
Potential production (lb/acre):						
Favorable years		350	100	500	350	500
Normal years		250	50	300	250	350
Unfavorable years		100	25	100	100	200

Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Advokay soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Advokay soil—029X017N; Blacktop soil—029X033N

224—Advokay-Ardivey-Leo association

Map Unit Setting

Position on landscape: Hills, rock pediments, fan piedmonts, alluvial fans
Elevation: 5,400 to 5,900 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Advokay gravelly coarse sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—35 percent
Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—5 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xerollic Haplargids, 4 to 15 percent slopes (Xerollic Haplargids - loamy, mixed, mesic, shallow)—5 percent

Advokay Soil

Position on landscape: Hills, dissected rock pediment remnants
Parent material: Colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Leo Soil

Position on landscape: Inset fans, fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny hopsage, Indian ricegrass, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GM, SM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of rock pediments; distinctive present vegetation—barren
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—rubber rabbitbrush, basin big sagebrush
Inclusion 3: Position on landscape—upper side slopes of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 47)

Elements of Wildlife Habitat

Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Advokay soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated
Site symbol: Advokay soil—029X017N; Ardivey soil—029X036N; Leo soil—029X046N

TABLE 47.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Advokay	Ardivey	Leo	1	2	3
Galleta	HIJA	10-25	5-10	5-20	---	1-3	5-15
Indian ricegrass	ORHY	5-10	5-20	5-10	---	2-5	5-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---	---	1-4
Needlegrass	STIPA	2-5	---	2-5	---	---	5-10
Dropseed	SPORO	---	---	5-15	---	---	1-5
Basin wildrye	ELCI2	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-15	5-10	5-10	---	5-10	5-20
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	5-7	---	5-10	4-10
Native annual forbs	AAFF	1-5	2-5	2-4	---	1-5	2-7
Shadscale	ATCO	10-25	5-15	---	---	---	---
Bailey greasewood	SAVEB	5-10	5-15	---	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	---	---
Winterfat	EULA5	5-10	---	5-20	---	---	---
Nevada ephedra	EPNE	1-5	5-10	---	---	1-5	5-10
Spiny menodora	MESP2	---	10-30	---	---	---	---
Fourwing saltbush	ATCA2	---	---	10-15	---	---	---
Spiny hopsage	GRSP	---	---	2-8	---	---	---
Anderson wolfberry	LYAN	---	---	1-5	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	---	20-30
Other shrubs	SSSS	10-20	10-20	10-25	---	10-25	10-20
Joshua-tree	YUBR	1-2	---	---	---	---	---
Site symbol		O29XO17N	O29XO36N	O29XO46N	---	O29XO09N	O29XO10N
Potential production (lb/acre):							
Favorable years		350	400	450	---	700	600
Normal years		250	300	350	---	500	400
Unfavorable years		100	100	175	---	200	200

225—Advokay-Blacktop-Tomel association

Map Unit Setting

Position on landscape: Hills, rock pediments, fan piedmonts
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Advokay gravelly coarse sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—35 percent
Blacktop very gravelly fine sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—25 percent
Tomel very gravelly sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Breko very gravelly sandy loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Ardivey very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Rock outcrop—2 percent

Advokay Soil

Position on landscape: Summits and upper side slopes of hills and dissected rock pediments
Parent material: Colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush, low rabbitbrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Side slopes of rock pediments
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass, bud sagebrush
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Tomel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, Indian ricegrass, Joshua-tree, bud sagebrush
Typical profile:

0 to 3 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1

3 to 19 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2

19 to 26 inches—indurated

26 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 5 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; very hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1

Range in depth to indurated layer: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—north-facing side slopes of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—spiny hopsage, shadscale, fourwing saltbush
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 4: Position on landscape—shoulders of hills; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 48)

Elements of Wildlife Habitat

Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—poor
Suitability of Tomel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Tomel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt

Interpretive Groups

Capability classification: Advokay soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Tomel soil—VIIs, nonirrigated
Site symbol: Advokay soil—029X017N; Blacktop soil—029X033N; Tomel soil—029X017N

TABLE 48.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Advokay	Blacktop	Tomel	1	2	3	4
Galleta	HIJA	10-25	---	10-25	5-15	5-20	10-25	---
Indian ricegrass	ORHY	5-10	2-5	5-10	5-10	5-10	5-10	---
Bottlebrush squirreltail	SIHY	2-5	1-2	2-5	1-5	---	2-5	---
Needlegrass	STIPA	2-5	---	2-5	2-10	? 2-	2-5	---
King desertgrass	BLKI	---	1-2	---	---	---	---	---
Dropseed	SPORO	---	---	---	1-5	? 5-1	---	---
Other perennial grasses	PPGG	5-15	1-5	5-15	10-20	0	5-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	5	1-5	---
Perennial forbs	PPFF	4-10	2-5	4-10	5-10	7	4-10	---
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	2-4	1-5	---
Shadscale	ATCO	10-25	40-60	10-25	---	---	10-25	---
Bailey greasewood	SAVEB	5-10	10-15	5-10	---	---	5-10	---
Bud sagebrush	ARSP5	5-10	2-5	5-10	---	5-10	5-10	---
Winterfat	EULA5	5-10	---	5-10	2-5	5-20	5-10	---
Nevada ephedra	EPNE	1-5	---	1-5	2-5	---	1-5	---
Nevada dalea	DAPO2	---	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	15-20	---	---	---
Fourwing saltbush	ATCA2	---	---	---	5-10	0-15	---	---
Spiny hopsage	GRSP	---	---	---	2-5	2-8	---	---
Anderson wolfberry	LYAN	---	---	---	---	1-5	---	---
Other shrubs	SSSS	10-20	5-15	10-20	10-25	0-25	10-20	---
Joshua-tree	YUBR	1-2	---	1-2	---	---	1-2	---
Site symbol		029X017N	029X033N	029X017N	029X006N	029X046N	029X017N	---
Potential production (lb/acre):								
Favorable years		350	100	350	800	450	350	---
Normal years		250	50	250	500	350	250	---
Unfavorable years		100	25	100	300	175	100	---

230—Stewval-Downeyville-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,300 to 7,200 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 105 days

Composition

Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Downeyville very stony fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Blacktop very stony fine sandy loam, 15 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent
Inclusion 2: Xeric Torriorthents, 0 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Izo very gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Vindicator very gravelly sandy loam, 15 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—2 percent

Stewval Soil

Position on landscape: Mainly north-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Downeyville Soil

Position on landscape: Lower part of south-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very stony fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification-GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches

Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders of side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded areas on mountainsides; distinctive present vegetation—shadscale
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, basin wildrye
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—spiny hopsage
Inclusion 4: Position on landscape—hills and mountainsides; distinctive present vegetation—spiny hopsage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 49)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Stewval soil—029X014N; Downeyville soil—029X022N

TABLE 49.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Stewval	Downeyville	Rock outcrop	1	2	3	4
Galleta	HIJA	5-15	5-20	---	---	1-3	---	5-15
Indian ricegrass	ORHY	5-10	5-15	---	2-5	2-5	5-10	5-10
Needlegrass	STIPA	2-10	5-10	---	---	---	---	2-5
Bluegrass	POA++	2-10	---	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	---	1-2	---	---	1-3
King desertgrass	BLKI	---	---	---	1-2	---	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---	---
Other perennial grasses	PPGG	10-15	5-10	---	1-5	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	5-10	---	2-5	5-10	2-6	5-10
Native annual forbs	AAFF	1-5	2-5	---	1-5	1-5	1-5	2-5
Black sagebrush	ARARN	15-20	---	---	---	---	---	---
Nevada ephedra	EPNE	5-10	2-5	---	---	1-5	2-5	1-5
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	---	---	2-5
Winterfat	EULA5	2-5	---	---	---	---	---	---
Shadscale	ATCO	---	15-25	---	40-60	---	---	---
Bailey greasewood	SAVEB	---	5-15	---	10-15	---	2-10	---
Nevada dalea	DAPO2	---	---	---	5-10	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	2-5	---	2-5	2-5
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	10-25	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	5-10	---
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	---	5-10	---
Spiny hopsage	GRSP	---	---	---	---	---	---	5-15
Anderson wolfberry	LYAN	---	---	---	---	---	---	5-15
Fremont dalea	DAFR	---	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	---	5-15	10-25	10-20	10-20
Site symbol		029X014N	029X022N	---	029X033N	029X009N	029X041N	029X021N
Potential production (lb/acre):								
Favorable years		500	300	---	100	700	500	300
Normal years		300	200	---	50	500	300	200
Unfavorable years		100	100	---	25	200	100	100

231—Stewval-Pintwater-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,000 to 7,300 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 110 days

Composition

Stewval very stony fine sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Pintwater very cobbly fine sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Rock outcrop—20 percent
Contrasting inclusions as follows—
Inclusion 1: Blacktop very gravelly fine sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—9 percent
Inclusion 2: Roic very gravelly fine sandy loam, dry, 15 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—3 percent
Inclusion 3: Izo very gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Stewval Soil

Position on landscape: Mainly north-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Pintwater Soil

Position on landscape: Lower part of eroded mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8

Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded side slopes of hills adjacent to mountains; distinctive present vegetation—shadscale
Inclusion 2: Position on landscape—side slopes of hills adjacent to mountains; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 50)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes and levees: Severe—thin layer
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Stewval soil—029X014N; Pintwater soil—029X022N

TABLE 50.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stewval	Pintwater	Rock outcrop	1	2	3
Galleta	HIJA	5-15	5-20	---	---	---	---
Indian ricegrass	ORHY	5-10	5-15	---	2-5	2-5	5-10
Needlegrass	STIPA	2-10	5-10	---	---	---	---
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	---	1-2	1-2	---
King desertgrass	BLKI	---	---	---	1-2	1-2	---
Other perennial grasses	PPGG	10-15	5-10	---	1-5	1-5	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	---	2-5	2-5	2-6
Native annual forbs	AAFF	1-5	2-5	---	1-5	1-5	1-5
Black sagebrush	ARARN	15-20	---	---	---	---	---
Nevada ephedra	EPNE	5-10	2-5	---	---	---	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	2-5	---
Winterfat	EULA5	2-5	---	---	---	---	---
Shadscale	ATCO	---	15-25	---	40-60	40-60	---
Bailey greasewood	SAVEB	---	5-15	---	10-15	10-15	2-10
Nevada dalea	DAPO2	---	---	---	5-10	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	2-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	---	5-15	5-15	10-20
Site symbol		029X014N	029X033N	---	029X017N	029X033N	029X017N
Potential production (lb/acre):							
Favorable years		500	100	---	350	100	350
Normal years		300	50	---	250	50	250
Unfavorable years		100	25	---	100	25	100

232—Stewval-Advokay-Itme association

Map Unit Setting

Position on landscape: Rock pediments, hills, inset fans
Elevation: 5,800 to 6,300 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 105 days

Composition

Stewval very gravelly fine sandy loam, 8 to 15 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Advokay gravelly coarse sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—30 percent
Itme gravelly loamy sand, dry, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 4 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent
Inclusion 2: Rock outcrop—3 percent

Stewval Soil

Position on landscape: Side slopes of hills and rock pediment remnants
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Advokay Soil

Position on landscape: Hills, rock pediment remnants
Parent material: Kind—colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans at the base of rock pediment remnants and hills
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth

Dominant present vegetation: Shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, inset fans; distinctive present vegetation—shadscale, black sagebrush, Nevada ephedra
Inclusion 2: Position on landscape—crests and shoulders of hills and rock pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 51)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Stewval soil—029X014N; Advokay soil—029X017N; Itme soil—029X017N

TABLE 51.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Stewval	Advokay	Itme	1	2
Galleta	HIJA	5-15	10-25	10-25	5-20	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	---
Needlegrass	STIPA	2-10	2-5	2-5	5-15	---
Bluegrass	POA++	2-10	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	2-5	---	---
Other perennial grasses	PPGG	10-15	5-15	5-15	10-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	4-10	4-10	3-8	---
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	---
Black sagebrush	ARARN	15-20	---	---	20-25	---
Nevada ephedra	EPNE	5-10	1-5	1-5	2-5	---
Bud sagebrush	ARSP5	2-5	5-10	5-10	5-10	---
Winterfat	EULA5	2-5	5-10	5-10	2-5	---
Shadscale	ATCO	---	10-25	10-25	---	---
Bailey greasewood	SAVEB	---	5-10	5-10	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	---
Joshua-tree	YUBR	---	1-2	1-2	---	---
Site symbol		029X014N	029X017N	029X017N	029X008N	---
Potential production (lb/acre):						
Favorable years		500	350	350	700	---
Normal years		300	250	250	400	---
Unfavorable years		100	100	100	200	---

233—Stewval-Blacktop-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 5,600 to 7,000 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Stewval very stony fine sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Blacktop very stony fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Rock outcrop—20 percent
Contrasting inclusions as follows—
Inclusion 1: Advokay gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—7 percent
Inclusion 2: Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—4 percent
Inclusion 3: Itme gravelly loamy sand, dry, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Stewval Soil

Position on landscape: Mainly north-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Blacktop Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Nevada ephedra, Indian ricegrass
Typical profile:
0 to 4 inches—very stony fine sandy loam; 25 to 45 percent cobbles and stones and 40 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders and side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hills and rock pediments adjacent to mountains; distinctive present vegetation—shadscale, galleta, bud sagebrush
Inclusion 2: Position on landscape—foot slopes of mountains; distinctive present vegetation—shadscale, Indian ricegrass
Inclusion 3: Position on landscape—toe slopes of mountains and hills, adjacent alluvial fans; distinctive present vegetation—shadscale, galleta, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 52)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Stewval soil—029X014N; Blacktop soil—029X033N

TABLE 52.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stewval	Blacktop	Rock outcrop	1	2	3
Galleta	HIJA	5-15	---	---	5-15	5-15	---
Indian ricegrass	ORHY	5-10	2-5	---	5-10	5-10	2-5
Needlegrass	STIPA	2-10	5-15	---	5-10	2-10	---
Bluegrass	POA++	2-10	10-20	---	---	2-10	---
Bottlebrush squirreltail	SIHY	1-5	5-15	---	1-4	1-5	---
Muttongrass	POFE	---	2-5	---	---	---	---
Dropseed	SPORO	---	---	---	1-5	---	---
Other perennial grasses	PPGG	10-15	5-10	---	5-20	10-15	1-3
Native annual grasses	AAGG	1-5	---	---	1-5	1-5	1-3
Perennial forbs	PPFF	5-10	5-15	---	4-10	5-10	1-4
Native annual forbs	AAFF	1-5	1-3	---	2-7	1-5	1-3
Black sagebrush	ARARN	15-20	15-25	---	---	15-20	1-10
Nevada ephedra	EPNE	5-10	---	---	5-10	5-10	---
Bud sagebrush	ARSP5	2-5	---	---	---	2-5	---
Winterfat	EULA5	2-5	---	---	---	2-5	---
Bitterbrush	PURSH	---	5-10	---	---	---	---
Green ephedra	EPVI	---	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	20-30	---	1-5
Littleleaf mountainmahogany	CELEI2	---	---	---	---	---	50-75
Nevada greasebush	GLNE	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	5-10	---	10-20	10-20	5-15
Singleleaf pinyon	PIMO	---	5-10	---	---	---	---
Utah juniper	JUOS	---	5-10	---	---	---	---
Site symbol		029X014N	029X069N	---	029X010N	029X014N	029X040N
Potential production (lb/acre):							
Favorable years		500	350	---	600	500	350
Normal years		300	275	---	400	300	250
Unfavorable years		100	150	---	200	100	150

234—Stewval-Bellehelen-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,000 to 8,000 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 48 degrees F
Frost-free season—about 100 days

Composition

Stewval very gravelly fine sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Bellehelen very gravelly fine sandy loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Gabbvally stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Stewval very cobbly fine sandy loam, 50 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Eaglepass extremely gravelly coarse sand, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—1 percent

Stewval Soil

Position on landscape: Hills, lower part of mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, pine bluegrass
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Bellehelen Soil

Position on landscape: Upper side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, pine bluegrass
Typical profile:
0 to 5 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small ridges and peaks of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—mountains, hills; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—black sagebrush, pine bluegrass
Inclusion 3: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—black sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 53)

Woodland

(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Bellehelen soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Stewval soil—029X014N
Woodland suitability group: Bellehelen soil—1r

TABLE 53.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stewval	Blacktop	Rock outcrop	1	2	3
Galleta	HIJA	5-15	5-20	---	---	---	---
Indian ricegrass	ORHY	5-10	5-15	---	2-5	2-5	5-10
Needlegrass	STIPA	2-10	5-10	---	---	---	---
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	---	1-2	1-2	---
King desertgrass	BLKI	---	---	---	1-2	1-2	---
Other perennial grasses	PPGG	10-15	5-10	---	1-5	1-5	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	---	2-5	2-5	2-6
Native annual forbs	AAFF	1-5	2-5	---	1-5	1-5	1-5
Black sagebrush	ARARN	15-20	---	---	---	---	---
Nevada ephedra	EPNE	5-10	2-5	---	---	---	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	2-5	---
Winterfat	EULA5	2-5	---	---	---	---	---
Shadscale	ATCO	---	15-25	---	40-60	40-60	---
Bailey greasewood	SAVEB	---	5-15	---	10-15	10-15	2-10
Nevada dalea	DAPO2	---	---	---	5-10	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	2-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	---	5-15	5-15	10-20
Singleleaf pinyon	PIMO	---	5-10	---	---	---	---
Utah juniper	JUOS	---	5-10	---	---	---	---
Site symbol		O29XO14N	O29XO22N	---	O29XO33N	O29XO33N	O29XO41N
Potential production (lb/acre):							
Favorable years		500	300	---	100	100	500
Normal years		300	200	---	50	50	300
Unfavorable years		100	100	---	25	25	100

235—Stewval-Bellehelen-Gabbvally association

Map Unit Setting

Position on landscape: Mountains, mesas, hills
Elevation: 6,300 to 7,200 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 49 degrees F
Frost-free season—about 115 days

Composition

Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Bellehelen very stony loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—25 percent
Gabbvally very stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—6 percent
Inclusion 2: Squawtip very stony loam, 30 to 75 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—4 percent
Inclusion 3: Veet very stony sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Stewval Soil

Position on landscape: Mountainsides, side slopes of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Bellehelen Soil

Position on landscape: Side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, pine bluegrass
Typical profile:
0 to 5 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
5 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7

Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—shoulders and side slopes of mountains and mesas; distinctive present vegetation—barren
Inclusion 2: Position on landscape—mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush, bluegrass
Inclusion 3: Position on landscape—mountain-valley fans; distinctive present vegetation—Wyoming big sagebrush, galleta
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—rubber rabbitbrush, Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 54)

Woodland

(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 54.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Stewval	Bellehelen	Gabbvally	1	2	3	4
Galleta	HIJA	5-15	---	5-15	---	---	5-25	1-3
Indian ricegrass	ORHY	5-10	2-5	5-10	---	---	5-15	2-5
Needlegrass	STIPA	2-10	5-15	5-10	---	2-5	5-15	---
Bluegrass	POA++	2-10	10-20	---	---	10-20	---	---
Bottlebrush squirreltail	SIHY	1-5	5-15	1-4	---	15-10	1-5	---
Muttongrass	POFE	---	2-5	---	---	25-40	---	---
Needleandthread	STCO4	---	2-5	---	---	---	---	---
Dropseed	SPORO	---	---	1-5	---	---	5-15	---
Prairie junegrass	KOCR	---	---	---	---	5-10	---	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	5-10	5-20	---	5-10	5-20	5-10
Native annual grasses	AAGG	1-5	---	1-5	---	---	1-5	1-5
Perennial forbs	PPFF	5-10	5-15	4-10	---	5-15	3-10	5-10
Native annual forbs	AAFF	1-5	1-3	2-7	---	1-3	2-5	1-5
Black sagebrush	ARARN	15-20	15-25	---	---	---	---	---
Nevada ephedra	EPNE	5-10	---	5-10	---	---	---	1-5
Bud sagebrush	ARSP5	2-5	---	---	---	---	5-10	---
Winterfat	EULA5	2-5	---	---	---	---	2-10	---
Bitterbrush	PURSH	---	5-10	---	---	5-15	---	---
Green ephedra	EPVI	---	2-5	---	---	---	---	---
Douglas rabbitbrush	CHVI8	---	2-5	---	---	1-3	---	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---	---	15-20	---
Mountain big sagebrush	ARTRV	---	---	---	---	10-20	---	---
Snowberry	SYMPH	---	---	---	---	2-5	---	---
Curlleaf mountainmahogany	CELE3	---	---	---	---	2-5	---	---
Spiny hopsage	GRSP	---	---	---	---	---	5-10	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	5-10	10-20	---	5-15	10-20	10-25
Singleleaf pinyon	PIMO	---	5-10	---	---	2-5	---	---
Utah juniper	JUOS	---	5-10	---	---	1-3	---	---
Site symbol		029X014N	029X069N	029X010N	---	029X066N	029X049N	029X009N
Potential production (lb/acre):								
Favorable years		500	350	600	---	475	900	700
Normal years		300	275	400	---	375	600	500
Unfavorable years		100	150	200	---	200	300	200

Embankments, dikes, and levees: Severe—thin layer

(Gabbvally Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, large stones

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—depth to rock, slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Bellehelen soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated

Site symbol: Stewval soil—029X014N; Gabbvally soil—029X010N

Woodland suitability group: Bellehelen soil—1r

236—Stewval-Downeyville, moist-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,800 to 7,000 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 105 days

Composition

Stewval very stony fine sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Downeyville very stony fine sandy loam, moist, 30 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very cobbly fine sandy loam, 50 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal mixed, mesic)—7 percent
Inclusion 2: Gabbvally stony loam, 15 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Lithic Haplargids, 30 to 75 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Stewval Soil

Position on landscape: Upper part of north-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, pine bluegrass
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Downeyville Soil, Moist

Position on landscape: Lower part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 4 inches—very stony fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification-GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges on mountains and hills
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides, mountainsides; distinctive present vegetation—black sagebrush, pine bluegrass
Inclusion 2: Position on landscape—hillsides, mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—hillsides, mountainsides; distinctive present vegetation—needlegrass, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 55)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil, moist, for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Downeyville Soil, Moist)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Downeyville soil, moist—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Stewval soil—029X014N; Downeyville soil, moist—029X037N

TABLE 55.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stewval	Downeyville	Rock outcrop	1	2	3
Galleta	HIJA	5-15	10-20	---	5-15	5-15	---
Indian ricegrass	ORHY	5-10	2-5	---	5-10	5-10	5-10
Needlegrass	STIPA	2-10	5-10	---	2-10	5-10	20-30
Bluegrass	POA++	2-10	---	---	2-10	---	2-5
Bottlebrush squirreltail	SIHY	1-5	---	---	1-5	1-4	2-5
Dropseed	SPORO	---	---	---	---	1-5	---
Other perennial grasses	PPGG	10-15	5-10	---	10-15	5-20	2-5
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	---
Perennial forbs	PPFF	5-10	5-10	---	5-10	4-10	5-10
Native annual forbs	AAFF	1-5	2-5	---	1-5	2-7	---
Black sagebrush	ARARN	15-20	---	---	15-20	---	---
Nevada ephedra	EPNE	5-10	5-10	---	5-10	5-10	---
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	---	---
Winterfat	EULA5	2-5	---	---	2-5	---	---
Spiny menodora	MESP2	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	---	---	---	---
Anderson wolfberry	LYAN	---	5-10	---	---	---	---
Shadscale	ATCO	---	2-5	---	---	---	5-15
Wyoming big sagebrush	ARTRW*	---	---	---	---	20-30	---
Littleleaf horsebrush	TEGL	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	15-25	---	10-20	10-20	5-15
Site symbol		029X014N	029X037N	---	029X014N	029X010N	027X017N
Potential production (lb/acre):							
Favorable years		500	300	---	500	600	400
Normal years		300	200	---	300	400	200
Unfavorable years		100	100	---	100	200	100

237—Stewval-Gabbvally-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,200 to 7,200 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 52 degrees F
Frost-free season—about 115 days

Composition

Stewval very gravelly fine sandy loam, 15 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Gabbvally very gravelly fine sandy loam, 15 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very gravelly sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Bellehelen very gravelly loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Lithic Xeric Torriorthents, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent
Inclusion 4: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Stewval Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—6
Hazard of erosion: By water—moderate; by wind—moderate

Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks and ridges
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of mountainsides; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 2: Position on landscape—mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 3: Position on landscape—mountainsides; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 56)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Stewval soil—029X014N; Gabbvally soil—029X010N

TABLE 56.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Stewval	Gabbvally	Rock outcrop	1	2	3	4
Galleta	HIJA	5-15	5-15	---	5-20	---	5-15	1-3
Indian ricegrass	ORHY	5-10	5-10	---	5-15	2-5	5-10	2-5
Needlegrass	STIPA	2-10	5-10	---	5-10	5-15	5-10	---
Bluegrass	POA++	2-10	---	---	---	10-20	---	---
Bottlebrush squirreltail	SIHY	1-5	1-4	---	2-5	5-15	1-4	---
Dropseed	SPORO	---	1-5	---	---	---	1-5	---
Muttongrass	POFE	---	---	---	---	2-5	---	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	5-20	---	5-10	5-10	5-20	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	---	5-10	5-15	4-10	5-10
Native annual forbs	AAFF	1-5	2-7	---	2-5	1-3	2-7	1-5
Black sagebrush	ARARN	15-20	---	---	---	15-25	---	---
Nevada ephedra	EPNE	5-10	5-10	---	2-5	---	5-10	1-5
Bud sagebrush	ARSP5	2-5	---	---	2-5	---	---	---
Winterfat	EULA5	2-5	---	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---	20-30	---
Shadscale	ATCO	---	---	---	15-25	---	---	---
Bailey greasewood	SAVEB	---	---	---	5-15	---	---	---
Bitterbrush	PURSH	---	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	1-5
Green ephedra	EPVI	---	---	---	---	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	2-5
Douglas rabbitbrush	CHVI8	---	---	---	---	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	10-20	---	10-20	5-10	10-20	10-25
Singleleaf pinyon	PIMO	---	---	---	---	5-10	---	---
Utah juniper	JUOS	---	---	---	---	5-10	---	---
Site symbol		029X014N	029X010N	---	029X022N	029X069N	029X010N	029X009N
Potential production (lb/acre):								
Favorable years		500	600	---	300	350	600	700
Normal years		300	400	---	200	275	400	500
Unfavorable years		100	200	---	100	150	200	200

238—Stewval-Malmesa-Wahguyhe association

Map Unit Setting

Position on landscape: Hills, mountains, mesas
Elevation: 6,600 to 7,400 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 51 degrees F
Frost-free season—about 110 days

Composition

Stewval very stony fine sandy loam, 8 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Malmesa very cobbly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—30 percent
Wahguyhe very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—9 percent
Inclusion 2: Weepah very gravelly loam, 30 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—3 percent
Inclusion 3: Bellehelen very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—3 percent

Stewval Soil

Position on landscape: Side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, Nevada ephedra, desert needlegrass
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Malmesa Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, desert needlegrass, Nevada ephedra
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Wahguyhe Soil

Position on landscape: Eroded side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, desert needlegrass, galleta
Typical profile:
0 to 8 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits, shoulders, and side slopes of mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—black sagebrush, desert needlegrass
Inclusion 3: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 57)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones, thin layer
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines

TABLE 57.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stewval	Malmesa	Wahguyhe	1	2	3
Galleta	HIJA	5-15	5-15	5-15	---	5-15	---
Indian ricegrass	ORHY	5-10	5-10	5-10	---	5-10	2-5
Needlegrass	STIPA	2-10	5-10	5-10	---	2-10	5-15
Bluegrass	POA++	2-10	---	---	---	2-10	10-20
Bottlebrush squirreltail	SIHY	1-5	1-4	1-4	---	1-5	5-15
Dropseed	SPORO	---	1-5	1-5	---	---	---
Muttongrass	POFE	---	---	---	---	---	2-5
Needleandthread	STCO4	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	5-20	5-20	---	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	---
Perennial forbs	PPFF	5-10	4-10	4-10	---	5-10	5-15
Native annual forbs	AAFF	1-5	2-7	2-7	---	1-5	1-3
Black sagebrush	ARARN	15-20	---	---	---	15-20	15-25
Nevada ephedra	EPNE	5-10	5-10	5-10	---	5-10	---
Bud sagebrush	ARSP5	2-5	---	---	---	2-5	---
Winterfat	EULA5	2-5	---	---	---	2-5	---
Wyoming big sagebrush	ARTRW*	---	20-30	20-30	---	---	---
Bitterbrush	PURSH	---	---	---	---	---	5-10
Green ephedra	EPVI	---	---	---	---	---	2-5
Douglas rabbitbrush	CHVI8	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20	5-10
Singleleaf pinyon	PIMO	---	---	---	---	---	5-10
Utah juniper	JUOS	---	---	---	---	---	5-10
Site symbol		029X014N	029X010N	029X010N	---	029X014N	029X069N
Potential production (lb/acre):							
Favorable years		500	600	600	---	500	350
Normal years		300	400	400	---	300	275
Unfavorable years		100	200	200	---	100	150

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Malmesa soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated
Site symbol: Stewval soil—029X014N; Malmesa soil—029X010N; Wahguyhe soil—029X010N

239—Stewval-Wahguyhe-Pintwater association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,800 to 6,800 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 51 degrees F
Frost-free season—about 110 days

Composition

Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Wahguyhe very stony sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—25 percent
Pintwater very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—10 percent
Inclusion 2: Gabbvally very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Xerollic Haplargids, 8 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—2 percent

Stewval Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, green ephedra, rabbitbrush, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Wahguyhe Soil

Position on landscape: Below rock outcroppings on side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, rabbitbrush
Typical profile:
0 to 8 inches—very stony sandy loam; 25 to 30 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pintwater Soil

Position on landscape: South-facing and lower side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, galleta
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—hillsides, mountainsides; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 3: Position on landscape—toe slopes of fan piedmonts and inset fans; distinctive present vegetation—black sagebrush, green ephedra, galleta, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 58)

Elements of Wildlife Habitat

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

TABLE 58.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stewval	Wahguyhe	Pintwater	1	2	3
Galleta	HIJA	5-15	5-15	5-20	---	5-15	5-20
Indian ricegrass	ORHY	5-10	5-10	5-15	---	5-10	5-10
Needlegrass	STIPA	2-10	5-10	5-10	---	5-10	5-15
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	1-4	2-5	---	1-4	---
Dropseed	SPORO	---	1-5	---	---	1-5	---
Other perennial grasses	PPGG	10-15	5-20	5-10	---	5-20	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	5-10	---	4-10	3-8
Native annual forbs	AAFF	1-5	2-7	2-5	---	2-7	2-5
Black sagebrush	ARARN	15-20	---	---	---	---	20-25
Nevada ephedra	EPNE	5-10	5-10	2-5	---	5-10	2-5
Bud sagebrush	ARSP5	2-5	---	2-5	---	---	5-10
Winterfat	EULA5	2-5	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	20-30	---
Shadscale	ATCO	---	---	15-25	---	---	---
Bailey greasewood	SAVEB	---	---	5-15	---	---	---
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20	10-20
Site symbol		029X014N	029X010N	029X022N	---	029X010N	029X008N
Potential production (lb/acre):							
Favorable years		500	600	300	---	600	700
Normal years		300	400	200	---	400	400
Unfavorable years		100	200	100	---	200	200

Interpretive Groups

Capability classification: Stewval soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated

Site symbol: Stewval soil—029X014N; Wahguyhe soil—029X010N; Pintwater soil—029X022N

240—Settlement-Aquic Calciorthids complex

Map Unit Setting

Position on landscape: Lake plains
Elevation: 4,600 to 5,100 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Settlement clay, 0 to 2 percent slopes (Aeric Halaquepts - fine, montmorillonitic (calcareous), mesic)—45 percent
Aquic Calciorthids, 0 to 2 percent slopes (Aquic Calciorthids—40 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Calciaquolls, 0 to 2 percent slopes (Typic Calciaquolls)—8 percent
Inclusion 2: Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaquepts - fine-silty, mixed (calcareous), mesic)—4 percent
Inclusion 3: Typic Torriorthents silty clay loam, 0 to 2 percent slopes (Typic Torriorthents - fine, montmorillonitic (calcareous), mesic)—3 percent

Settlement Soil

Position on landscape: Interfluves, lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Inland saltgrass, alkali sacaton, black greasewood, Baltic rush
Typical profile:
0 to 2 inches—clay; 0 to 5 percent pebbles (by weight); subangular blocky structure; very hard, very firm; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, CH; estimated AASHTO classification - A-7
2 to 11 inches—clay, silty clay; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); prismatic structure; very hard, very firm; very strongly alkaline (pH 9.4); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CH, CL; estimated AASHTO classification - A-7
11 to 60 inches or more—clay, silty clay; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; very hard, very firm; very strongly alkaline (pH 9.6); moderately saline (8 to 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CH, CL; estimated AASHTO classification - A-7
Depth to seasonal high water table: 12 to 36 inches
Hazard of flooding: Rare
Permeability: Very slow
Available water capacity: 8 to 9 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.32; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: High

Aquic Calciorthids

Position on landscape: Lower part of lake plains near drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Baltic rush, inland saltgrass
Typical profile:
0 to 5 inches—silty clay loam; granular structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6, A-7
5 to 41 inches—stratified loam to clay; massive; very hard, firm; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, CH, MH; estimated AASHTO classification - A-6, A-7
41 to 60 inches or more—clay loam; massive; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: 0 to 10 inches
Hazard of flooding: Frequency—occasional; duration—brief; months—March through September
Permeability: Slow
Available water capacity: 9 to 11 inches
Water supplying capacity: 18 inches
Runoff: Ponded
Hydrologic group: D
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—high
Potential frost action: High

Contrasting Inclusions

Inclusion 1: Position on landscape—lake plains near ponds; distinctive present vegetation—Baltic rush

Inclusion 2: Position on landscape—lake plains below and adjacent to areas of the Settlement soil; distinctive present vegetation—inland saltgrass, alkali sacaton

Inclusion 3: Position on landscape—highest part of lake plains; distinctive present vegetation—black greasewood, inland saltgrass

Major Uses

Rangeland, wildlife habitat, irrigated cropland

Potential Native Plant Community (Table 59)

Elements of Wildlife Habitat

Suitability of Settlement soil for named elements:
Grain and seed crops (irrigated)—poor
Domestic grasses and legumes (irrigated)—poor
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Wetland plants—poor
Shallow water areas—fair

Suitability of Aquic Calciorthids for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Wetland plants—good
Shallow water areas—good

TABLE 59.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Settlement	Aquic Calciorthids	1	2	3
Alkali sacaton	SPAI	15-40	15-40	15-30	15-40	15-30
Inland saltgrass	DIST	10-15	10-15	5-15	10-15	5-15
Baltic rush	JUBA	5-15	5-15	5-10	5-15	5-10
Basin wildrye	ELCI2	2-5	2-5	5-10	2-5	5-10
Giantreed	ARDO4	2-5	2-5	---	2-5	---
Alkali cordgrass	SPGR	2-5	2-5	---	2-5	---
Western wheatgrass	AGSM	---	---	1-5	---	1-5
Other perennial grasses	PPGG	10-20	10-20	8-20	10-20	8-20
Native annual grasses	AAGG	2-6	2-6	1-5	2-6	1-5
Perennial forbs	PPFF	2-6	2-6	2-8	2-6	2-8
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5
Torrey quailbush	ATTO	---	---	5-10	---	5-10
Rubber rabbitbrush	CHNA2	---	---	5-10	---	5-10
Basin big sagebrush	ARTRT*	---	---	1-5	---	1-5
Black greasewood	SAVE4	---	---	1-5	---	1-5
Other shrubs	SSSS	2-10	2-10	5-15	2-10	5-15
Site symbol		029X002N	029X002N	029X004N	029X002N	029X004N
Potential production (lb/acre):						
Favorable years		3,300	3,300	2,000	3,300	2,000
Normal years		2,200	2,200	1,400	2,200	1,400
Unfavorable years		1,000	1,000	600	1,000	600

Ratings for Selected Uses

(Settlement Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess salt, excess sodium, soil blowing
Shallow excavations: Severe—wetness
Local roads and streets: Severe—frost action, low strength, shrink-swell
Roadfill: Poor—low strength, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium
(Aquic Calciorthids)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing
Shallow excavations: Severe—wetness
Local roads and streets: Severe—low strength, wetness, shrink-swell
Roadfill: Severe—low strength, wetness, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess sodium, wetness

Interpretive Groups

Capability classification: Settlement soil—VIw, irrigated, and VIIw, nonirrigated; Aquic Calciorthids—VIIw, nonirrigated
Site symbol: Settlement soil—029X002N; Aquic Calciorthids—029X002N

250—Theriot-Kyler-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,200 to 7,000 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Theriot very gravelly sandy loam, 15 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—40 percent
Kyler very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—30 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Izo very gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Stewval very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent

Theriot Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Kyler Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, cliffrose
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—very cobbly loam, very gravelly loam; 25 to 40 percent cobbles and stones and 35 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-2, A-4
9 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Moderate

Rock Outcrop

Position on landscape: Shoulders and side slopes of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—shadscale, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—fourwing saltbush, shadscale
Inclusion 3: Position on landscape—mountainsides; distinctive features—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 60)

Elements of Wildlife Habitat

Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kyler soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, large stones, slope
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Kyler Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Theriot soil—VIIs, nonirrigated; Kyler soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Theriot soil—029X022N; Kyler soil—029X014N

TABLE 60.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Theriot	Kyler	Rock outcrop	1	2	3
Galleta	HIJA	5-20	5-15	---	5-20	---	5-15
Indian ricegrass	ORHY	5-15	5-10	---	5-15	5-10	5-10
Needlegrass	STIPA	5-10	2-10	---	5-10	---	2-10
Bottlebrush squirreltail	SIHY	2-5	1-5	---	2-5	---	1-5
Bluegrass	POA++	---	2-10	---	---	---	2-10
Other perennial grasses	PPGG	5-10	10-15	---	5-10	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	---	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	---	2-5	1-5	1-5
Shadscale	ATCO	15-25	---	---	15-25	---	---
Bailey greasewood	SAVEB	5-15	---	---	5-15	2-10	---
Nevada ephedra	EPNE	2-5	5-10	---	2-5	2-5	5-10
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	---	2-5
Black sagebrush	ARARN	---	15-20	---	---	---	15-20
Winterfat	EULA5	---	2-5	---	---	---	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	---	10-20	10-20	10-20
Site symbol		029X022N	029X014N	---	029X022N	029X041N	029X014N
Potential production (lb/acre):							
Favorable years		300	500	---	300	500	500
Normal years		200	300	---	200	300	300
Unfavorable years		100	100	---	100	100	100

251—Theriot-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 4,800 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Theriot very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—60 percent
Rock outcrop—25 percent
Contrasting inclusions as follows—
Inclusion 1: Pumel very gravelly sandy loam, 15 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—10 percent
Inclusion 2: Typic Torriorthents, 8 to 30 percent slopes (Typic Torriorthents - loamy-skeletal, carbonatic, mesic,)—5 percent

Theriot Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Anderson wolfberry, shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Ridges and crests of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides, mountainsides; distinctive present vegetation—shadscale
Inclusion 2: Position on landscape—foot slopes of hills and mountains; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 61)

Elements of Wildlife Habitat

Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Theriot soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Theriot soil—029X022N

TABLE 61.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Theriot	Rock outcrop	1	2
Galleta	HIJA	5-20	---	5-20	10-25
Indian ricegrass	ORHY	5-15	---	5-15	5-10
Needlegrass	STIPA	5-10	---	5-10	2-5
Bottlebrush squirreltail	SIHY	2-5	---	2-5	2-5
Other perennial grasses	PPGG	5-10	---	5-10	5-15
Native annual grasses	AAGG	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	---	5-10	4-10
Native annual forbs	AAFF	2-5	---	2-5	1-5
Shadscale	ATCO	15-25	---	15-25	10-25
Bailey greasewood	SAVEB	5-15	---	5-15	5-10
Nevada ephedra	EPNE	2-5	---	2-5	1-5
Bud sagebrush	ARSP5	2-5	---	2-5	5-10
Winterfat	EULA5	---	---	---	5-10
Other shrubs	SSSS	10-20	---	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2
Site symbol		029X022N	---	029X022N	029X017N
Potential production (lb/acre):					
Favorable years		300	---	300	350
Normal years		200	---	200	250
Unfavorable years		100	---	100	100

252—Theriot-Kyler-Leo association

Map Unit Setting

Position on landscape: Rock pediments, hills, alluvial fans
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Theriot very stony loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—50 percent
Kyler extremely cobbly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—20 percent
Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Izo very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Theriot Soil

Position on landscape: Side slopes of hills and rock pediment remnants
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta
Typical profile:
0 to 4 inches—very stony loam; 35 to 55 percent cobbles and stones and 20 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM, ML; estimated AASHTO classification - A-4
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Kyler Soil

Position on landscape: Side slopes of hills and rock pediment remnants
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 3 inches—extremely cobbly loam; 40 to 50 percent cobbles and stones and 60 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—very cobbly loam, very gravelly loam; 25 to 40 percent cobbles and stones and 35 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-2, A-4
9 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Moderate

Leo Soil

Position on landscape: Alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Galleta, spiny hopsage, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GM, SM; estimated AASHTO classification—A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants; distinctive present vegetation—shadscale, galleta, bud sagebrush
Inclusion 2: Position on landscape—small peaks and ridges on hills and rock pediment remnants; distinctive present vegetation—barren
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—rabbitbrush, burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 62)

Elements of Wildlife Habitat

Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kyler soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Kyler Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones, thin layer
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Theriot soil—VIIs, nonirrigated; Kyler soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated
Site symbol: Theriot soil—029X022N; Kyler soil—029X014N; Leo soil—029X046N

TABLE 62.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Theriot	Kyler	Leo	1	2	3
Galleta	HIJA	5-20	5-15	5-20	10-25	---	---
Indian ricegrass	ORHY	5-15	5-10	5-10	5-10	---	5-10
Needlegrass	STIPA	5-10	2-10	2-5	2-5	---	---
Bottlebrush squirreltail	SIHY	2-5	1-5	---	2-5	---	---
Bluegrass	POA++	---	2-10	---	---	---	---
Dropseed	SPORO	---	---	5-15	---	---	---
Other perennial grasses	PPGG	5-10	10-15	5-10	5-15	---	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	2-4
Perennial forbs	PPFF	5-10	5-10	5-7	4-10	---	2-6
Native annual forbs	AAFF	2-5	1-5	2-4	1-5	---	1-5
Shadscale	ATCO	15-25	---	---	10-25	---	---
Bailey greasewood	SAVEB	5-15	---	---	5-10	---	2-10
Nevada ephedra	EPNE	2-5	5-10	---	1-5	---	2-5
Bud sagebrush	ARSP5	2-5	2-5	5-10	5-10	---	---
Black sagebrush	ARARN	---	15-20	---	---	---	---
Winterfat	EULA5	---	2-5	5-20	5-10	---	---
Fourwing saltbush	ATCA2	---	---	10-15	---	---	5-15
Spiny hopsage	GRSP	---	---	2-8	---	---	---
Anderson wolfberry	LYAN	---	---	1-5	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-25	10-20	---	10-20
Joshua-tree	YUBR	---	---	---	1-2	---	---
Site symbol		029X022N	029X014N	029X046N	029X017N	---	029X041N
Potential production (lb/acre):							
Favorable years		300	500	450	350	---	500
Normal years		200	300	350	250	---	300
Unfavorable years		100	100	175	100	---	100

253—Theriot-Slatery-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,300 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Theriot very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—50 percent
Slatery very gravelly loam, 15 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—20 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly sandy loam, moist, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Typic Haplargids, 15 to 50 percent slopes (Typic Haplargids - clay, montmorillonitic, mesic, shallow)—2 percent

Theriot Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Nevada ephedra
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Slatery Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6
Runoff: Rapid
Hydrologic group: C

Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders and side slopes of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—mountain-valley fans; distinctive present vegetation—shadscale, spiny menodora, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush, rabbitbrush
Inclusion 3: Position on landscape—side slopes of mountains; distinctive present vegetation—shadscale, spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 63)

Elements of Wildlife Habitat

Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Theriot soil—VIIs, nonirrigated; Slatery soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Theriot soil—029X022N; Slatery soil—029X037N

TABLE 63.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Theriot	Slatery	Rock outcrop	1	2	3
Galleta	HIJA	5-20	10-20	---	5-10	---	10-20
Indian ricegrass	ORHY	5-15	2-5	---	5-20	5-10	2-5
Needlegrass	STIPA	5-10	5-10	---	---	---	5-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---	---	---
Other perennial grasses	PPGG	5-10	5-10	---	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	2-6	5-10
Native annual forbs	AAFF	2-5	2-5	---	2-5	1-5	2-5
Shadscale	ATCO	15-25	2-5	---	5-15	---	2-5
Bailey greasewood	SAVEB	5-15	5-10	---	5-15	2-10	5-10
Nevada ephedra	EPNE	2-5	5-10	---	5-10	2-5	5-10
Bud sagebrush	ARSP5	2-5	2-5	---	5-10	---	2-5
Spiny menodora	MESP2	---	10-25	---	10-30	---	10-25
Anderson wolfberry	LYAN	---	5-10	---	---	---	5-10
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	15-25	---	10-20	10-20	15-25
Site symbol		029X022N	029X037N	---	029X036N	029X041N	029X037N
Potential production (lb/acre):							
Favorable years		300	300	---	400	500	300
Normal years		200	200	---	300	300	200
Unfavorable years		100	100	---	100	100	100

254—Theriot-Rodad-Leo association

Map Unit Setting

Position on landscape: Mountains, hills, rock pediments, mountain-valley fans
Elevation: 5,200 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Theriot very gravelly sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—35 percent
Rodad very channery loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Slatery very gravelly loam, 4 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—8 percent
Inclusion 2: Rock outcrop—4 percent
Inclusion 3: Typic Torriorthents, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Theriot Soil

Position on landscape: Side slopes of hills, rock pediment remnants, and mountains
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Anderson wolfberry, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rodad Soil

Position on landscape: Side slopes of hills, rock pediment remnants, and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles and channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight

Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Leo Soil

Position on landscape: Mountain-valley fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Galleta, fourwing saltbush, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GM, SM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, rock pediment remnants; distinctive present vegetation—spiny menodora, shadscale, galleta
Inclusion 2: Position on landscape—small peaks and ridges of hills, rock pediments, and mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 64)

Elements of Wildlife Habitat

Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Theriot soil—VIIs, nonirrigated; Rodad soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated
Site symbol: Theriot soil—029X022N; Rodad soil—029X022N; Leo soil—029X046N

TABLE 64.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Theriot	Rodad	Leo	1	2	3
Galleta	HIJA	5-20	5-20	5-20	10-20	---	---
Indian ricegrass	ORHY	5-15	5-15	5-10	2-5	---	5-10
Needlegrass	STIPA	5-10	5-10	2-5	5-10	---	---
Bottlebrush squirreltail	SIHY	2-5	2-5	---	---	---	---
Dropseed	SPORO	---	---	5-15	---	---	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	---	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	2-4
Perennial forbs	PPFF	5-10	5-10	5-7	5-10	---	2-6
Native annual forbs	AAFF	2-5	2-5	2-4	2-5	---	1-5
Shadscale	ATCO	15-25	15-25	---	2-5	---	---
Bailey greasewood	SAVEB	5-15	5-15	---	5-10	---	2-10
Nevada ephedra	EPNE	2-5	2-5	---	5-10	---	2-5
Bud sagebrush	ARSP5	2-5	2-5	5-10	2-5	---	---
Fourwing saltbush	ATCA2	---	---	10-15	---	---	5-15
Winterfat	EULA5	---	---	5-20	---	---	---
Spiny hopsage	GRSP	---	---	2-8	---	---	---
Anderson wolfberry	LYAN	---	---	1-5	5-10	---	---
Spiny menodora	MESP2	---	---	---	10-25	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-25	15-25	---	10-20
Site symbol		029X022N	029X022N	029X046N	029X037N	---	029X041N
Potential production (lb/acre):							
Favorable years		300	300	450	300	---	500
Normal years		200	200	350	200	---	300
Unfavorable years		100	100	175	100	---	100

270—Lathrop-Leo association

Map Unit Setting

Position on landscape: Fan piedmonts, alluvial fans
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Lathrop very stony fine sandy loam, 4 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—50 percent
Leo very gravelly sandy loam, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Advokay gravelly coarse sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—8 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Rock outcrop—2 percent

Lathrop Soil

Position on landscape: Fan piedmont remnants, fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, Indian ricegrass, galleta
Typical profile:
0 to 5 inches—very stony fine sandy loam; 25 to 45 percent cobbles and stones and 35 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Leo Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GM, SM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium

Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—rock pediment remnants and hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, Indian ricegrass
Inclusion 2: Position on landscape—drainageways; vegetation—burrobrush, rabbitbrush
Inclusion 3: Position on landscape—shoulders and side slopes of low hills and pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 65)

Elements of Wildlife Habitat

Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, large stones
Shallow excavations: Severe—cutbanks cave, large stones
Local roads and streets: Severe—large stones
Roadfill: Poor—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—large stones, seepage
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Lathrop soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated
Site symbol: Lathrop soil—029X036N; Leo soil—029X046N

TABLE 65.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Lathrop	Leo	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-10	5-10	---
Galleta	HIJA	5-10	5-20	10-25	---	---
Dropseed	SPORO	---	5-15	---	---	---
Needlegrass	STIPA	---	2-5	2-5	---	---
Bottlebrush squirreltail	SIHY	---	---	2-5	---	---
Other perennial grasses	PPGG	5-10	5-10	5-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	---
Perennial forbs	PPFF	5-10	5-7	4-10	2-6	---
Native annual forbs	AAFF	2-5	2-4	1-5	1-5	---
Spiny menodora	MESP2	10-30	---	---	---	---
Bailey greasewood	SAVEB	5-15	---	5-10	2-10	---
Shadscale	ATCO	5-15	---	10-25	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	---
Nevada ephedra	EPNE	5-10	---	1-5	2-5	---
Fourwing saltbush	ATCA2	---	10-15	---	5-15	---
Winterfat	EULA5	---	5-20	5-10	---	---
Spiny hopsage	GRSP	---	2-8	---	---	---
Anderson wolfberry	LYAN	---	1-5	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-25	10-20	10-20	---
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		029X036N	029X046N	029X017N	029X041N	---
Potential production (lb/acre):						
Favorable years		400	450	350	500	---
Normal years		300	350	250	300	---
Unfavorable years		100	175	100	100	---

271—Lathrop-Itme association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Lathrop very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—50 percent
Itme gravelly sandy loam, dry, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Noyson very gravelly loamy sand, 2 to 4 percent slopes (Entic Durorthids - coarse-loamy, mixed, mesic)—5 percent
Inclusion 2: Stumble loamy sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent
Inclusion 3: Itme very stony loamy sand, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Nevada ephedra
Typical profile:
0 to 3 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less

than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants; distinctive present vegetation—shadscale, bud sagebrush, Indian ricegrass
Inclusion 2: Position on landscape—side slopes of drainageways; distinctive present vegetation—shadscale, fourwing saltbush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion of minor extent: Position on landscape—fan piedmonts near south end of survey area; distinctive present vegetation—creosotebush, white bursage
Inclusion of minor extent: Position on landscape—inset fans; distinctive present vegetation—spiny hopsage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 66)

Elements of Wildlife Habitat

Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave, large stones
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Lathrop soil—VIIs, nonirrigated; Itme soil—VIs, irrigated, and VIIs, nonirrigated
Site symbol: Lathrop soil—029X036N; Itme soil—029X017N

TABLE 66.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Lathrop	Itme	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-10	20-30	5-10
Galleta	HIJA	5-10	10-25	10-25	2-5	---
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	---
Needlegrass	STIPA	---	2-5	2-5	2-5	---
Dropseed	SPORO	---	---	---	5-25	---
Other perennial grasses	PPGG	5-10	5-15	5-15	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-5	2-4
Perennial forbs	PPFF	5-10	4-10	4-10	5-10	2-6
Native annual forbs	AAFF	2-5	1-5	1-5	2-5	1-5
Spiny menodora	MESP2	10-30	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-10	5-10	---	2-10
Shadscale	ATCO	5-15	10-25	10-25	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	---
Nevada ephedra	EPNE	5-10	1-5	1-5	---	2-5
Winterfat	EULA5	---	5-10	5-10	5-20	---
Fourwing saltbush	ATCA2	---	---	---	15-25	5-15
Spiny hopsage	GRSP	---	---	---	1-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	1-2	---	---
Site symbol		O29XO36N	O29XO17N	O29XO17N	O29XO12N	O29XO41N
Potential production (lb/acre):						
Favorable years		400	350	350	500	500
Normal years		300	250	250	350	300
Unfavorable years		100	100	100	200	100

272—Lathrop-Itme-Zadvar association

Map Unit Setting

Position on landscape: Alluvial fans, fan piedmonts
Elevation: 6,200 to 6,800 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 105 days

Composition

Lathrop very stony fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—40 percent
Itme gravelly loamy sand, dry, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Zadvar very gravelly sandy loam, dry, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Pumel very gravelly sandy loam, 15 to 30 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—5 percent
Inclusion 2: Lomoine very gravelly sandy loam, 15 to 30 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent
Inclusion 3: Rock outcrop—2 percent

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 5 inches—very stony fine sandy loam; 25 to 45 percent cobbles and stones and 35 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Indian ricegrass, shadscale, galleta
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less

than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Zadvar Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6
12 to 22 inches—cemented
22 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle, firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of on-fan drainageways, rock pediments adjacent to fan piedmonts; distinctive present vegetation—shadscale, Indian ricegrass
Inclusion 2: Position on landscape—side slopes of on-fan drainageways, rock pediments adjacent to fan piedmonts; distinctive present vegetation—black sagebrush, galleta, ephedra
Inclusion 3: Position on landscape—side slopes of mountains and pediments adjacent to fan piedmonts; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 67)

Elements of Wildlife Habitat

Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Zadvar soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, large stones
Shallow excavations: Severe—cutbanks cave, large stones
Local roads and streets: Severe—large stones
Roadfill: Poor—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave

TABLE 67.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Lathrop	Itme	Zadvar	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-10	5-15	5-10	---
Galleta	HIJA	5-10	10-25	5-20	5-20	5-15	---
Bottlebrush squirreltail	SIHY	---	2-5	---	2-5	1-5	---
Needlegrass	STIPA	---	2-5	5-15	5-10	2-10	---
Bluegrass	POA++	---	---	---	---	2-10	---
Other perennial grasses	PPGG	5-10	5-15	10-15	5-10	10-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	4-10	3-8	5-10	5-10	---
Native annual forbs	AAFF	2-5	1-5	2-5	2-5	1-5	---
Spiny menodora	MESP2	10-30	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-10	---	5-15	---	---
Shadscale	ATCO	5-15	10-25	---	15-25	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	2-5	2-5	---
Nevada ephedra	EPNE	5-10	1-5	2-5	2-5	5-10	---
Winterfat	EULA5	---	5-10	2-5	---	2-5	---
Black sagebrush	ARARN	---	---	20-25	---	15-20	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	---
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		029X036N	029X017N	029X008N	029X022N	029X014N	---
Potential production (lb/acre):							
Favorable years		400	350	700	300	500	---
Normal years		300	250	400	200	300	---
Unfavorable years		100	100	200	100	100	---

Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Zadvar Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Lathrop soil—VIIs, nonirrigated; Itme soil—VIIs, nonirrigated; Zadvar soil—VIIs, nonirrigated

Site symbol: Lathrop soil—029X036N; Itme soil—029X017N; Zadvar soil—029X008N

273—Lathrop-Terlco-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts, inset fans
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Lathrop very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—40 percent
Terlco very gravelly fine sandy loam, 8 to 30 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—35 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Unsel very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—5 percent

Lathrop Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, Bailey greasewood, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Terlco Soil

Position on landscape: Side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, spiny menodora, galleta
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly

saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1

19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush
Typical profile:

0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1

8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—hills and rock pediments adjacent to fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 68)

Elements of Wildlife Habitat

Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave, slope
Local roads and streets: Severe—slope
Roadfill: Fair—slope
Sand: Probable source

TABLE 68.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Lathrop	Terlco	Izo	1	2
Indian ricegrass	ORHY	5-20	5-20	5-10	5-15	5-10
Galleta	HIJA	5-10	5-10	---	5-20	10-25
Needlegrass	STIPA	---	---	---	5-10	2-5
Bottlebrush squirreltail	SIHY	---	---	---	2-5	2-5
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	2-6	5-10	4-10
Native annual forbs	AAFF	2-5	2-5	1-5	2-5	1-5
Spiny menodora	MESP2	10-30	10-30	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	2-10	5-15	5-10
Shadscale	ATCO	5-15	5-15	---	15-25	10-25
Bud sagebrush	ARSP5	5-10	5-10	---	2-5	5-10
Nevada ephedra	EPNE	5-10	5-10	2-5	2-5	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Winterfat	EULA5	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	---	1-2
Site symbol		029X036N	029X036N	029X041N	029X022N	029X017N
Potential production (lb/acre):						
Favorable years		400	400	500	300	350
Normal years		300	300	300	200	250
Unfavorable years		100	100	100	100	100

Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium

(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding

Rangeland seeding: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Lathrop soil—VIIs, nonirrigated; Terlco soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Lathrop soil—029X036N; Terlco soil—029X036N; Izo soil—029X041N

276—Lathrop-Wardenot-Lyda association

Map Unit Setting

Position on landscape: Alluvial fans, fan piedmonts
Elevation: 4,800 to 6,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Lathrop very gravelly sandy loam, 4 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—40 percent
Wardenot very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Lyda very gravelly fine sandy loam, 4 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Duric Haplargids, 4 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Durixerollic Haplargids, 15 to 30 percent slopes (Durixerollic Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Lathrop Soil

Position on landscape: Side slopes of fan-remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, Nevada ephedra, Anderson wolfberry, bud sagebrush
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Anderson wolfberry, white bursage, Nevada ephedra
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lyda Soil

Position on landscape: Summits of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, spiny menodora, Anderson wolfberry
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants; distinctive present vegetation—Joshua-tree, shadscale, Anderson wolfberry
Inclusion 2: Position on landscape—side slopes of fan-remnants; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 69)

Elements of Wildlife Habitat

Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding, slope
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—large stones, seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Lyda Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan

TABLE 69.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Lathrop	Wardenot	Lyda	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-20	5-10	5-10	5-10
Galleta	HIJA	5-10	10-25	5-10	10-15	5-15	---
Bottlebrush squirreltail	SIHY	---	2-5	---	2-5	1-5	---
Needlegrass	STIPA	---	2-5	---	---	2-10	---
Desert Needlegrass	STSP3	---	---	---	5-10	---	---
Dropseed	SPORO	---	---	---	1-5	1-5	---
Other perennial grasses	PPGG	5-10	5-15	5-10	10-15	10-20	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	4-10	5-10	5-10	5-10	2-6
Native annual forbs	AAFF	2-5	1-5	2-5	2-5	2-5	1-5
Spiny menodora	MESP2	10-30	---	10-30	---	---	---
Bailey greasewood	SAVEB	5-15	5-10	5-15	---	---	2-10
Shadscale	ATCO	5-15	10-25	5-15	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	1-3	---	---
Nevada ephedra	EPNE	5-10	1-5	5-10	5-10	2-5	2-5
Winterfat	EULA5	---	5-10	---	---	2-5	---
Anderson wolfberry	LYAN	---	---	---	5-10	---	---
Fourwing saltbush	ATCA2	---	---	---	2-5	5-10	5-15
Spiny hopsage	GRSP	---	---	---	1-5	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	1-3	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	15-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-25	10-20
Joshua-tree	YUBR	---	1-2	---	5-15	---	---
Site symbol		O29XO36N	O29XO17N	O29XO36N	O29XO07N	O29XO06N	O29XO41N
Potential production (lb/acre):							
Favorable years		400	350	400	800	800	500
Normal years		300	250	300	500	500	300
Unfavorable years		100	100	100	300	300	100

Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Lathrop soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Lyda soil—VIIs, nonirrigated

Site symbol: Lathrop soil—029X036N; Wardenot soil—029X017N; Lyda soil—029X036N

278—Lathrop-Belted-Veet association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 6,000 to 8,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Lathrop very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—45 percent
Belted very cobbly sandy loam, 2 to 8 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—30 percent
Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—10 percent
Contrasting inclusions as follows—
Inclusion 1: Durixerollic Haplargids very cobbly loam, 8 to 30 percent slopes (Durixerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 2: Handpah very cobbly fine sandy loam, 2 to 8 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—4 percent
Inclusion 3: Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 4: Xeric Torrifluvents, 2 to 8 percent slopes (Xeric Torrifluvents - sandy-skeletal, mixed, mesic)—3 percent

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belted Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 6 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 40 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
6 to 13 inches—gravelly loam, gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated

Unified classification - SC; estimated AASHTO classification - A-6
13 to 25 inches—cemented
25 to 60 inches or more—very gravelly coarse sand, extremely gravelly coarse sand; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1

Range in depth to cemented layer: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1 to 2 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Veet Soil

Position on landscape: Alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—higher areas of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—Douglas rabbitbrush, fourwing saltbush
Inclusion 4: Position on landscape—drainageways, inset fans; distinctive present vegetation—basin big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 70)

Elements of Wildlife Habitat

Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Belted soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones

TABLE 70.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Lathrop	Belted	Veet	1	2	3	4
Indian ricegrass	ORHY	5-20	5-20	5-15	5-10	5-10	5-10	2-5
Galleta	HIJA	5-10	5-10	5-25	5-15	5-15	5-20	1-3
Needlegrass	STIPA	---	---	5-15	2-10	2-10	2-5	---
Dropseed	SPORO	---	---	5-15	1-5	1-5	5-15	---
Bottlebrush squirreltail	SIHY	---	---	1-5	1-5	1-5	---	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-20	10-20	10-20	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	3-10	5-10	5-10	5-7	5-10
Native annual forbs	AAFF	2-5	2-5	2-5	2-5	2-5	2-4	1-5
Spiny menodora	MESP2	10-30	10-30	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	---	---	---	---	---
Shadscale	ATCO	5-15	5-15	---	---	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	---	5-10	---
Nevada ephedra	EPNE	5-10	5-10	---	2-5	2-5	---	1-5
Wyoming big sagebrush	ARTRW*	---	---	15-20	15-20	15-20	---	---
Spiny hopsage	GRSP	---	---	5-10	2-5	2-5	2-8	---
Winterfat	EULA5	---	---	2-10	2-5	2-5	5-20	---
Fourwing saltbush	ATCA2	---	---	---	5-10	5-10	10-15	---
Anderson wolfberry	LYAN	---	---	---	---	---	1-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-25	10-25	10-25
Site symbol		029X036N	029X036N	029X049N	029X006N	029X006N	029X046N	029X009N
Potential production (lb/acre):								
Favorable years		400	400	900	800	800	450	700
Normal years		300	300	600	500	500	350	500
Unfavorable years		100	100	300	300	300	175	200

Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones

(Belted Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Lathrop soil—VIIs, nonirrigated; Belted soil—VIIs, nonirrigated; Veet soil—VIIs, nonirrigated
Site symbol: Lathrop soil—029X036N; Belted soil—029X036N; Veet soil—029X049N

280—Tognoni-Blacktop association

Map Unit Setting

Position on landscape: Mountains, mesas
Elevation: 5,500 to 6,300 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Tognoni extremely cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Tognoni very cobbly fine sandy loam, 2 to 15 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Blacktop very stony fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Haplargids, 0 to 4 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Rock outcrop—3 percent
Inclusion 3: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Tognoni, Extremely Cobbly, Soil

Position on landscape: Side slopes of mountains and mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Indian ricegrass, bud sagebrush
Typical profile:
0 to 4 inches—extremely cobbly fine sandy loam; 40 to 55 percent cobbles and stones and 60 to 80 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
4 to 14 inches—very cobbly clay loam, extremely cobbly clay; 30 to 55 percent cobbles and stones and 45 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
14 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Tognoni, Very Cobbly, Soil

Position on landscape: Summits of mountains and mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 14 inches—very cobbly clay loam, extremely cobbly clay; 30 to 55 percent cobbles and stones and 45 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
14 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Blacktop Soil

Position on landscape: Side slopes of mesas and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very stony fine sandy loam; 25 to 45 percent cobbles and stones and 40 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of mountains and mesas; distinctive present vegetation—shadscale, galleta, bud sagebrush
Inclusion 2: Position on landscape—shoulders and rimrock of mesas and mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, Douglas rabbitbrush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 71)

Elements of Wildlife Habitat

Suitability of Tognoni, extremely cobbly, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Tognoni, very cobbly, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tognoni, Extremely Cobbly, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, large stones, slope
Local roads and streets: Severe—depth to rock, large stones, slope
Roadfill: Poor—depth to rock, large stones, slope
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—large stones
(Tognoni, Very Cobbly, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, large stones
Local roads and streets: Severe—depth to rock, large stones
Roadfill: Poor—depth to rock, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—large stones
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

TABLE 71.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tognoni, extremely cobbly	Tognoni, very cobbly	Blacktop	1	2	3
Galleta	HIJA	5-15	5-15	---	10-25	---	---
Indian ricegrass	ORHY	5-10	5-10	2-5	5-10	---	5-10
Needlegrass	STIPA	5-10	5-10	---	2-5	---	---
King desertgrass	BLKI	---	---	1-2	---	---	---
Bottlebrush squirreltail	SIHY	---	---	1-2	2-5	---	---
Other perennial grasses	PPGG	10-15	10-15	1-5	5-15	---	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	2-4
Perennial forbs	PPFF	5-10	5-10	2-5	4-10	---	2-6
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	---	1-5
Shadscale	ATCO	15-20	15-20	40-60	10-25	---	---
Nevada ephedra	EPNE	5-10	5-10	---	1-5	---	2-5
Anderson wolfberry	LYAN	5-10	5-10	---	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	5-10	---	---
Nevada dalea	DAPO2	2-5	2-5	5-10	---	---	---
Bailey greasewood	SAVEB	---	---	10-15	5-10	---	2-10
Cooper wolfberry	LYCO2	---	---	2-5	---	---	2-5
Winterfat	EULA5	---	---	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	5-15	10-20	---	10-20
Joshua-tree	YUBR	---	---	---	1-2	---	---
Site symbol		029X031N	029X031N	029X033N	029X017N	---	029X041N
Potential production (lb/acre):							
Favorable years		400	400	100	350	---	500
Normal years		250	250	50	250	---	300
Unfavorable years		150	150	25	100	---	100

Interpretive Groups

Capability classification: Tognoni, extremely cobbly, soil—VIIs, nonirrigated; Tognoni, very cobbly, soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated

Site symbol: Tognoni, extremely cobbly, soil—029X031N; Tognoni, very cobbly, soil—029X031N; Blacktop soil—029X033N

281—Tognoni-Blacktop-Downeyville association

Map Unit Setting

Position on landscape: Hills, mesas
Elevation: 5,300 to 5,900 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Tognoni very cobbly fine sandy loam, 4 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Blacktop very gravelly sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—25 percent
Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—8 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Stumble fine sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—2 percent

Tognoni Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Bailey greasewood
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 14 inches—very cobbly clay loam, extremely cobbly clay; 30 to 55 percent cobbles and stones and 45 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
14 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Side slopes of hills and mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Bailey greasewood
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Downeyville Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock

Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—adjacent alluvial fans and inset fans; distinctive present vegetation—shadscale, Bailey greasewood, Indian ricegrass
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, Douglas rabbitbrush
Inclusion 3: Position on landscape—sand sheets on side slopes of hills; distinctive present vegetation—dalea, littleleaf horsebrush, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 72)

Elements of Wildlife Habitat

Suitability of Tognoni soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tognoni Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, large stones, slope
Local roads and streets: Severe—large stones, depth to rock, slope
Roadfill: Poor—depth to rock, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—large stones
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Tognoni soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated
Site symbol: Tognoni soil—029X031N; Blacktop soil—029X033N; Downeyville soil—029X022N

TABLE 72.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tognoni	Blacktop	Downeyville	1	2	3
Galleta	HIJA	5-15	---	5-20	10-25	---	2-5
Indian ricegrass	ORHY	5-10	2-5	5-15	5-10	5-10	20-30
Needlegrass	STIPA	5-10	---	5-10	2-5	---	2-5
King desertgrass	BLKI	---	1-2	---	---	---	---
Bottlebrush squirreltail	SIHY	---	1-2	2-5	2-5	---	---
Dropseed	SPORO	---	---	---	---	---	5-25
Other perennial grasses	PPGG	10-15	1-5	5-10	5-15	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	2-5
Perennial forbs	PPFF	5-10	2-5	5-10	4-10	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	1-5	2-5
Shadscale	ATCO	15-20	40-60	15-25	10-25	---	---
Nevada ephedra	EPNE	5-10	---	2-5	1-5	2-5	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	5-10	---	5-10
Nevada dalea	DAPO2	2-5	5-10	---	---	---	---
Bailey greasewood	SAVEB	---	10-15	5-15	5-10	2-10	---
Cooper wolfberry	LYCO2	---	2-5	---	---	2-5	---
Winterfat	EULA5	---	---	---	5-10	---	5-20
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	15-25
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Spiny hopsage	GRSP	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	5-15	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2	---	---
Site symbol		O29XO31N	O29XO33N	O29XO22N	O29XO17N	O29XO41N	O29XO12N
Potential production (lb/acre):							
Favorable years		400	100	300	350	500	500
Normal years		250	50	200	250	300	350
Unfavorable years		150	25	100	100	100	200

282—Tognoni-Gabbvally-Malmesa association

Map Unit Setting

Position on landscape: Hills, mesas
Elevation: 5,300 to 6,400 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Tognoni extremely cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Gabbvally very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Malmesa very gravelly sandy loam, 2 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—6 percent
Inclusion 2: Downeyville very cobbly sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Rock outcrop—4 percent

Tognoni Soil

Position on landscape: Summits and side slopes of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, desert needlegrass, galleta, wolfberry
Typical profile:
0 to 4 inches—extremely cobbly fine sandy loam; 40 to 55 percent cobbles and stones and 60 to 80 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
4 to 14 inches—very cobbly clay loam, extremely cobbly clay; 30 to 55 percent cobbles and stones and 45 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
14 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gabbvally Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra, needlegrass
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—6
Hazard of erosion: By water—moderate; by wind—moderate
Shrink-swell potential: Low

Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Malmesa Soil

Position on landscape: Ridges and summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra, needlegrass
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans adjacent to hills and mesas; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—shadscale, galleta
Inclusion 3: Position on landscape—ridge breaks and eroded side slopes of mesas and hills; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 73)

Elements of Wildlife Habitat

Suitability of Tognoni soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Tognoni Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, large stones, slope
Local roads and streets: Severe—depth to rock, large stones, slope
Roadfill: Poor—depth to rock, large stones, slope
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—large stones
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Malmesa Soil)
Suitability and limitations for the following uses:

TABLE 73.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tognoni	Gabbvally	Malmesa	1	2	3
Galleta	HIJA	5-15	5-15	5-15	1-3	5-20	---
Indian ricegrass	ORHY	5-10	5-10	5-10	2-5	5-15	---
Needlegrass	STIPA	5-10	5-10	5-10	---	5-10	---
Bottlebrush squirreltail	SIHY	---	1-4	1-4	---	2-5	---
Dropseed	SPORO	---	1-5	1-5	---	---	---
Basin wildrye	ELCI2	---	---	---	2-5	---	---
Other perennial grasses	PPGG	10-15	5-20	5-20	5-10	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	4-10	4-10	5-10	5-10	---
Native annual forbs	AAFF	2-5	2-7	2-7	1-5	2-5	---
Shadscale	ATCO	15-20	---	---	---	15-25	---
Nevada ephedra	EPNE	5-10	5-10	5-10	1-5	2-5	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Bud sagebrush	ARSP5	2-5	---	---	---	2-5	---
Nevada dalea	DAPO2	2-5	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	20-30	20-30	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---
Bailey greasewood	SAVEB	---	---	---	---	5-15	---
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-20	---
Site symbol		029X031N	029X010N	029X010N	029X009N	029X022N	---
Potential production (lb/acre):							
Favorable years		400	600	600	700	300	---
Normal years		250	400	400	500	200	---
Unfavorable years		150	200	200	200	100	---

Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Tognoni soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Malmesa soil—VIIs, nonirrigated
Site symbol: Tognoni soil—029X031N; Gabbvally soil—029X010N; Malmesa soil—029X010N

290—Pumel-Rock outcrop-Itme association

Map Unit Setting

Position on landscape: Hills, fan piedmonts
Elevation: 4,900 to 5,500 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 140 days

Composition

Pumel very gravelly sandy loam, 8 to 15 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—40 percent
Rock outcrop—30 percent
Itme gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Itme very gravelly sandy loam, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Lomoine very gravelly sandy loam, 8 to 15 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent

Pumel Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Bailey greasewood, Anderson wolfberry, shadscale, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Ridges, crests, and side slopes of rolling hills
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Itme Soil

Position on landscape: Fan piedmonts
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, Anderson wolfberry, galleta, shadscale
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—rabbitbrush, burrobrush, shadscale
Inclusion 2: Position on landscape—north-facing higher hillsides; distinctive present vegetation—black sagebrush, bottlebrush squirreltail, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 74)

Elements of Wildlife Habitat

Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pumel Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Pumel soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Itme soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Pumel soil—029X022N; Itme soil—029X017N

TABLE 74.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Pumel	Rock outcrop	Itme	1	2
Galleta	HIJA	5-20	---	10-25	---	5-15
Indian ricegrass	ORHY	5-15	---	5-10	5-10	5-10
Needlegrass	STIPA	5-10	---	2-5	---	2-10
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	1-5
Bluegrass	POA++	---	---	---	---	2-10
Other perennial grasses	PPGG	5-10	---	5-15	5-10	10-15
Native annual grasses	AAGG	1-5	---	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	---	4-10	2-6	5-10
Native annual forbs	AAFF	2-5	---	1-5	1-5	1-5
Shadscale	ATCO	15-25	---	10-25	---	---
Bailey greasewood	SAVEB	5-15	---	5-10	2-10	---
Nevada ephedra	EPNE	2-5	---	1-5	2-5	5-10
Bud sagebrush	ARSP5	2-5	---	5-10	---	2-5
Winterfat	EULA5	---	---	5-10	---	2-5
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Black sagebrush	ARARN	---	---	---	---	15-20
Other shrubs	SSSS	10-20	---	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		029X022N	---	029X017N	029X041N	029X014N
Potential production (lb/acre):						
Favorable years		300	---	350	500	500
Normal years		200	---	250	300	300
Unfavorable years		100	---	100	100	100

291—Pumel-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 4,200 to 5,800 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Pumel very gravelly sandy loam, 15 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—40 percent
Rock outcrop—25 percent
Pumel very gravelly sandy loam, 50 to 75 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Haplargids, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, thermic, shallow)—9 percent
Inclusion 2: Typic Torriorthents very cobbly sandy loam, 30 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—4 percent
Inclusion 3: Armoine very gravelly sandy loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—1 percent
Inclusion 4: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Pumel, Steep, Soil

Position on landscape: Side slopes and summits of hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, wolfberry, desert needlegrass, Fremont dalea
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Ridges and peaks of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Pumel, Very Steep, Soil

Position on landscape: Side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, wolfberry
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountains; distinctive present vegetation—spiny menodora, shadscale
Inclusion 2: Position on landscape—stable areas on summits and side slopes of hills; distinctive present vegetation—creosotebush
Inclusion 3: Position on landscape—higher hillsides and mountainsides; distinctive present vegetation—black sagebrush
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 75)

Elements of Wildlife Habitat

Suitability of Pumel, steep, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pumel, very steep, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pumel, Steep, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pumel, Very Steep, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Pumel, steep, soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Pumel, very steep, soil—VIIs, nonirrigated
Site symbol: Pumel, steep, soil—029X022N; Pumel, very steep, soil—029X022N

TABLE 75.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Pumel, steep	Rock outcrop	Pumel, very steep	1	2	3	4
Galleta	HIJA	5-20	---	5-20	---	10-20	5-15	---
Indian ricegrass	ORHY	5-15	---	5-15	1-5	2-5	5-10	5-10
Needlegrass	STIPA	5-10	---	5-10	3-5	5-10	2-10	---
Bottlebrush squirreltail	SIHY	2-5	---	2-5	1-2	---	1-5	---
Bluegrass	POA++	---	---	---	---	---	2-10	---
Other perennial grasses	PPGG	5-10	---	5-10	2-5	5-10	10-15	5-10
Native annual grasses	AAGG	1-5	---	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	---	5-10	5-7	5-10	5-10	2-6
Native annual forbs	AAFF	2-5	---	2-5	3-6	2-5	1-5	1-5
Shadscale	ATCO	15-25	---	15-25	20-40	2-5	---	---
Bailey greasewood	SAVEB	5-15	---	5-15	---	5-10	---	2-10
Nevada ephedra	EPNE	2-5	---	2-5	5-10	5-10	5-10	2-5
Bud sagebrush	ARSP5	2-5	---	2-5	---	2-5	2-5	---
Anderson wolfberry	LYAN	---	---	---	5-10	5-10	---	---
White bursage	FRDU	---	---	---	2-5	---	---	---
Spiny menodora	MESP2	---	---	---	2-5	10-25	---	---
Black sagebrush	ARARN	---	---	---	---	---	15-20	---
Winterfat	EULA5	---	---	---	---	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	---	10-20	10-20	15-25	10-20	10-20
Site symbol		O29XO22N	---	O29XO22N	O30XO44N	O29XO37N	O29XO14N	O29XO41N
Potential production (lb/acre):								
Favorable years		300	---	300	250	300	500	500
Normal years		200	---	200	150	200	300	300
Unfavorable years		100	---	100	50	100	100	100

294—Pumel-Upspring association

Map Unit Setting

Position on landscape: Hillsides
Elevation: 4,000 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 57 degrees F
Frost-free season—about 135 days

Composition

Pumel very gravelly sandy loam, 8 to 30 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—50 percent
Upspring very gravelly loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Blappert very gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—6 percent
Inclusion 2: Rock outcrop—6 percent
Inclusion 3: Yermo very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—3 percent

Pumel Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Upspring Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Cresotebush, white bursage, shadscale
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 65 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—very gravelly fine sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
12 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stable areas on hillsides; distinctive present vegetation—spiny menodora

Inclusion 2: Position on landscape—small peaks and ridges of hills; distinctive present vegetation—barren

Inclusion 3: Position on landscape—inset fans adjacent to hills; distinctive present vegetation—cresotebush, shadscale, white bursage

Inclusion of minor extent: Position of landscape—hillsides in lower Tule Canyon, near the state line; distinctive present vegetation—cresotebush, shadscale, white bursage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 76)

Elements of Wildlife Habitat

Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Upspring soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 76.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Pumel	Upspring	1	2	3
Galleta	HIJA	5-20	---	10-20	---	---
Indian ricegrass	ORHY	5-15	1-5	2-5	---	2-5
Bottlebrush squirreltail	SIHY	2-5	1-2	---	---	1-3
Other perennial grasses	PPGG	5-10	2-5	5-10	---	2-5
Perennial forbs	PPFF	5-10	5-7	5-10	---	3-10
Native annual forbs	AAFF	2-5	3-6	2-5	---	3-7
Shadscale	ATCO	15-25	20-40	2-5	---	5-25
Bailey greasewood	SAVEB	5-15	---	5-10	---	---
Nevada ephedra	EPNE	2-5	5-10	5-10	---	3-8
Bud sagebrush	ARSP5	2-5	---	2-5	---	---
Anderson wolfberry	LYAN	---	5-10	5-10	---	5-10
White bursage	FRDU	---	2-5	---	---	5-10
Spiny menodora	MESP2	---	2-5	10-25	---	1-5
Creosotebush	LADI2	---	---	---	---	5-10
Bud sagebrush	ARSP3	---	---	---	---	3-10
Other shrubs	SSSS	10-20	10-20	15-25	---	10-25
Site symbol		029X022N	030X044N	029X037N	---	030X061N
Potential production (lb/acre):						
Favorable years		300	250	300	---	300
Normal years		200	150	200	---	180
Unfavorable years		100	50	100	---	80

Ratings for Selected Uses

(Pumel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Upspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—thin layer
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—thin layer, seepage

Interpretive Groups

Capability classification: Pumel soil—VIIs, nonirrigated; Upspring soil—VIIs, nonirrigated
Site symbol: Pumel soil—029X022N; Upspring soil—029X044N

295—Pumel-Thike-Rock outcrop association

Map Unit Setting

Position on landscape: Side slopes of hills and mountains
Elevation: 5,600 to 6,600 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 115 days

Composition

Pumel very gravelly sandy loam, 15 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—40 percent
Thike very cobbly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Armoine very gravelly sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Blappert very gravelly coarse sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Itme very stony loamy sand, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Pumel Soil

Position on landscape: Lower and south-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, Anderson wolfberry, rabbitbrush
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Thike Soil

Position on landscape: Higher and north-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra, desert needlegrass, rabbitbrush
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 8 inches—very cobbly loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam; 25 to 55 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
8 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.2 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Shoulders and side slopes of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—north-facing side slopes, near rock outcroppings on hills and mountains; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—stable areas on south-facing side slopes of hills and mountains; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—inset fans and drainageways adjacent to hills and mountains; distinctive present vegetation—shadscale, burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 77)

Elements of Wildlife Habitat

Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Thike soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pumel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Thike Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones

Interpretive Groups

Capability classification: Pumel soil—VIIs, nonirrigated; Thike soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Pumel soil—029X022N; Thike soil—029X010N

TABLE 77.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Pumel	Thike	Rock outcrop	1	2	3
Galleta	HIJA	5-20	5-15	---	5-15	10-20	---
Indian ricegrass	ORHY	5-15	5-10	---	5-10	2-5	5-10
Needlegrass	STIPA	5-10	5-10	---	2-10	5-10	---
Bottlebrush squirreltail	SIHY	2-5	1-4	---	1-5	---	---
Dropseed	SPORO	---	1-5	---	---	---	---
Bluegrass	POA++	---	---	---	2-10	---	---
Other perennial grasses	PPGG	5-10	5-20	---	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	4-10	---	5-10	5-10	2-6
Native annual forbs	AAFF	2-5	2-7	---	1-5	2-5	1-5
Shadscale	ATCO	15-25	---	---	---	2-5	---
Bailey greasewood	SAVEB	5-15	---	---	---	5-10	2-10
Nevada ephedra	EPNE	2-5	5-10	---	5-10	5-10	2-5
Bud sagebrush	ARSP5	2-5	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---	---
Black sagebrush	ARARN	---	---	---	15-20	---	---
Winterfat	EULA5	---	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	---	---	10-25	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	---	10-20	15-25	10-20
Site symbol		029X022N	029X010N	---	029X014N	029X037N	029X041N
Potential production (lb/acre):							
Favorable years		300	600	---	500	300	500
Normal years		400	---	---	300	200	300
Unfavorable years		100	200	---	100	100	100

300—Itme association, sandy surface

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,900 to 5,700 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Itme gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—60 percent
Itme very stony loamy sand, 2 to 4 percent slopes, occasionally flooded (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Contrasting inclusion as follows—
Inclusion 1: Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—10 percent

Itme, Dry, Soil

Position on landscape: Fan piedmonts
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, ephedra, Bailey greasewood
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme, Occasionally Flooded, Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Rabbitbrush, shadscale, burrobrush
Typical profile:
0 to 3 inches—very stony loamy sand; 15 to 30 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly coarse sand, very gravelly sand, very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—very gravelly loamy coarse sand; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—November through August
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusion

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—Bailey greasewood, shadscale, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 78)

Elements of Wildlife Habitat

Suitability of Itme, dry, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Itme, occasionally flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 78.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions		
		Component name		Inclusion number--
		Itme, dry	Itme, occasionally flooded	1
Galleta	HIJA	10-25	---	10-25
Indian ricegrass	ORHY	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	---	2-5
Needlegrass	STIPA	2-5	---	2-5
Other perennial grasses	PPGG	5-15	5-10	5-15
Native annual grasses	AAGG	1-5	2-4	1-5
Perennial forbs	PPFF	4-10	2-6	4-10
Native annual forbs	AAFF	1-5	1-5	1-5
Shadscale	ATCO	10-25	---	10-25
Bailey greasewood	SAVEB	5-10	2-10	5-10
Bud sagebrush	ARSP5	5-10	---	5-10
Winterfat	EULA5	5-10	---	5-10
Nevada ephedra	EPNE	1-5	2-5	1-5
Rubber rabbitbrush	CHNA2	---	10-25	---
Fourwing saltbush	ATCA2	---	5-15	---
Burrobrush	HYMEN3	---	5-10	---
Littleleaf horsebrush	TEGL	---	5-10	---
Cooper wolfberry	LYCO2	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	1-2
Site symbol		O29XO17N	O29XO41N	O29XO17N
Potential production (lb/acre):				
Favorable years		350	500	350
Normal years		250	300	250
Unfavorable years		100	100	100

Ratings for Selected Uses

(Itme, Dry, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty,too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Itme, Occasionally Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Itme, dry, soil—IVs, irrigated, and VIIs, nonirrigated; Itme, occasionally flooded, soil—VIIw, nonirrigated
Site symbol: Itme, dry, soil—029X017N; Itme, occasionally flooded, soil—029X041N

301—Itme very stony loamy sand, 8 to 15 percent slopes, occasionally flooded

Map Unit Setting

Position on landscape: Alluvial fans
Elevation: 4,800 to 5,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Itme very stony loamy sand, 8 to 15 percent slopes, occasionally flooded (Typic Torriorthents - sandy-skeletal, mixed, mesic)—90 percent
Contrasting inclusion as follows—
Inclusion 1: Itme gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent

Itme Soil

Position on landscape: Alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Rabbitbrush, shadscale, Nevada ephedra, burrobrush
Typical profile:
0 to 3 inches—very stony loamy sand; 15 to 30 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly coarse sand, very gravelly sand, very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—very gravelly loamy coarse sand; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—November through August
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusion

Inclusion 1: Position on landscape—fan piedmonts adjacent to alluvial fans; distinctive present vegetation—Bailey greasewood, shadscale, Nevada ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 79)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: VIIw, nonirrigated
Site symbol: 029X041N

TABLE 79.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions	
		Component name	Inclusion number--
		Itme	1
Indian ricegrass	ORHY	5-10	5-10
Galleta	HIJA	---	10-25
Bottlebrush squirreltail	SIHY	---	2-5
Needlegrass	STIPA	---	2-5
Other perennial grasses	PPGG	5-10	5-15
Native annual grasses	AAGG	2-4	1-5
Perennial forbs	PPFF	2-6	4-10
Native annual forbs	AAFF	1-5	1-5
Rubber rabbitbrush	CHNA2	10-25	---
Fourwing saltbush	ATCA2	5-15	---
Burrobrush	HYMEN3	5-10	---
Littleleaf horsebrush	TEGL	5-10	---
Bailey greasewood	SAVEB	2-10	5-10
Nevada ephedra	EPNE	2-5	1-5
Cooper wolfberry	LYCO2	2-5	---
Shadscale	ATCO	---	10-25
Bud sagebrush	ARSP5	---	5-10
Winterfat	EULA5	---	5-10
Other shrubs	SSSS	10-20	10-20
Joshua-tree	YUBR	---	1-2
Site symbol		029X041N	029X017N
Potential production (lb/acre):			
Favorable years		500	350
Normal years		300	250
Unfavorable years		100	100

302—Itme-Luning-Wardenot association

Map Unit Setting

Position on landscape: Alluvial fans, fan piedmonts
Elevation: 4,800 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Itme very stony loamy sand, 2 to 8 percent slopes, occasionally flooded (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Luning gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—35 percent
Wardenot very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusion as follows—
Inclusion 1: Itme gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent

Itme Soil

Position on landscape: Alluvial fans, drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush
Typical profile:
0 to 3 inches—very stony loamy sand; 15 to 30 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly coarse sand, very gravelly sand, very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—very gravelly loamy coarse sand; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—November through August
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Luning Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 60 inches or more—stratified sandy loam to very gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Fan piedmonts, alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, galleta
Typical profile:

0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1

7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusion

Inclusion 1: Position on landscape—fan piedmonts; distinctive present vegetation—shadscale, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 80)

Elements of Wildlife Habitat

Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Luning Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Itme soil—VIIw, nonirrigated; Luning soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Itme soil—029X041N; Luning soil—027X060N; Wardenot soil—029X036N

TABLE 80.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name			Inclusion number--
		Itme	Luning	Wardenot	1
Indian ricegrass	ORHY	5-10	30-50	5-20	5-10
Galleta	HIJA	---	---	5-10	10-25
Bottlebrush squirreltail	SIHY	---	---	---	2-5
Needlegrass	STIPA	---	---	---	2-5
Other perennial grasses	PPGG	5-10	2-5	5-10	5-15
Native annual grasses	AAGG	2-4	---	1-5	1-5
Globemallow	SPHAE	---	1-3	---	---
Birdcage eveningprimrose	OEDE2	---	1-3	---	---
Other perennial forbs	PPFF	2-6	2-5	5-10	4-10
Native annual forbs	AAFF	1-5	---	2-5	1-5
Rubber rabbitbrush	CHNA2	10-25	---	---	---
Fourwing saltbush	ATCA2	5-15	15-30	---	---
Burrobrush	HYMEN3	5-10	---	---	---
Littleleaf horsebrush	TEGL	5-10	---	---	---
Bailey greasewood	SAVEB	2-10	---	5-15	5-10
Nevada ephedra	EPNE	2-5	---	5-10	1-5
Cooper wolfberry	LYCO2	2-5	10-20	---	---
Nevada dalea	DAPO2	---	5-10	---	---
Spiny menodora	MESP2	---	---	10-30	---
Shadscale	ATCO	---	---	5-15	10-25
Bud sagebrush	ARSP5	---	---	5-10	5-10
Winterfat	EULA5	---	---	---	5-10
Other shrubs	SSSS	10-20	2-15	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2
Site symbol		029X041N	027X060N	029X036N	029X017N
Potential production (lb/acre):					
Favorable years		500	400	400	350
Normal years		300	200	300	250
Unfavorable years		100	100	100	100

304—Itme association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Itme gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—50 percent
Itme very stony loamy sand, 2 to 8 percent slopes, occasionally flooded (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Annaw very gravelly sandy loam, moist, 2 to 15 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—4 percent

Itme, Rarely Flooded, Soil

Position on landscape: Fan piedmonts
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, shadscale, winterfat, fourwing saltbush, spiny hopsage
Typical profile:
0 to 3 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme, Occasionally Flooded, Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, dalea, spiny hopsage, shadscale, Anderson wolfberry
Typical profile:
0 to 3 inches—very stony loamy sand; 15 to 30 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly coarse sand, very gravelly sand, very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—very gravelly loamy coarse sand; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—November through August
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow

Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stream terraces adjacent to fan piedmonts; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 81)

Elements of Wildlife Habitat

Suitability of ltme, rarely flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of ltme, occasionally flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(ltme, Rarely Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(ltme, Occasionally Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: ltme, rarely flooded, soil—IVs, irrigated, and VIIs, nonirrigated; ltme, occasionally flooded, soil—VIIw, nonirrigated
Site symbol: ltme, rarely flooded, soil—029X016N; ltme, occasionally flooded, soil—029X041N

TABLE 81.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Itme, rarely flooded	Itme, occasionally flooded	1	2	3
Galleta	HIJA	5-20	---	---	5-10	5-10
Indian ricegrass	ORHY	5-20	5-10	---	5-20	5-20
Basin wildrye	ELCI2	---	---	10-20	---	---
Western wheatgrass	AGSM	---	---	5-10	---	---
Needlegrass	STIPA	---	---	5-20	---	---
Other perennial grasses	PPGG	5-15	5-10	10-20	5-10	5-10
Native annual grasses	AAGG	2-5	2-4	---	1-5	1-5
Perennial forbs	PPFF	5-10	2-6	2-10	5-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	2-5
Spiny hopsage	GRSP	10-20	---	---	---	---
Bud sagebrush	ARSP5	5-15	---	---	5-10	5-10
Anderson wolfberry	LYAN	5-15	---	---	---	---
Fremont dalea	DAFR	2-10	---	---	---	---
Nevada dalea	DAPO2	2-10	---	---	---	---
Cooper wolfberry	LYCO2	2-5	2-5	---	---	---
Nevada ephedra	EPNE	2-5	2-5	---	5-10	5-10
Rubber rabbitbrush	CHNA2	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	5-15	---	---	---
Burrobrush	HYMEN3	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---	---
Bailey greasewood	SAVEB	---	2-10	---	5-15	5-15
Basin big sagebrush	ARTRT*	---	---	5-20	---	---
Green ephedra	EPVI	---	---	1-5	---	---
Bitterbrush	PURSH	---	---	1-5	---	---
Mexican cliffrose	COME5	---	---	1-5	---	---
Spiny menodora	MESP2	---	---	---	10-30	10-30
Shadscale	ATCO	---	---	---	5-15	5-15
Curlleaf mountainmahogany	CELE3	---	---	1-2	---	---
Other shrubs	SSSS	10-20	10-20	10-15	10-20	10-20
Joshua-tree	YUBR	0-2	---	---	---	---
Common chokecherry	PRVI	---	---	2-4	---	---
Willow	SALIX	---	---	1-3	---	---
Singleleaf pinyon	PIMO	---	---	1-2	---	---
Utah juniper	JUOS	---	---	1-2	---	---
Site symbol		029X016N	029X041N	029X005N	029X036N	029X036N
Potential production (lb/acre):						
Favorable years		400	500	900	400	400
Normal years		300	300	500	300	300
Unfavorable years		200	100	300	100	100

310—Gynelle-Oricto association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 55 degrees F
Frost-free season—about 145 days

Composition

Gynelle very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—45 percent
Oricto very cobbly fine sandy loam, 0 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Stonell very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—6 percent
Inclusion 3: Izo very gravelly sand, 0 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Gynelle Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 55 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate

Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—higher fan piedmont remnants; distinctive present vegetation—shadscale
Inclusion 2: Position on landscape—fan skirts and alluvial flats adjacent to fan piedmonts; distinctive present vegetation—black greasewood
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 82)

Elements of Wildlife Habitat

Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt

Interpretive Groups

Capability classification: Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated
Site symbol: Gynelle soil—027X043N; Oricto soil—029X032N

TABLE 82.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Gynelle	Oricto	1	2	3
Indian ricegrass	ORHY	10-20	1-10	5-10	---	5-10
Bottlebrush squirreltail	SIHY	5-10	---	2-5	---	---
King desertgrass	BLKI	---	1-2	---	---	---
Galleta	HIJA	---	---	10-25	---	---
Needlegrass	STIPA	---	---	2-5	---	---
Inland saltgrass	DIST	---	---	---	5-10	---
Other perennial grasses	PPGG	5-10	5-10	5-15	5-15	5-10
Native annual grasses	AAGG	---	1-5	1-5	---	2-4
Perennial forbs	PPFF	3-7	5-10	4-10	3-7	2-6
Native annual forbs	AAFF	2-5	2-5	1-5	---	1-5
Shadscale	ATCO	10-20	20-40	10-25	2-10	---
Cooper wolfberry	LYCO2	5-20	5-15	---	---	2-5
Bailey greasewood	SAVEB	5-10	10-15	5-10	---	2-10
Bud sagebrush	ARSP5	---	---	5-10	---	---
Winterfat	EULA5	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	1-5	---	2-5
Black greasewood	SAVE4	---	---	---	40-60	---
Seepweed	SUAED	---	---	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Other shrubs	SSSS	5-15	5-15	10-20	5-15	10-20
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		O27XO43N	O29XO32N	O29XO17N	O27XO25N	O29XO41N
Potential production (lb/acre):						
Favorable years		400	150	350	400	500
Normal years		200	100	250	200	300
Unfavorable years		100	50	100	50	100

311—Gynelle-Cirac association

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats
Elevation: 4,700 to 5,000 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 56 degrees F
Frost-free season—about 145 days

Composition

Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—45 percent
Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Zaba very gravelly loam, 0 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Playas—5 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent

Gynelle Soil

Position on landscape: Fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, black greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 3 inches
Runoff: very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—beach terraces adjacent to alluvial flats; distinctive present vegetation—shadscale, black greasewood
Inclusion 2: Position on landscape—basin floors; distinctive present vegetation—barren
Inclusion 3: Position on landscape—dunes on alluvial flats; distinctive present vegetation—black greasewood, Indian ricegrass

Major Uses

Current Uses: Rangeland, wildlife habitat, irrigated cropland

Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 83)

Elements of Wildlife Habitat

Suitability of Gynelle soil for named elements:
Grain and seed crops (irrigated)—poor
Domestic grasses and legumes (irrigated)—poor
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Wetland plants—very poor
Shallow water areas—very poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Cirac Soil)
Suitability and limitations for the following uses:

TABLE 83.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Gynelle	Cirac	1	2	3
Indian ricegrass	ORHY	2-5	---	---	---	10-20
Bottlebrush squirreltail	SIHY	1-2	---	---	---	---
Galleta	HIJA	1-2	---	---	---	---
Inland saltgrass	DIST	---	5-10	5-10	---	---
Needlegrass	STIPA	---	---	---	---	5-10
Other perennial grasses	PPGG	2-5	5-15	5-15	---	2-5
Native annual grasses	AAGG	2-5	---	---	---	1-3
Perennial forbs	PPFF	2-6	3-7	3-7	---	2-5
Native annual forbs	AAFF	3-5	---	---	---	2-5
Shadscale	ATCO	30-50	2-10	2-10	---	---
Black greasewood	SAVE4	10-20	40-60	40-60	---	10-40
Bailey greasewood	SAVEB	5-10	---	---	---	---
Seepweed	SUAED	---	2-5	2-5	---	---
Other shrubs	SSSS	10-25	5-15	5-15	---	5-20
Site symbol		029X063N	027X025N	027X025N	---	027X016N
Potential production (lb/acre):						
Favorable years		200	400	400	---	300
Normal years		100	200	200	---	200
Unfavorable years		50	50	50	---	50

Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium

Interpretive Groups

Capability classification: Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Cirac soil—VIIs, nonirrigated
Site symbol: Gynelle soil—029X063N; Cirac soil—027X025N

312—Gynelle-Oricto association, alkali

Map Unit Setting

Position on landscape: Fan skirts, fan piedmonts
Elevation: 4,400 to 5,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 56 degrees F
Frost-free season—about 140 days

Composition

Gynelle very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Gynelle very gravelly sand, alkali, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Oricto very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Gynelle Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, Bailey greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle, Alkali, Soil

Position on landscape: Lower part of inset fans and fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium

Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 2 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 15 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans, drainageways; distinctive present vegetation—burrobrush, shadscale, Indian ricegrass
Inclusion 2: Position on landscape—fan skirts, lower part of fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush
Inclusion 3: Position on landscape—fan skirts, lower part of fan piedmonts; distinctive present vegetation—shadscale, dalea, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 84)

Elements of Wildlife Habitat

Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle, alkali, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Gynelle, Alkali, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones

TABLE 84.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gynelle	Gynelle, alkali	Oricto	1	2	3
Indian ricegrass	ORHY	10-20	2-5	1-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	5-10	1-2	---	---	2-5	---
Galleta	HIJA	---	1-2	---	---	10-25	5-20
King desertgrass	BLKI	---	---	1-2	---	---	---
Needlegrass	STIPA	---	---	---	---	2-5	2-5
Dropseed	SPORO	---	---	---	---	---	5-15
Other perennial grasses	PPGG	5-10	2-5	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	---	2-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	3-7	2-6	5-10	2-6	4-10	5-7
Native annual forbs	AAFF	2-5	3-5	2-5	1-5	1-5	2-4
Shadscale	ATCO	10-20	30-50	20-40	---	10-25	---
Cooper wolfberry	LYCO2	5-20	---	5-15	2-5	---	---
Bailey greasewood	SAVEB	5-10	5-10	10-15	2-10	5-10	---
Black greasewood	SAVE4	---	10-20	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	10-15
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	---	2-5	1-5	---
Bud sagebrush	ARSP5	---	---	---	---	5-10	5-10
Winterfat	EULA5	---	---	---	---	5-10	5-20
Spiny hopsage	GRSP	---	---	---	---	---	2-8
Anderson wolfberry	LYAN	---	---	---	---	---	1-5
Other shrubs	SSSS	5-15	10-25	5-15	10-20	10-20	10-25
Joshua-tree	YUBR	---	---	---	---	1-2	---
Site symbol		027X043N	029X063N	029X032N	029X041N	029X017N	029X046N
Potential production (lb/acre):							
Favorable years		400	200	150	500	350	450
Normal years		200	100	100	300	250	350
Unfavorable years		100	50	50	100	100	175

Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Improbable source—seepage, excess sodium, excess salt

Interpretive Groups

Capability classification: Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Gynelle, alkali, soil—IVs, irrigated, and VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated
Site symbol: Gynelle soil—027X043N; Gynelle, alkali, soil—029X063N; Oricto soil—029X032N

313—Gynelle-Luning association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts, flood plains
Elevation: 4,300 to 4,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 55 degrees F
Frost-free season—about 145 days

Composition

Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—40 percent
Luning loamy sand, 0 to 4 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—25 percent
Gynelle very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—4 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—4 percent
Inclusion 3: Sodaspring gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—4 percent
Inclusion 4: Gynelle very gravelly sand, warm, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Gynelle, Alkali, Soil

Position on landscape: Alluvial flats, flood plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, black greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Luning Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Indian ricegrass, shadscale
Typical profile:
0 to 3 inches—loamy sand; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
3 to 60 inches or more—stratified sandy loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle Soil

Position on landscape: Alluvial flats, fan skirts
Parent material: Mixed alluvium

Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, Anderson wolfberry
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—sand dunes on flood plains; distinctive present vegetation—black greasewood, Indian ricegrass
Inclusion 2: Position on landscape—alluvial flats, flood plains; distinctive present vegetation—black greasewood, shadscale
Inclusion 3: Position on landscape—alluvial flats; distinctive present vegetation—shadscale, Cooper wolfberry
Inclusion 4: Position on landscape—alluvial flats; distinctive present vegetation—white bursage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 85)

Elements of Wildlife Habitat

Suitability of Gynelle, alkali, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gynelle, Alkali, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Luning Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Gynelle, alkali, soil—IVs, irrigated, and VIIs, nonirrigated; Luning soil—VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Gynelle, alkali, soil—029X063N; Luning soil—027X060N; Gynelle soil—027X043N

TABLE 85.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Gynelle, alkali	Luning	Gynelle	1	2	3	4
Indian ricegrass	ORHY	2-5	30-50	10-20	10-20	---	10-20	2-5
Bottlebrush squirreltail	SIHY	1-2	---	5-10	---	---	5-10	---
Galleta	HIJA	1-2	---	---	---	---	---	2-5
Needlegrass	STIPA	---	---	---	5-10	---	---	---
Inland saltgrass	DIST	---	---	---	---	5-10	---	---
Fluffgrass	TRPU2	---	---	---	---	---	---	1-2
Other perennial grasses	PPGG	2-5	2-5	5-10	2-5	5-15	5-10	5-10
Native annual grasses	AAGG	2-5	---	---	1-3	---	---	1-3
Globemallow	SPHAE	---	1-3	---	---	---	---	---
Birdcage eveningprimrose	OEDE2	---	1-3	---	---	---	---	---
Other perennial forbs	PPFF	2-6	2-5	3-7	2-5	3-7	3-7	1-5
Native annual forbs	AAFF	3-5	---	2-5	2-5	---	2-5	1-3
Shadscale	ATCO	30-50	---	10-20	---	2-10	10-20	20-40
Black greasewood	SAVE4	10-20	---	---	10-40	40-60	---	---
Bailey greasewood	SAVEB	5-10	---	5-10	---	---	5-10	10-20
Fourwing saltbush	ATCA2	---	15-30	---	---	---	---	---
Cooper wolfberry	LYCO2	---	10-20	5-20	---	---	5-20	5-10
Nevada dalea	DAPO2	---	5-10	---	---	---	---	---
Seepweed	SUAED	---	---	---	---	2-5	---	---
White bursage	FRDU	---	---	---	---	---	---	10-20
Other shrubs	SSSS	10-25	2-15	5-15	5-20	5-15	5-15	10-20
Site symbol		029X063N	027X060N	027X043N	027X016N	027X025N	027X043N	029X039N
Potential production (lb/acre):								
Favorable years		200	400	400	300	400	400	150
Normal years		100	200	200	200	200	200	100
Unfavorable years		50	100	100	50	50	100	50

314—Gynelle-Cirac-Oricto association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts, fan piedmonts
Elevation: 4,700 to 5,100 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 55 degrees F
Frost-free season—about 130 days

Composition

Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—50 percent
Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—20 percent
Oricto very gravelly sandy loam, alkali, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Kawich loamy sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—4 percent
Inclusion 3: Slaw loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—3 percent

Gynelle Soil

Position on landscape: Fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, Cooper wolfberry, shadscale
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, suaeda, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Oricto Soil

Position on landscape: Lower part of fan piedmont remnants adjacent to fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth

Dominant present vegetation: Black greasewood, shadscale, Cooper wolfberry
Typical profile:
0 to 2 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 15 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, rabbitbrush, burrobrush
Inclusion 2: Position on landscape—dunes on fan skirts and alluvial flats; distinctive present vegetation—black greasewood, suaeda
Inclusion 3: Position on landscape—lower part of alluvial flats; distinctive present vegetation—black greasewood, suaeda

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 86)

Elements of Wildlife Habitat

Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source

TABLE 86.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gynelle	Cirac	Oricto	1	2	3
Indian ricegrass	ORHY	2-5	---	2-5	5-10	10-20	---
Bottlebrush squirreltail	SIHY	1-2	---	1-2	---	---	---
Galleta	HIJA	1-2	---	1-2	---	---	---
Alkali sacaton	SPAI	---	10-15	---	---	---	10-15
Basin wildrye	ELCI2	---	5-10	---	---	---	5-10
Inland saltgrass	DIST	---	1-5	---	---	---	1-5
Needlegrass	STIPA	---	---	---	---	5-10	---
Other perennial grasses	PPGG	2-5	5-15	2-5	5-10	2-5	5-15
Native annual grasses	AAGG	2-5	2-5	2-5	2-4	1-3	2-5
Perennial forbs	PPFF	2-6	5-10	2-6	2-6	2-5	5-10
Native annual forbs	AAFF	3-5	2-5	3-5	1-5	2-5	2-5
Shadscale	ATCO	30-50	15-30	30-50	---	---	15-30
Black greasewood	SAVE4	10-20	5-15	10-20	---	10-40	5-15
Bailey greasewood	SAVEB	5-10	---	5-10	2-10	---	---
Cooper wolfberry	LYCO2	---	5-10	---	2-5	---	5-10
Anderson wolfberry	LYAN	---	5-10	---	---	---	5-10
Rubber rabbitbrush	CHNA2	---	2-5	---	10-25	---	2-5
Fourwing saltbush	ATCA2	---	2-5	---	5-15	---	2-5
Basin big sagebrush	ARTRT*	---	2-5	---	---	---	2-5
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---
Other shrubs	SSSS	10-25	10-20	10-25	10-20	5-20	10-20
Site symbol		029X063N	029X024N	029X063N	029X041N	027X016N	029X024N
Potential production (lb/acre):							
Favorable years		200	800	200	500	300	800
Normal years		100	350	100	300	200	350
Unfavorable years		50	150	50	100	50	150

Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt

Interpretive Groups

Capability classification: Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Cirac soil—VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated
Site symbol: Gynelle soil—029X063N; Cirac soil—029X024N; Oricto soil—029X063N

316—Gynelle-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 4,800 to 5,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 135 days

Composition

Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—50 percent
Wardenot very gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Oricto very cobbly fine sandy loam, alkali, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Gynelle very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Blacktop very gravelly sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—2 percent

Gynelle Soil

Position on landscape: Fan skirts, lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, black greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 60 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—Cooper wolfberry, shadscale, black greasewood

Inclusion 2: Position on landscape—upper part of fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood, Cooper wolfberry
Inclusion 3: Position on landscape—low hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 87)

Elements of Wildlife Habitat

Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gynelle Soil)

TABLE 87.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Gynelle	Wardenot	1	2	3
Indian ricegrass	ORHY	2-5	5-10	2-5	10-20	2-5
Bottlebrush squirreltail	SIHY	1-2	2-5	1-2	5-10	1-2
Galleta	HIJA	1-2	10-25	1-2	---	---
Needlegrass	STIPA	---	2-5	---	---	---
King desertgrass	BLKI	---	---	---	---	1-2
Other perennial grasses	PPGG	2-5	5-15	2-5	5-10	1-5
Native annual grasses	AAGG	2-5	1-5	2-5	---	1-5
Perennial forbs	PPFF	2-6	4-10	2-6	3-7	2-5
Native annual forbs	AAFF	3-5	1-5	3-5	2-5	1-5
Shadscale	ATCO	30-50	10-25	30-50	10-20	40-60
Black greasewood	SAVE4	10-20	---	10-20	---	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	5-10	10-15
Bud sagebrush	ARSP5	---	5-10	---	---	2-5
Winterfat	EULA5	---	5-10	---	---	---
Nevada ephedra	EPNE	---	1-5	---	---	---
Cooper wolfberry	LYCO2	---	---	---	5-20	2-5
Nevada dalea	DAPO2	---	---	---	---	5-10
Other shrubs	SSSS	10-25	10-20	10-25	5-15	5-15
Joshua-tree	YUBR	---	1-2	---	---	---
Site symbol		029X063N	029X017N	029X063N	027X043N	029X033N
Potential production (lb/acre):						
Favorable years		200	350	200	400	100
Normal years		100	250	100	200	50
Unfavorable years		50	100	50	100	25

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Gynelle soil—029X063N; Wardenot soil—029X017N

317—Gynelle-Oricto association, warm

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,300 to 5,000 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 56 degrees F
Frost-free season—about 145 days

Composition

Gynelle very gravelly sand, warm, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—70 percent
Oricto very gravelly sandy loam, 0 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Sodaspring gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—5 percent
Inclusion 2: Typic Torripsamments fine sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—4 percent
Inclusion 3: Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—3 percent
Inclusion 4: Playas—3 percent

Gynelle Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: White bursage, shadscale, Anderson wolfberry, Cooper wolfberry
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Sparse shadscale, Cooper wolfberry
Typical profile:
0 to 2 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate

Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, Cooper wolfberry
Inclusion 2: Position on landscape—sand sheets and dune sheets on the lower part of fan piedmonts; distinctive present vegetation—Indian ricegrass, dalea
Inclusion 3: Position on landscape—alluvial flats adjacent to fan piedmonts; distinctive present vegetation—black greasewood
Inclusion 4: Position on landscape—basins floors; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 88)

Elements of Wildlife Habitat

Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty,too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt

Interpretive Groups

Capability classification: Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated
Site symbol: Gynelle soil—029X039N; Oricto soil—029X032N

TABLE 88.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Gynelle	Oricto	1	2	3	4
Galleta	HIJA	2-5	---	---	2-5	---	---
Indian ricegrass	ORHY	2-5	1-10	10-20	20-30	---	---
Fluffgrass	TRPU2	1-2	---	---	---	---	---
King desertgrass	BLKI	---	1-2	---	---	---	---
Bottlebrush squirreltail	SIHY	---	---	5-10	---	---	---
Dropseed	SPORO	---	---	---	5-25	---	---
Needlegrass	STIPA	---	---	---	2-5	---	---
Inland saltgrass	DIST	---	---	---	---	5-10	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-15	5-15	---
Native annual grasses	AAGG	1-3	1-5	---	2-5	---	---
Perennial forbs	PPFF	1-5	5-10	3-7	5-10	3-7	---
Native annual forbs	AAFF	1-3	2-5	2-5	2-5	---	---
Shadscale	ATCO	20-40	20-40	10-20	---	2-10	---
White bursage	FRDU	10-20	---	---	---	---	---
Bailey greasewood	SAVEB	10-20	10-15	5-10	---	---	---
Cooper wolfberry	LYCO2	5-10	5-15	5-20	---	---	---
Fourwing saltbush	ATCA2	---	---	---	15-25	---	---
Winterfat	EULA5	---	---	---	5-20	---	---
Bud sagebrush	ARSP5	---	---	---	5-10	---	---
Spiny hopsage	GRSP	---	---	---	1-5	---	---
Black greasewood	SAVE4	---	---	---	---	40-60	---
Seepweed	SUAED	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	5-15	5-15	10-20	5-15	---
Site symbol		029X039N	029X032N	027X043N	029X012N	027X025N	---
Potential production (lb/acre):							
Favorable years		150	150	400	500	400	---
Normal years		100	100	200	350	200	---
Unfavorable years		50	50	100	200	50	---

321—Oricto-Roic-Gynelle association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts, hills
Elevation: 4,400 to 5,000 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 55 degrees F
Frost-free season—about 145 days

Composition

Oricto very cobbly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—40 percent
Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes, (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—25 percent
Gynelle very gravelly loamy sand, warm, 8 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Badland—6 percent
Inclusion 3: Wardenot very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Oricto Soil

Position on landscape: Crests and shoulders of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—convex
Dominant present vegetation: Shadscale, Cooper wolfberry
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 55 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Roic Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Gynelle Soil

Position on landscape: Inset fans, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, white bursage
Typical profile:
0 to 2 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SP-SM, GM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale
Inclusion 2: Position on landscape—lower part of fan remnant side slopes, side slopes of hills; distinctive present vegetation—barren
Inclusion 3: Position on landscape—inset fans, lower side slopes of ballenas; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 89)

Elements of Wildlife Habitat

Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones, excess salt
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones, slope
Roadfill: Fair—large stones
Sand: Improbable source—excess fines

TABLE 89.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Oricto	Roic	Gynelle	1	2	3
Indian ricegrass	ORHY	1-10	2-5	2-5	5-10	---	5-10
King desertgrass	BLKI	1-2	1-2	---	---	---	---
Bottlebrush squirreltail	SIHY	---	1-2	---	---	---	2-5
Galleta	HIJA	---	---	2-5	---	---	10-25
Fluffgrass	TRPU2	---	---	1-2	---	---	---
Needlegrass	STIPA	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	1-5	5-10	5-10	---	5-15
Native annual grasses	AAGG	1-5	1-5	1-3	2-4	---	1-5
Perennial forbs	PPFF	5-10	2-5	1-5	2-6	---	4-10
Native annual forbs	AAFF	2-5	1-5	1-3	1-5	---	1-5
Shadscale	ATCO	20-40	40-60	20-40	---	---	10-25
Bailey greasewood	SAVEB	10-15	10-15	10-20	2-10	---	5-10
Cooper wolfberry	LYCO2	5-15	2-5	5-10	2-5	---	---
Nevada dalea	DAPO2	---	5-10	---	---	---	---
Bud sagebrush	ARSP5	---	2-5	---	---	---	5-10
White bursage	FRDU	---	---	10-20	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	1-5
Winterfat	EULA5	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	5-15	10-20	10-20	---	10-20
Joshua-tree	YUBR	---	---	---	---	---	1-2
Site symbol		029X032N	029X033N	029X039N	029X041N	---	029X017N
Potential production (lb/acre):							
Favorable years		150	100	150	500	---	350
Normal years		100	50	100	300	---	250
Unfavorable years		50	25	50	100	---	100

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Oricto soil—VIIs, nonirrigated; Roic soil—VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Oricto soil—029X032N; Roic soil—029X033N; Gynelle soil—029X039N

323—Oricto-Terlco-Roic association

Map Unit Setting

Position on landscape: Fan piedmonts, hills, rock pediments
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 135 days

Composition

Oricto very cobbly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—40 percent
Terlco very gravelly fine sandy loam, dry, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—30 percent
Roic very gravelly fine sandy loam, dry, 8 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Badland—6 percent
Inclusion 2: Wardenot gravelly fine sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 55 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Terlco Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, spiny menodora, Indian ricegrass, galleta
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, friable; very strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very

friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1

19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Roic Soil

Position on landscape: Hills, rock pediment remnants
Parent material: Kind—residuum, colluvium; source—sedimentary rocks
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Sparse Bailey greasewood, shadscale
Typical profile:

0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2

3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4

8 inches—weathered bedrock

Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of pediments cut in unconsolidated Tertiary sediment; distinctive present vegetation—barren
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush
Inclusion 3: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 90)

Elements of Wildlife Habitat

Suitability of Oricto soil for named elements: Poor
Shrubs (nonirrigated)—poor
Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt
(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight

TABLE 90.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Oricto	Terlco	Roic	1	2	3
Indian ricegrass	ORHY	1-10	5-20	2-5	---	5-10	5-10
King desertgrass	BLKI	1-2	---	1-2	---	---	---
Galleta	HIJA	---	5-10	---	---	10-25	---
Bottlebrush squirreltail	SIHY	---	---	1-2	---	2-5	---
Needlegrass	STIPA	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	1-5	---	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	2-5	---	4-10	2-6
Native annual forbs	AAFF	2-5	2-5	1-5	---	1-5	1-5
Shadscale	ATCO	20-40	5-15	40-60	---	10-25	---
Bailey greasewood	SAVEB	10-15	5-15	10-15	---	5-10	2-10
Cooper wolfberry	LYCO2	5-15	---	2-5	---	---	2-5
Spiny menodora	MESP2	---	10-30	---	---	---	---
Bud sagebrush	ARSP5	---	5-10	2-5	---	5-10	---
Nevada ephedra	EPNE	---	5-10	---	---	1-5	2-5
Nevada dalea	DAPO2	---	---	5-10	---	---	---
Winterfat	EULA5	---	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	10-20	5-15	---	10-20	10-20
Joshua-tree	YUBR	---	---	---	---	1-2	---
Site symbol		029X032N	029X036N	029X033N	---	029X017N	029X041N
Potential production (lb/acre):							
Favorable years		150	400	100	---	350	500
Normal years		100	300	50	---	250	300
Unfavorable years		50	100	25	---	100	100

Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium

(Roic Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Oricto soil—VIIs, nonirrigated; Terlco soil—VIIs, nonirrigated; Roic soil—VIIs, nonirrigated
Site symbol: Oricto soil—029X032N; Terlco soil—029X036N; Roic soil—029X033N

326—Oricto-Blacktop-Gynelle association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts, hills
Elevation: 4,900 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Oricto very cobbly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—30 percent
Blacktop very gravelly fine sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Gynelle very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Typic Torriorthents very gravelly sandy loam, 15 to 30 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Sparse shadscale, Bailey greasewood, Cooper wolfberry
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 55 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Blacktop Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle Soil

Position on landscape: Lower part of fan piedmonts and fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, Bailey greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush rabbitbrush
Inclusion 2: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—Bailey greasewood, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 91)

Elements of Wildlife Habitat

Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

TABLE 91.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Oricto	Blacktop	Gynelle	1	2
Indian ricegrass	ORHY	1-10	2-5	10-20	5-10	1-10
King desertgrass	BLKI	1-2	1-2	---	---	1-2
Bottlebrush squirreltail	SIHY	---	1-2	5-10	---	---
Other perennial grasses	PPGG	5-10	1-5	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	2-4	1-5
Perennial forbs	PPFF	5-10	2-5	3-7	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	2-5
Shadscale	ATCO	20-40	40-60	10-20	---	20-40
Bailey greasewood	SAVEB	10-15	10-15	5-10	2-10	10-15
Cooper wolfberry	LYCO2	5-15	2-5	5-20	2-5	5-15
Nevada dalea	DAPO2	---	5-10	---	---	---
Bud sagebrush	ARSP5	---	2-5	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Nevada ephedra	EPNE	---	---	---	2-5	---
Other shrubs	SSSS	5-15	5-15	5-15	10-20	5-15
Site symbol		029X032N	029X033N	027X043N	029X041N	029X032N
Potential production (lb/acre):						
Favorable years		150	100	400	500	150
Normal years		100	50	200	300	100
Unfavorable years		50	25	100	100	50

Interpretive Groups

Capability classification: Oricto soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated

Site symbol: Oricto soil—029X032N; Blacktop soil—029X033N; Gynelle soil—027X043N

327—Oricto-Gynelle association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,400 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 54 degrees F
Frost-free season—about 140 days

Composition

Oricto very gravelly sandy loam, alkali, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—55 percent
Gynelle very gravelly loamy sand, alkali, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Typic Natrargids, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 3: Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Oricto Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood, Cooper wolfberry
Typical profile:
0 to 2 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Gynelle Soil

Position on landscape: Inset fans, side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, black greasewood
Typical profile:
0 to 2 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SP-SM, GM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare

Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—toe slopes of fan remnants and adjacent ballenas; distinctive present vegetation—shadscale, Cooper wolfberry, black greasewood
Inclusion 2: Position on landscape—partial ballenas; distinctive present vegetation—shadscale, Bailey greaseewood, ephedra
Inclusion 3: Position on landscape—inset fans, lower side slopes of partial ballenas; distinctive present vegetation—shadscale, bud sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 92)

Elements of Wildlife Habitat

Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Oricto soil—VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Oricto soil—029X063N; Gynelle soil—029X063N

TABLE 92.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Oricto	Gynelle	1	2	3
Indian ricegrass	ORHY	2-5	2-5	---	5-10	5-10
Bottlebrush squirreltail	SIHY	1-2	1-2	---	2-5	2-5
Galleta	HIJA	1-2	1-2	---	10-25	10-25
Alkali sacaton	SPAI	---	---	10-15	---	---
Basin wildrye	ELCI2	---	---	5-10	---	---
Inland saltgrass	DIST	---	---	1-5	---	---
Needlegrass	STIPA	---	---	---	2-5	2-5
Other perennial grasses	PPGG	2-5	2-5	5-15	5-15	5-15
Native annual grasses	AAGG	2-5	2-5	2-5	1-5	1-5
Perennial forbs	PPFF	2-6	2-6	5-10	4-10	4-10
Native annual forbs	AAFF	3-5	3-5	2-5	1-5	1-5
Shadscale	ATCO	30-50	30-50	15-30	10-25	10-25
Black greasewood	SAVE4	10-20	10-20	5-15	---	---
Bailey greasewood	SAVEB	5-10	5-10	---	5-10	5-10
Cooper wolfberry	LYCO2	---	---	5-10	---	---
Anderson wolfberry	LYAN	---	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	2-5	---	---
Fourwing saltbush	ATCA2	---	---	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	2-5	---	---
Bud sagebrush	ARSP5	---	---	---	5-10	5-10
Winterfat	EULA5	---	---	---	5-10	5-10
Nevada ephedra	EPNE	---	---	---	1-5	1-5
Other shrubs	SSSS	10-25	10-25	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2	1-2
Site symbol		029X063N	029X063N	029X024N	029X017N	029X017N
Potential production (lb/acre):						
Favorable years		200	200	800	350	350
Normal years		100	100	350	250	250
Unfavorable years		50	50	150	100	100

331—Candelaria-Gynelle-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 5,000 to 6,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Candelaria very gravelly fine sandy loam, dry, 2 to 8 percent slopes (Typic Calciorthids - sandy-skeletal, mixed, mesic)—50 percent
Gynelle very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Izo extremely gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 2: Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Candelaria Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry, bud sagebrush
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
1 to 11 inches—gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 25 to 35 percent pebbles (by weight); platy structure; soft, very friable; very strongly alkaline (pH 9.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
11 to 22 inches—very gravelly sandy loam, very gravelly loamy sand, extremely gravelly sandy loam; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); massive; hard, firm; very strongly alkaline (pH 9.4); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
22 to 60 inches or more—stratified extremely gravelly sand to very gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; very strongly alkaline (pH 9.2); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Gynelle Soil

Position on landscape: Inset fans, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale
Typical profile:
0 to 2 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SP-SM, GM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches

Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush
Typical profile:
0 to 8 inches—extremely gravelly loamy sand; 0 to 15 percent cobbles and stones and 75 to 90 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—shadscale, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 93)

Elements of Wildlife Habitat

Suitability of Candelaria soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Candelaria Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Candelaria soil—VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Candelaria soil—029X017N; Gynelle soil—027X043N; Izo soil—029X041N

TABLE 93.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Candelaria	Gynelle	Izo	1	2
Galleta	HIJA	10-25	---	---	10-25	10-25
Indian ricegrass	ORHY	5-10	10-20	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	5-10	---	2-5	2-5
Needlegrass	STIPA	2-5	---	---	2-5	2-5
Other perennial grasses	PPGG	5-15	5-10	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	---	2-4	1-5	1-5
Perennial forbs	PPFF	4-10	3-7	2-6	4-10	4-10
Native annual forbs	AAFF	1-5	2-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-20	---	10-25	10-25
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	5-10
Bud sagebrush	ARSP5	5-10	---	---	5-10	5-10
Winterfat	EULA5	5-10	---	---	5-10	5-10
Nevada ephedra	EPNE	1-5	---	2-5	1-5	1-5
Cooper wolfberry	LYCO2	---	5-20	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Other shrubs	SSSS	10-20	5-15	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	---	1-2	1-2
Site symbol		029X017N	027X043N	029X041N	029X017N	029X017N
Potential production (lb/acre):						
Favorable years		350	400	500	350	350
Normal years		250	200	300	250	250
Unfavorable years		100	100	100	100	100

334—Candelaria-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,000 to 6,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Candelaria very gravelly fine sandy loam, dry, 2 to 8 percent slopes (Typic Calciorthids - sandy-skeletal, mixed, mesic)—70 percent
Izo extremely gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents very cobbly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - fine-loamy, mixed (calcareous), mesic)—6 percent
Inclusion 2: Typic Calciorthids, 8 to 30 percent slopes (Typic Calciorthids)—5 percent
Inclusion 3: Typic Torriorthents very cobbly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent

Candelaria Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry, bud sagebrush, Bailey greasewood
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
1 to 11 inches—gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 25 to 35 percent pebbles (by weight); platy structure; soft, very friable; very strongly alkaline (pH 9.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
11 to 22 inches—very gravelly sandy loam, very gravelly loamy sand, extremely gravelly sandy loam; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); massive; hard, firm; very strongly alkaline (pH 9.4); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
22 to 60 inches or more—stratified extremely gravelly sand to very gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; very strongly alkaline (pH 9.2); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Izo Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale
Typical profile:
0 to 8 inches—extremely gravelly loamy sand; 0 to 15 percent cobbles and stones and 75 to 90 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—shadscale, Cooper wolfberry, bud sagebrush
Inclusion 2: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—shadscale, galleta
Inclusion 3: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—shadscale, Cooper wolfberry, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 94)

Elements of Wildlife Habitat

Suitability of Candelaria soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Candelaria Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Candelaria soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Candelaria soil—029X017N; Izo soil—029X041N

TABLE 94.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Candelaria	Izo	1	2	3
Galleta	HIJA	10-25	---	---	---	---
Indian ricegrass	ORHY	5-10	5-10	1-10	1-10	1-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---	---
Needlegrass	STIPA	2-5	---	---	---	---
King desertgrass	BLKI	---	---	1-2	1-2	1-2
Other perennial grasses	PPGG	5-15	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	2-6	5-10	5-10	5-10
Native annual forbs	AAFF	1-5	1-5	2-5	2-5	2-5
Shadscale	ATCO	10-25	---	20-40	20-40	20-40
Bailey greasewood	SAVEB	5-10	2-10	10-15	10-15	10-15
Bud sagebrush	ARSP5	5-10	---	---	---	---
Winterfat	EULA5	5-10	---	---	---	---
Nevada ephedra	EPNE	1-5	2-5	---	---	---
Rubber rabbitbrush	CHNA2	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	5-15	---	---	---
Burrobrush	HYMEN3	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	2-5	5-15	5-15	5-15
Other shrubs	SSSS	10-20	10-20	5-15	5-15	5-15
Joshua-tree	YUBR	1-2	---	---	---	---
Site symbol		029X017N	029X041N	029X032N	029X032N	029X032N
Potential production (lb/acre):						
Favorable years		350	500	150	150	150
Normal years		250	300	100	100	100
Unfavorable years		100	100	50	50	50

340—Zaba very gravelly loam, 0 to 8 percent slopes

Map Unit Setting

Position on landscape: Beach plains
Elevation: 4,900 to 5,100 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Zaba very gravelly loam, 0 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—90 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly sand, alkali, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—5 percent

Zaba Soil

Position on landscape: Beach plains
Parent material: Mixed alluvium
Slope features: Length—short; shape—convex
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 23 inches—stratified very gravelly sandy clay loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM, SM, SP-SM; estimated AASHTO classification - A-1
23 to 60 inches or more—extremely gravelly sand, extremely gravelly coarse sand, very gravelly sand; 0 to 5 percent cobbles and stones and 55 to 90 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—toe slopes of fan piedmonts and adjacent beach terraces; distinctive present vegetation—black greasewood
Inclusion 2: Position on landscape—alluvial flats adjacent to lower part of beach terraces; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 95)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt

Interpretive Groups

Capability classification: VIIs, nonirrigated
Site symbol: 027X025N

TABLE 95.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions		
		Component name	Inclusion number--	
		Zaba	1	2
Inland saltgrass	DIST	5-10	---	5-10
Indian ricegrass	ORHY	---	2-5	---
Bottlebrush squirreltail	SIHY	---	1-2	---
Galleta	HIJA	---	1-2	---
Other perennial grasses	PPGG	5-15	2-5	5-15
Native annual grasses	AAGG	---	2-5	---
Perennial forbs	PPFF	3-7	2-6	3-7
Native annual forbs	AAFF	---	3-5	---
Black greasewood	SAVE4	40-60	10-20	40-60
Shadscale	ATCO	2-10	30-50	2-10
Seepweed	SUAED	2-5	---	2-5
Bailey greasewood	SAVEB	---	5-10	---
Other shrubs	SSSS	5-15	10-25	5-15
Site symbol		027X025N	029X063N	027X025N
Potential production (lb/acre):				
Favorable years		400	200	400
Normal years		200	100	200
Unfavorable years		50	50	50

341—Zaba-Gynelle association

Map Unit Setting

Position on landscape: Fan skirts, beach plains
Elevation: 4,900 to 5,100 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 55 degrees F
Frost-free season—about 145 days

Composition

Zaba very gravelly loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed mesic)—60 percent
Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—8 percent
Inclusion 2: Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Zaba Soil

Position on landscape: Beach plains
Parent material: Mixed alluvium
Slope features: Length—short; shape—convex
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 23 inches—stratified very gravelly sandy clay loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM, SM, SP-SM; estimated AASHTO classification - A-1
23 to 60 inches or more—extremely gravelly sand, extremely gravelly coarse sand, very gravelly sand; 0 to 5 percent cobbles and stones and 55 to 90 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, black greasewood
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats adjacent to offshore bars; distinctive present vegetation—black greasewood

Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 96)

Elements of Wildlife Habitat

Suitability of Zaba soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 96.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Zaba	Gynelle	1	2
Inland saltgrass	DIST	5-10	---	5-10	---
Indian ricegrass	ORHY	---	2-5	---	5-10
Bottlebrush squirreltail	SIHY	---	1-2	---	---
Galleta	HIJA	---	1-2	---	---
Other perennial grasses	PPGG	5-15	2-5	5-15	5-10
Native annual grasses	AAGG	---	2-5	---	2-4
Perennial forbs	PPFF	3-7	2-6	3-7	2-6
Native annual forbs	AAFF	---	3-5	---	1-5
Black greasewood	SAVE4	40-60	10-20	40-60	---
Shadscale	ATCO	2-10	30-50	2-10	---
Seepweed	SUAED	2-5	---	2-5	---
Bailey greasewood	SAVEB	---	5-10	---	2-10
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Nevada ephedra	EPNE	---	---	---	2-5
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	5-15	10-25	5-15	10-20
Site symbol		027X025N	029X063N	027X025N	029X041N
Potential production (lb/acre):					
Favorable years		400	200	400	500
Normal years		200	100	200	300
Unfavorable years		50	50	50	100

Ratings for Selected Uses

(Zaba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Zaba soil—VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Zaba soil—027X025N; Gynelle soil—029X063N

342—Zaba-Yomba-Slaw association

Map Unit Setting

Position on landscape: Beach plains, alluvial flats
Elevation: 4,600 to 5,200 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Zaba very gravelly loam, 0 to 4 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—20 percent
Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—6 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent

Zaba Soil

Position on landscape: Beach plains
Parent material: Mixed alluvium
Slope features: Length—short; shape—convex
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 23 inches—stratified very gravelly sandy clay loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM, SM, SP-SM; estimated AASHTO classification - A-1
23 to 60 inches or more—extremely gravelly sand, extremely gravelly coarse sand, very gravelly sand; 0 to 5 percent cobbles and stones and 55 to 90 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.1); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Yomba Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic

(SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Slaw Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML; estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—fan skirts and alluvial flats adjacent to beach plains and lake plains; distinctive present vegetation—sparse shadscale, Bailey greasewood, Cooper wolfberry
Inclusion 2: Position on landscape—fan skirts and alluvial flats adjacent to beach plains and lake plains; distinctive present vegetation—black greasewood, shadscale
Inclusion 3: Position on landscape—sand dunes on beach plains and lake plains; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 97)

Elements of Wildlife Habitat

Suitability of Zaba soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Slaw soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Zaba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Yomba Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Slaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—flooding, too clayey
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength

TABLE 97.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Zaba	Yomba	Slaw	1	2	3
Inland saltgrass	DIST	5-10	1-5	5-10	---	5-10	---
Alkali sacaton	SPAI	---	10-15	---	---	---	---
Basin wildrye	ELCI2	---	5-10	---	---	---	---
Indian ricegrass	ORHY	---	---	---	2-5	---	10-20
Bottlebrush squirreltail	SIHY	---	---	---	1-2	---	---
Galleta	HIJA	---	---	---	1-2	---	---
Needlegrass	STIPA	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-15	5-15	5-15	2-5	5-15	2-5
Native annual grasses	AAGG	---	2-5	---	2-5	---	1-3
Perennial forbs	PPFF	3-7	5-10	3-7	2-6	3-7	2-5
Native annual forbs	AAFF	---	2-5	---	3-5	---	2-5
Black greasewood	SAVE4	40-60	5-15	40-60	10-20	40-60	10-40
Shadscale	ATCO	2-10	15-30	2-10	30-50	2-10	---
Seepweed	SUAED	2-5	---	2-5	---	2-5	---
Cooper wolfberry	LYCO2	---	5-10	---	---	---	---
Anderson wolfberry	LYAN	---	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	---	2-5	---	---	---	---
Fourwing saltbush	ATCA2	---	2-5	---	---	---	---
Basin big sagebrush	ARTRT*	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	5-10	---	---
Other shrubs	SSSS	5-15	10-20	5-15	10-25	5-15	5-20
Site symbol		027X025N	029X024N	027X025N	029X063N	027X025N	027X016N
Potential production (lb/acre):							
Favorable years		400	800	400	200	400	300
Normal years		200	350	200	100	200	200
Unfavorable years		50	150	50	50	50	50

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salts

Interpretive Groups

Capability classification: Zaba soil—VIIs, nonirrigated; Yomba soil—VIIs, nonirrigated; Slaw soil—VIIw, nonirrigated
Site symbol: Zaba soil—027X025N; Yomba soil—029X024N; Slaw soil—027X025N

350—Roic-Oricto-Wardenot association

Map Unit Setting

Position on landscape: Hills, fan piedmonts
Elevation: 4,800 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—40 percent
Oricto very cobbly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—30 percent
Wardenot gravelly loamy fine sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Badland—6 percent
Inclusion 2: Gynelle very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Roic Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Bailey greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—convex
Dominant present vegetation: Shadscale, Cooper wolfberry
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 55 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate

Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry
Typical profile:
0 to 7 inches—gravelly loamy fine sand; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of hills underlain by unconsolidated sediment; distinctive present vegetation—barren
Inclusion 2: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 98)

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated

TABLE 98.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Roic	Oricto	Wardenot	1	2
Indian ricegrass	ORHY	2-5	1-10	5-10	---	10-20
King desertgrass	BLKI	1-2	1-2	---	---	---
Bottlebrush squirreltail	SIHY	1-2	---	2-5	---	5-10
Galleta	HIJA	---	---	10-25	---	---
Needlegrass	STIPA	---	---	2-5	---	---
Other perennial grasses	PPGG	1-5	5-10	5-15	---	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	---
Perennial forbs	PPFF	2-5	5-10	4-10	---	3-7
Native annual forbs	AAFF	1-5	2-5	1-5	---	2-5
Shadscale	ATCO	40-60	20-40	10-25	---	10-20
Bailey greasewood	SAVEB	10-15	10-15	5-10	---	5-10
Nevada dalea	DAPO2	5-10	---	---	---	---
Cooper wolfberry	LYCO2	2-5	5-15	---	---	5-20
Bud sagebrush	ARSP5	2-5	---	5-10	---	---
Winterfat	EULA5	---	---	5-10	---	---
Nevada ephedra	EPNE	---	---	1-5	---	---
Other shrubs	SSSS	5-15	5-15	10-20	---	5-15
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		029X033N	029X032N	029X017N	---	027X043N
Potential production (lb/acre):						
Favorable years		100	150	350	---	400
Normal years		50	100	250	---	200
Unfavorable years		25	50	100	---	100

Site symbol: Roic soil—029X033N; Oricto soil—029X032N; Wardenot soil—029X017N

351—Roic-Vindicator-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, rock pediments
Elevation: 5,600 to 6,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—45 percent
Vindicator gravelly sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel gravelly fine sandy loam, 4 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—8 percent
Inclusion 2: Downeyville very stony fine sandy loam, 30 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Badland—2 percent

Roic Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, dalea
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Vindicator Soil

Position on landscape: Hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass, dalea
Typical profile:
0 to 2 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 20 to 35 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Crests of hillsides, shoulders of back slopes of rock pediments
Slope features: Length—short; shape—convex

Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants adjacent to hills; distinctive present vegetation—shadscale, bud sagebrush

Inclusion 2: Position on landscape—hills; distinctive present vegetation—shadscale, bud sagebrush, galleta

Inclusion 3: Position on landscape—side slopes of hills and pediments underlain by tuffaceous lakebed sediment; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 99)

TABLE 99.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Roic	Vindicator	Rock outcrop	1	2	3
Indian ricegrass	ORHY	2-5	5-10	---	5-10	5-15	---
King desertgrass	BLKI	1-2	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-2	1-3	---	2-5	2-5	---
Galleta	HIJA	---	5-15	---	10-25	5-20	---
Needlegrass	STIPA	---	2-5	---	2-5	5-10	---
Other perennial grasses	PPGG	1-5	5-10	---	5-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	---
Perennial forbs	PPFF	2-5	5-10	---	4-10	5-10	---
Native annual forbs	AAFF	1-5	2-5	---	1-5	2-5	---
Shadscale	ATCO	40-60	---	---	10-25	15-25	---
Bailey greasewood	SAVEB	10-15	---	---	5-10	5-15	---
Nevada dalea	DAPO2	5-10	5-10	---	---	---	---
Cooper wolfberry	LYCO2	2-5	2-5	---	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	---	5-10	2-5	---
Spiny hopsage	GRSP	---	5-15	---	---	---	---
Anderson wolfberry	LYAN	---	5-15	---	---	---	---
Fremont dalea	DAFR	---	5-10	---	---	---	---
Nevada ephedra	EPNE	---	1-5	---	1-5	2-5	---
Winterfat	EULA5	---	---	---	5-10	---	---
Other shrubs	SSSS	5-15	10-20	---	10-20	10-20	---
Joshua-tree	YUBR	---	---	---	1-2	---	---
Site symbol		029X033N	029X021N	---	029X017N	029X022N	---
Potential production (lb/acre):							
Favorable years		100	300	---	350	300	---
Normal years		50	200	---	250	200	---
Unfavorable years		25	100	---	100	100	---

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Roic soil—029X033N; Vindicator soil—029X021N

352—Roic-Wardenot-Badland association

Map Unit Setting

Position on landscape: Hills, inset fans
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—40 percent
Wardenot gravelly loamy fine sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Badland—20 percent
Contrasting inclusion as follows—
Inclusion 1: Gynelle very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent

Roic Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Bailey greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry
Typical profile:
0 to 7 inches—gravelly loamy fine sand; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Badland

Position on landscape: Eroded areas of unconsolidated sediment on side slopes of hills
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Barren

Contrasting Inclusion

Inclusion 1: Position on landscape—fan piedmonts; distinctive present vegetation—shadscale, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 100)

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)

TABLE 100.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name			Inclusion number--
		Roic	Wardenot	Badland	1
Indian ricegrass	ORHY	2-5	5-10	---	10-20
King desertgrass	BLKI	1-2	---	---	---
Bottlebrush squirreltail	SIHY	1-2	2-5	---	5-10
Galleta	HIJA	---	10-25	---	---
Needlegrass	STIPA	---	2-5	---	---
Other perennial grasses	PPGG	1-5	5-15	---	5-10
Native annual grasses	AAGG	1-5	1-5	---	---
Perennial forbs	PPFF	2-5	4-10	---	3-7
Native annual forbs	AAFF	1-5	1-5	---	2-5
Shadscale	ATCO	40-60	10-25	---	10-20
Bailey greasewood	SAVEB	10-15	5-10	---	5-10
Nevada dalea	DAPO2	5-10	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	5-20
Bud sagebrush	ARSP5	2-5	5-10	---	---
Winterfat	EULA5	---	5-10	---	---
Nevada ephedra	EPNE	---	1-5	---	---
Other shrubs	SSSS	5-15	10-20	---	5-15
Joshua-tree	YUBR	---	1-2	---	---
Site symbol		029X033N	029X017N	---	027X043N
Potential production (lb/acre):					
Favorable years		100	350	---	400
Normal years		50	250	---	200
Unfavorable years		25	100	---	100

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Badland—VIIIe
Site symbol: Roic soil—029X033N; Wardenot soil—029X017N

353—Roic-Stumble-Badland association

Map Unit Setting

Position on landscape: Hills, alluvial fans
Elevation: 4,600 to 5,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Roic very gravelly fine sandy loam, dry, 4 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—40 percent
Stumble loamy sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—25 percent
Badland—20 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Oricto very cobbly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Roic Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Bailey greasewood, shadscale, Cooper wolfberry, galleta
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Stumble Soil

Position on landscape: Sand sheets on lower side slopes of hills and alluvial fans
Parent material: Sandy alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Winterfat, Indian ricegrass, Bailey greasewood
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Badland

Position on landscape: Eroded areas of unconsolidated sediment on side slopes of hills
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmonts adjacent to hills; distinctive present vegetation—Cooper wolfberry, shadscale
Inclusion 2: Position on landscape—fan remnants adjacent to hills; distinctive present vegetation—shadscale, Cooper wolfberry
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 101)

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Badland—VIIIe
Site symbol: Roic soil—029X033N; Stumble soil—029X012N

TABLE 101.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Roic	Stumble	Badland	1	2	3
Indian ricegrass	ORHY	2-5	20-30	---	10-20	1-10	5-10
King desertgrass	BLKI	1-2	---	---	---	1-2	---
Bottlebrush squirreltail	SIHY	1-2	---	---	5-10	---	---
Dropseed	SPORO	---	5-25	---	---	---	---
Galleta	HIJA	---	2-5	---	---	---	---
Needlegrass	STIPA	---	2-5	---	---	---	---
Other perennial grasses	PPGG	1-5	5-15	---	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	2-5	---	---	1-5	2-4
Perennial forbs	PPFF	2-5	5-10	---	3-7	5-10	2-6
Native annual forbs	AAFF	1-5	2-5	---	2-5	2-5	1-5
Shadscale	ATCO	40-60	---	---	10-20	20-40	---
Bailey greasewood	SAVEB	10-15	---	---	5-10	10-15	2-10
Nevada dalea	DAPO2	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	5-20	5-15	2-5
Bud sagebrush	ARSP5	2-5	5-10	---	---	---	---
Fourwing saltbush	ATCA2	---	15-25	---	---	---	5-15
Winterfat	EULA5	---	5-20	---	---	---	---
Spiny hopsage	GRSP	---	1-5	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Nevada ephedra	EPNE	---	---	---	---	---	2-5
Other shrubs	SSSS	5-15	10-20	---	5-15	5-15	10-20
Site symbol		029X033N	029X012N	---	027X043N	029X032N	029X041N
Potential production (lb/acre):							
Favorable years		100	500	---	400	150	500
Normal years		50	350	---	200	100	300
Unfavorable years		25	200	---	100	50	100

354—Roic-Stumble-Vindicator association

Map Unit Setting

Position on landscape: Hills, inset fans
Elevation: 5,500 to 7,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Roic gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—40 percent
Stumble loamy sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—30 percent
Vindicator very gravelly sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—6 percent
Inclusion 2: Typic Torripsamments, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic, shallow)—4 percent
Inclusion 3: Leo gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Blacktop very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—2 percent

Roic Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale
Typical profile:
0 to 3 inches—gravelly sand; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, SP-SM; estimated AASHTO classification - A-1
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Stumble Soil

Position on landscape: Inset fans adjacent to hills
Parent material: Eolian material, mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, dalea, Indian ricegrass
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Vindicator Soil

Position on landscape: Stable areas on hills
Parent material: Kind—residuum; colluvium source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Littleleaf horsebrush, dalea
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—tops and side slopes of hills; distinctive present vegetation—barren
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—littleleaf horsebrush, dalea, Indian ricegrass
Inclusion 3: Position on landscape—inset fans adjacent to hills; distinctive present vegetation—littleleaf horsebrush, dalea, Indian ricegrass
Inclusion 4: Position on landscape—hillsides; distinctive present vegetation—sparse shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 102)

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—slope, depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—slope, depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 102.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Roic	Stumble	Vindicator	1	2	3	4
Galleta	HIJA	10-25	2-5	5-15	---	5-20	5-20	---
Indian ricegrass	ORHY	5-10	20-30	5-10	---	5-10	5-10	2-5
Bottlebrush squirreltail	SIHY	2-5	---	1-3	---	---	---	1-2
Needlegrass	STIPA	2-5	2-5	2-5	---	2-5	2-5	---
Dropseed	SPORO	---	5-25	---	---	5-15	5-15	---
King desertgrass	BLKI	---	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-15	5-15	5-10	---	5-10	5-10	1-5
Native annual grasses	AAGG	1-5	2-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	5-10	---	5-7	5-7	2-5
Native annual forbs	AAFF	1-5	2-5	2-5	---	2-4	2-4	1-5
Shadscale	ATCO	10-25	---	---	---	---	---	40-60
Bailey greasewood	SAVEB	5-10	---	---	---	---	---	10-15
Bud sagebrush	ARSP5	5-10	5-10	2-5	---	5-10	5-10	2-5
Winterfat	EULA5	5-10	5-20	---	---	5-20	5-20	---
Nevada ephedra	EPNE	1-5	---	1-5	---	---	---	---
Fourwing saltbush	ATCA2	---	15-25	---	---	10-15	10-15	---
Spiny hopsage	GRSP	---	1-5	5-15	---	2-8	2-8	---
Anderson wolfberry	LYAN	---	---	5-15	---	1-5	1-5	---
Nevada dalea	DAPO2	---	---	5-10	---	---	---	5-10
Fremont dalea	DAFR	---	---	5-10	---	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	---	10-25	10-25	5-15
Joshua-tree	YUBR	1-2	---	---	---	---	---	---
Site symbol		029X017N	029X012N	029X021N	---	029X046N	029X046N	029X033N
Potential production (lb/acre):								
Favorable years		350	500	300	---	450	450	100
Normal years		250	350	200	---	350	350	50
Unfavorable years		100	200	100	---	175	175	25

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated

Site symbol: Roic soil—029X017N; Stumble soil—029X012N; Vindicator soil—029X021N

355—Roic-Gullied land complex, 2 to 8 percent slopes

Map Unit Setting

Position on landscape: Rock pediments
Elevation: 4,900 to 5,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Roic very gravelly loam, 2 to 8 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—45 percent
Roic very gravelly loam, dry, 2 to 8 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—25 percent
Gullied land—20 percent
Contrasting inclusions as follows—
Inclusion 1: Papoose gravelly sandy loam, 0 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 2: Stumble sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent
Inclusion 3: Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—2 percent

Roic Soil

Position on landscape: Rock pediments
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Roic, Dry, Soil

Position on landscape: Eroded rock pediments
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, kochia
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Gullied Land

Position on landscape: Eroded and finely dissected areas of rock pediments
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—lake-plain terraces; distinctive present vegetation—shadscale, bud sagebrush, Bailey greasewood

Inclusion 2: Position on landscape—sand sheets and sand dunes on lake-plain terraces; distinctive present vegetation—fourwing saltbush, Nevada dalea

Inclusion 3: Position on landscape—flood plains adjacent to lake-plain terraces; distinctive present vegetation—shadscale, black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 103)

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Roic, dry, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Roic, Dry, Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Roic, dry, soil—VIIs, nonirrigated; Gullied land—VIIIe

Site symbol: Roic soil—029X017N; Roic, dry, soil—029X033N

TABLE 103.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Roic	Roic, dry	Gullied land	1	2	3
Galleta	HIJA	10-25	---	---	10-25	2-5	---
Indian ricegrass	ORHY	5-10	2-5	---	5-10	20-30	---
Bottlebrush squirreltail	SIHY	2-5	1-2	---	2-5	---	---
Needlegrass	STIPA	2-5	---	---	2-5	2-5	---
King desertgrass	BLKI	---	1-2	---	---	---	---
Dropseed	SPORO	---	---	---	---	5-25	---
Alkali sacaton	SPAI	---	---	---	---	---	10-15
Basin wildrye	ELCI2	---	---	---	---	---	5-10
Inland saltgrass	DIST	---	---	---	---	---	1-5
Other perennial grasses	PPGG	5-15	1-5	---	5-15	5-15	5-15
Native annual grasses	AAGG	1-5	1-5	---	1-5	2-5	2-5
Perennial forbs	PPFF	4-10	2-5	---	4-10	5-10	5-10
Native annual forbs	AAFF	1-5	1-5	---	1-5	2-5	2-5
Shadscale	ATCO	10-25	40-60	---	10-25	---	15-30
Bailey greasewood	SAVEB	5-10	10-15	---	5-10	---	---
Bud sagebrush	ARSP5	5-10	2-5	---	5-10	5-10	---
Winterfat	EULA5	5-10	---	---	5-10	5-20	---
Nevada ephedra	EPNE	1-5	---	---	1-5	---	---
Nevada dalea	DAPO2	---	5-10	---	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	---	5-10
Fourwing saltbush	ATCA2	---	---	---	---	15-25	2-5
Spiny hopsage	GRSP	---	---	---	---	1-5	---
Black greasewood	SAVE4	---	---	---	---	---	5-15
Anderson wolfberry	LYAN	---	---	---	---	---	5-10
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Basin big sagebrush	ARTRT*	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	5-15	---	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	---	1-2	---	---
Site symbol		029X017N	029X033N	---	029X017N	029X012N	029X024N
Potential production (lb/acre):							
Favorable years		350	100	---	350	500	800
Normal years		250	50	---	250	350	350
Unfavorable years		100	25	---	100	200	150

356—Roic-Advokay-Blacktop association

Map Unit Setting

Position on landscape: Hills
Elevation: 5,200 to 6,000 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Roic very gravelly fine sandy loam, dry, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—30 percent
Advokay gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—30 percent
Blacktop very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—8 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Roic Soil

Position on landscape: Eroded areas on hillsides
Parent material: Kind—residuum, colluvium; source—volcanic rock, breccia
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Anderson wolfberry
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Advokay Soil

Position on landscape: Summits and stable areas of hillsides
Parent material: Kind—colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, bud sagebrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Hillsides

Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges on hills; distinctive present vegetation—barren
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—shadscale, galleta
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 104)

Elements of Wildlife Habitat

Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Roic soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Roic soil—029X033N; Advokay soil—029X017N; Blacktop soil—029X033N

TABLE 104.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Roic	Advokay	Blacktop	1	2	3
Indian ricegrass	ORHY	2-5	5-10	2-5	---	5-15	5-10
King desertgrass	BLKI	1-2	---	1-2	---	---	---
Bottlebrush squirreltail	SIHY	1-2	2-5	1-2	---	2-5	---
Galleta	HIJA	---	10-25	---	---	5-20	---
Needlegrass	STIPA	---	2-5	---	---	5-10	---
Other perennial grasses	PPGG	1-5	5-15	1-5	---	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	2-4
Perennial forbs	PPFF	2-5	4-10	2-5	---	5-10	2-6
Native annual forbs	AAFF	1-5	1-5	1-5	---	2-5	1-5
Shadscale	ATCO	40-60	10-25	40-60	---	15-25	---
Bailey greasewood	SAVEB	10-15	5-10	10-15	---	5-15	2-10
Nevada dalea	DAPO2	5-10	---	5-10	---	---	---
Cooper wolfberry	LYCO2	2-5	---	2-5	---	---	2-5
Bud sagebrush	ARSP5	2-5	5-10	2-5	---	2-5	---
Winterfat	EULA5	---	5-10	---	---	---	---
Nevada ephedra	EPNE	---	1-5	---	---	2-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	10-20	5-15	---	10-20	10-20
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		029X033N	029X017N	029X033N	---	029X022N	029X041N
Potential production (lb/acre):							
Favorable years		100	350	100	---	300	500
Normal years		50	250	50	---	200	300
Unfavorable years		25	100	25	---	100	100

360—Downeyville-Pintwater-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,000 to 6,500 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 125 days

Composition

Downeyville very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Pintwater very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—10 percent
Inclusion 2: Izo very gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Downeyville Soil

Position on landscape: Stable areas on hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pintwater Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Summits and shoulders of upper side slopes of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial fans adjacent to hills; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 105)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Pintwater Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Downeyville soil—029X022N; Pintwater soil—029X022N

TABLE 105.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Downeyville	Pintwater	Rock outcrop	1	2
Galleta	HIJA	5-20	5-20	---	10-25	---
Indian ricegrass	ORHY	5-15	5-15	---	5-10	5-10
Needlegrass	STIPA	5-10	5-10	---	2-5	---
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	---	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	---	4-10	2-6
Native annual forbs	AAFF	2-5	2-5	---	1-5	1-5
Shadscale	ATCO	15-25	15-25	---	10-25	---
Bailey greasewood	SAVEB	5-15	5-15	---	5-10	2-10
Nevada ephedra	EPNE	2-5	2-5	---	1-5	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	5-10	---
Winterfat	EULA5	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	---	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2	---
Site symbol		O29XO22N	O29XO22N	---	O29XO17N	O29XO41N
Potential production (lb/acre):						
Favorable years		300	300	---	350	500
Normal years		200	200	---	250	300
Unfavorable years		100	100	---	100	100

361—Downeyville-Pumel-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 5,600 to 6,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 115 days

Composition

Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Pumel very gravelly sandy loam, 15 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—30 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Pintwater very gravelly sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent
Inclusion 2: Stewval very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Downeyville Soil

Position on landscape: Stable areas on mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pumel Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Indian ricegrass, Bailey greasewood, shadscale
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders and side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—shadscale
Inclusion 2: Position on landscape—mountainsides, mainly north aspects; distinctive present vegetation—black sagebrush, galleta
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, dalea, shadscale, ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 106)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pumel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Pumel soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Downeyville soil—029X022N; Pumel soil—029X022N

TABLE 106.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Downeyville	Pumel	Rock outcrop	1	2	3
Galleta	HIJA	5-20	5-20	---	5-20	5-15	---
Indian ricegrass	ORHY	5-15	5-15	---	5-15	5-10	5-10
Needlegrass	STIPA	5-10	5-10	---	5-10	2-10	---
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	1-5	---
Bluegrass	POA++	---	---	---	---	2-10	---
Other perennial grasses	PPGG	5-10	5-10	---	5-10	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	---	5-10	5-10	2-6
Native annual forbs	AAFF	2-5	2-5	---	2-5	1-5	1-5
Shadscale	ATCO	15-25	15-25	---	15-25	---	---
Bailey greasewood	SAVEB	5-15	5-15	---	5-15	---	2-10
Nevada ephedra	EPNE	2-5	2-5	---	2-5	5-10	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	2-5	---
Black sagebrush	ARARN	---	---	---	---	15-20	---
Winterfat	EULA5	---	---	---	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	---	10-20	10-20	10-20
Site symbol		029X022N	029X022N	---	029X022N	029X014N	029X041N
Potential production (lb/acre):							
Favorable years		300	300	---	300	500	500
Normal years		200	200	---	200	300	300
Unfavorable years		100	100	---	100	100	100

362—Downeyville-Blacktop-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,000 to 6,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Downeyville very cobbly fine sandy loam, 8 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Blacktop very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Rock outcrop—20 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very cobbly fine sandy loam, moist, 30 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Izo very gravelly sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Gabbvally very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Stewval very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—2 percent

Downeyville Soil

Position on landscape: Summits and stable side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Eroded hillsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale
Inclusion 3: Position on landscape—hillsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 4: Position on landscape—hillsides; distinctive present vegetation—black sagebrush

Major Uses

Rangeland; wildlife habitat

Potential Native Plant Community (Table 107)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Downeyville soil—029X022N; Blacktop soil—029X033N

TABLE 107.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Downeyville	Blacktop	Rock outcrop	1	2	3	4
Galleta	HIJA	5-20	---	---	10-20	---	5-15	5-15
Indian ricegrass	ORHY	5-15	2-5	---	2-5	5-10	5-10	5-10
Needlegrass	STIPA	5-10	---	---	5-10	---	5-10	2-10
Bottlebrush squirreltail	SIHY	2-5	1-2	---	---	---	1-4	1-5
King desertgrass	BLKI	---	1-2	---	---	---	---	---
Dropseed	SPORO	---	---	---	---	---	1-5	---
Bluegrass	POA++	---	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-10	1-5	---	5-10	5-10	5-20	10-15
Native annual grasses	AAGG	1-5	1-5	---	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	2-5	---	5-10	2-6	4-10	5-10
Native annual forbs	AAFF	2-5	1-5	---	2-5	1-5	2-7	1-5
Shadscale	ATCO	15-25	40-60	---	2-5	---	---	---
Bailey greasewood	SAVEB	5-15	10-15	---	5-10	2-10	---	---
Nevada ephedra	EPNE	2-5	---	---	5-10	2-5	5-10	5-10
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	---	---	2-5
Nevada dalea	DAPO2	---	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	---	10-25	---	---	---
Anderson wolfberry	LYAN	---	---	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	---	20-30	---
Black sagebrush	ARARN	---	---	---	---	---	---	15-20
Winterfat	EULA5	---	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	5-15	---	15-25	10-20	10-20	10-20
Site symbol		029X022N	029X033N	---	029X037N	029X041N	029X010N	029X014N
Potential production (lb/acre):								
Favorable years		300	100	---	300	500	600	500
Normal years		200	50	---	200	300	400	300
Unfavorable years		100	25	---	100	100	200	100

363—Downeyville-Silverbow-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, rock pediments
Elevation: 4,800 to 5,600 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Silverbow very stony fine sandy loam, 8 to 30 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 2: Blacktop very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent
Inclusion 3: Downeyville very stony sandy loam, moist, 15 to 75 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Downeyville Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Silverbow Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, spiny menodora, galleta
Typical profile:
0 to 2 inches—very stony fine sandy loam; 5 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very stony clay loam, extremely cobbly sandy clay loam, very cobbly clay loam; 30 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
10 to 18 inches—indurated
18 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges on hills and shoulders of rock pediments
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 3: Position on landscape—hills; distinctive present vegetation—spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 108)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Silverbow soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Silverbow Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cemented pan, slope
Local roads and streets: Severe—cemented pan, slope
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Silverbow soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Downeyville soil—029X022N; Silverbow soil—029X036N

TABLE 108.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Downeyville	Silverbow	Rock outcrop	1	2	3
Galleta	HIJA	5-20	5-10	---	---	---	10-20
Indian ricegrass	ORHY	5-15	5-20	---	5-10	2-5	2-5
Needlegrass	STIPA	5-10	---	---	---	---	5-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---	1-2	---
King desertgrass	BLKI	---	---	---	---	1-2	---
Other perennial grasses	PPGG	5-10	5-10	---	5-10	1-5	5-10
Native annual grasses	AAGG	1-5	1-5	---	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	2-6	2-5	5-10
Native annual forbs	AAFF	2-5	2-5	---	1-5	1-5	2-5
Shadscale	ATCO	15-25	5-15	---	---	40-60	2-5
Bailey greasewood	SAVEB	5-15	5-15	---	2-10	10-15	5-10
Nevada ephedra	EPNE	2-5	5-10	---	2-5	---	5-10
Bud sagebrush	ARSP5	2-5	5-10	---	---	2-5	2-5
Spiny menodora	MESP2	---	10-30	---	---	---	10-25
Anderson wolfberry	LYAN	---	---	---	---	---	5-10
Nevada dalea	DAPO2	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Other shrubs	SSSS	10-20	10-20	---	10-20	5-15	15-25
Site symbol		029X022N	029X036N	---	029X041N	029X033N	029X037N
Potential production (lb/acre):							
Favorable years		300	400	---	500	100	300
Normal years		200	300	---	300	50	200
Unfavorable years		100	100	---	100	25	100

364—Downeyville-Vindicator-Advokay association

Map Unit Setting

Position on landscape: Hills, rock pediments
Elevation: 5,500 to 6,100 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 135 days

Composition

Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Vindicator very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Advokay gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel Variant gravelly loamy sand, 2 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—9 percent
Inclusion 2: Espint very gravelly loam, 30 to 50 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—3 percent
Inclusion 3: Stewval very gravelly fine sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Downeyville Soil

Position on landscape: Hillsides, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, galleta
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Vindicator Soil

Position on landscape: Hillsides, rock pediments
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, Nevada ephedra, galleta
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate

Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Advokay Soil

Position on landscape: Rock pediments, hills
Parent material: Kind—colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, galleta
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans adjacent to hills and rock pediments; distinctive present vegetation—spiny hopsage, Nevada ephedra, galleta
Inclusion 2: Position on landscape—hillsides, mainly north aspects; distinctive present vegetation—Wyoming big sagebrush, galleta
Inclusion 3: Position on landscape—hillsides, mainly north aspects; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 109)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated
Site symbol: Downeyville soil—029X022N; Vindicator soil—029X021N; Advokay soil—029X017N

TABLE 109.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tulase	Bubus	McConnel	1	2	3
Galleta	HIJA	5-20	5-15	10-25	5-20	5-15	5-15
Indian ricegrass	ORHY	5-15	5-10	5-10	5-20	5-10	5-10
Needlegrass	STIPA	5-10	2-5	2-5	---	5-10	2-10
Bottlebrush squirreltail	SIHY	2-5	1-3	2-5	---	1-4	1-5
Dropseed	SPORO	---	---	---	---	1-5	---
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-10	5-10	5-15	5-15	5-20	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	2-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	4-10	5-10	4-10	5-10
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	2-7	1-5
Shadscale	ATCO	15-25	---	10-25	---	---	---
Bailey greasewood	SAVEB	5-15	---	5-10	---	---	---
Nevada ephedra	EPNE	2-5	1-5	1-5	2-5	5-10	5-10
Bud sagebrush	ARSP5	2-5	2-5	5-10	5-15	---	2-5
Spiny hopsage	GRSP	---	5-15	---	10-20	---	---
Anderson wolfberry	LYAN	---	5-15	---	5-15	---	---
Nevada dalea	DAPO2	---	5-10	---	2-10	---	---
Fremont dalea	DAFR	---	5-10	---	2-10	---	---
Cooper wolfberry	LYCO2	---	2-5	---	2-5	---	---
Winterfat	EULA5	---	---	5-10	---	---	2-5
Wyoming big sagebrush	ARTRW*	---	---	---	---	20-30	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	1-2	0-2	---	---
Site symbol		029X022N	029X021N	029X017N	029X016N	029X010N	029X014N
Potential production (lb/acre):							
Favorable years		300	300	350	400	600	500
Normal years		200	200	250	300	400	300
Unfavorable years		100	100	100	200	200	100

365—Downeyville-Gabbvally-Malmesa association

Map Unit Setting

Position on landscape: Mountains, mesas
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 115 days

Composition

Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Gabbvally very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Malmesa very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Tokoper very gravelly loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Typic Torriorthents, 15 to 75 percent slopes (Typic Torriorthents)—2 percent

Downeyville Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, galleta
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gabbvally Soil

Position on landscape: Mainly north-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—6
Hazard of erosion: By water—moderate; by wind—moderate

Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Malmesa Soil

Position on landscape: Summits of mesas and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of mesas and mountains; distinctive present vegetation—shadscale, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 3: Position on landscape—eroded side slopes of mountains and mesas; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 110)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Severe—excess fines
Gravel: Severe—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing

TABLE 110.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Downeyville	Gabbvally	Malmesa	1	2	3
Galleta	HIJA	5-20	5-15	5-15	5-15	1-3	---
Indian ricegrass	ORHY	5-15	5-10	5-10	5-10	2-5	2-5
Needlegrass	STIPA	5-10	5-10	5-10	5-10	---	---
Bottlebrush squirreltail	SIHY	2-5	1-4	1-4	---	---	1-2
Dropseed	SPORO	---	1-5	1-5	---	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---
King desertgrass	BLKI	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-10	5-20	5-20	10-15	5-10	1-5
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	4-10	5-10	5-10	2-5
Native annual forbs	AAFF	2-5	2-7	2-7	2-5	1-5	1-5
Shadscale	ATCO	15-25	---	---	15-20	---	40-60
Bailey greasewood	SAVEB	5-15	---	---	---	---	10-15
Nevada ephedra	EPNE	2-5	5-10	5-10	5-10	1-5	---
Bud sagebrush	ARSP5	2-5	---	---	2-5	---	2-5
Wyoming big sagebrush	ARTRW*	---	20-30	20-30	---	---	---
Anderson wolfberry	LYAN	---	---	---	5-10	---	---
Nevada dalea	DAPO2	---	---	---	2-5	---	5-10
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	---
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25	5-15
Site symbol		O29XO22N	O29XO10N	O29XO10N	O29XO31N	O29XO09N	O29XO33N
Potential production (lb/acre):							
Favorable years		300	600	600	400	700	100
Normal years		200	400	400	250	500	50
Unfavorable years		100	200	200	150	200	25

Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Malmesa soil—VIIs, nonirrigated
Site symbol: Downeyville soil—029X022N; Gabbvally soil—029X010N; Malmesa soil—029X010N

367—Downeyville-Gabbvally association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,400 to 6,600 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 115 days

Composition

Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—55 percent
Gabbvally very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Wahguyhe very cobbly sandy loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—5 percent
Inclusion 2: Blacktop very gravelly fine sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 3: Lithic Haplargids, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, thermic)—3 percent
Inclusion 4: Rock outcrop—3 percent

Downeyville Soil

Position on landscape: Hills, mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, wolfberry, galleta, Nevada ephedra
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gabbvally Soil

Position on landscape: Mainly north-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra, desert needlegrass, rabbitbrush
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—6

Hazard of erosion: By water—moderate; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides and mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—eroded areas on hillsides and mountainsides; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—lower side slopes of hills and mountains; distinctive present vegetation—creosotebush, white bursage
Inclusion 4: Position on landscape—ridge breaks of hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 111)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor-depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated
Site symbol: Downeyville soil—029X022N; Gabbvally soil—029X010N

TABLE 111.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Downeyville	Gabbvally	1	2	3	4
Galleta	HIJA	5-20	5-15	5-15	---	---	---
Indian ricegrass	ORHY	5-15	5-10	5-10	2-5	1-5	---
Needlegrass	STIPA	5-10	5-10	5-10	---	3-5	---
Bottlebrush squirreltail	SIHY	2-5	1-4	1-4	1-2	1-2	---
Dropseed	SPORO	---	1-5	1-5	---	---	---
King desertgrass	BLKI	---	---	---	1-2	---	---
Other perennial grasses	PPGG	5-10	5-20	5-20	1-5	2-5	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	4-10	4-10	2-5	5-7	---
Native annual forbs	AAFF	2-5	2-7	2-7	1-5	3-6	---
Shadscale	ATCO	15-25	---	---	40-60	20-40	---
Bailey greasewood	SAVEB	5-15	---	---	10-15	---	---
Nevada ephedra	EPNE	2-5	5-10	5-10	---	5-10	---
Bud sagebrush	ARSP5	2-5	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW*	---	20-30	20-30	---	---	---
Nevada dalea	DAPO2	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---
White bursage	FRDU	---	---	---	---	2-5	---
Spiny menodora	MESP2	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	5-15	10-20	---
Site symbol		029X022N	029X010N	029X010N	029X033N	030X044N	---
Potential production (lb/acre):							
Favorable years		300	600	600	100	250	---
Normal years		200	400	400	50	150	---
Unfavorable years		100	200	200	25	50	---

368—Downeyville-Pintwater-Upspring association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,200 to 6,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 55 degrees F
Frost-free season—about 170 days

Composition

Downeyville very cobbly fine sandy loam, 30 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Pintwater very gravelly fine sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Upspring very cobbly sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—7 percent
Inclusion 2: Gabbvally very stony loam, 50 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Blacktop very gravelly fine sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent
Inclusion 4: Xeric Torriorthents, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Downeyville Soil

Position on landscape: Stable areas on hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta, desert needlegrass
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pintwater Soil

Position on landscape: Eroded hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, desert needlegrass
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 11 inches—extremely gravelly fine sandy loam, very stony fine sandy loam, very cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches

Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Upspring Soil

Position on landscape: Lower side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Creosotebush, white bursage
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 60 percent cobbles and stones and 35 to 45 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
2 to 12 inches—very gravelly fine sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
12 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, cliffrose
Inclusion 3: Position on landscape—mountainsides, mainly north aspects; distinctive present vegetation—Wyoming big sagebrush
Inclusion 4: Position on landscape—eroded hillsides; distinctive present vegetation—sparse shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 112)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Akela soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Upspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines

TABLE 112.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Downeyville	Pintwater	Upspring	1	2	3	4
Galleta	HIJA	5-20	5-20	---	---	5-15	---	1-3
Indian ricegrass	ORHY	5-15	5-15	1-5	---	5-10	2-5	2-5
Needlegrass	STIPA	5-10	5-10	3-5	---	5-10	---	---
Bottlebrush squirreltail	SIHY	2-5	2-5	1-2	---	1-4	1-2	---
Dropseed	SPORO	---	---	---	---	1-5	---	---
King desertgrass	BLKI	---	---	---	---	---	1-2	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	2-5	---	5-20	1-5	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-7	---	4-10	2-5	5-10
Native annual forbs	AAFF	2-5	2-5	3-6	---	2-7	1-5	1-5
Shadscale	ATCO	15-25	15-25	20-40	---	---	40-60	---
Bailey greasewood	SAVEB	5-15	5-15	---	---	---	10-15	---
Nevada ephedra	EPNE	2-5	2-5	5-10	---	5-10	---	1-5
Bud sagebrush	ARSP5	2-5	2-5	---	---	---	2-5	---
Anderson wolfberry	LYAN	---	---	5-10	---	---	---	---
White bursage	FRDU	---	---	2-5	---	---	---	---
Spiny menodora	MESP2	---	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	20-30	---	---
Nevada dalea	DAPO2	---	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20	5-15	10-25
Site symbol		029X022N	029X022N	030X044N	---	029X010N	029X033N	029X009N
Potential production (lb/acre):								
Favorable years		300	300	250	---	600	100	700
Normal years		200	200	150	---	400	50	500
Unfavorable years		100	100	50	---	200	25	200

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—seepage, thin layer

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated; Upspring soil—VIIs, nonirrigated

Site symbol: Downeyville soil—029X022N; Pintwater soil—029X022N; Upspring soil—030X044N

369—Downeyville-Advokay-Pintwater association

Map Unit Setting

Position on landscape: Hills
Elevation: 5,200 to 5,800 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Advokay gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—30 percent
Pintwater very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very cobbly fine sandy loam, moist, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Stewval very gravelly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Downeyville Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta, Nevada ephedra, Anderson wolfberry
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Advokay Soil

Position on landscape: Hills
Parent material: Kind—colluvium, residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, Nevada ephedra, galleta, Anderson wolfberry
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe

Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pintwater Soil

Position on landscape: Eroded areas on hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, bud sagebrush, galleta
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of hills; distinctive present vegetation—spiny menodora, Nevada ephedra
Inclusion 2: Position on landscape—side slopes of hills; distinctive present vegetation—barren
Inclusion 3: Position on landscape—hills; distinctive present vegetation—black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 113)

Elements of Wildlife Habitat

Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones

TABLE 113.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Downeyville	Advokay	Pintwater	1	2	3
Galleta	HIJA	5-20	10-25	5-20	10-20	---	5-15
Indian ricegrass	ORHY	5-15	5-10	5-15	2-5	---	5-10
Needlegrass	STIPA	5-10	2-5	5-10	5-10	---	2-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	---	1-5
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	---	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	1-5
Perennial forbs	PPFF	5-10	4-10	5-10	5-10	---	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	2-5	---	1-5
Shadscale	ATCO	15-25	10-25	15-25	2-5	---	---
Bailey greasewood	SAVEB	5-15	5-10	5-15	5-10	---	---
Nevada ephedra	EPNE	2-5	1-5	2-5	5-10	---	5-10
Bud sagebrush	ARSP5	2-5	5-10	2-5	2-5	---	2-5
Winterfat	EULA5	---	5-10	---	---	---	2-5
Spiny menodora	MESP2	---	---	---	10-25	---	---
Anderson wolfberry	LYAN	---	---	---	5-10	---	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Other shrubs	SSSS	10-20	10-20	10-20	15-25	---	10-20
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		029X022N	029X017N	029X022N	029X037N	---	029X014N
Potential production (lb/acre):							
Favorable years		300	350	300	300	---	500
Normal years		200	250	200	200	---	300
Unfavorable years		100	100	100	100	---	100

Interpretive Groups

Capability classification: Downeyville soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated

Site symbol: Downeyville soil—029X022N; Advokay soil—029X017N; Pintwater soil—029X022N

370—Rustigate-Louderback-Cirac association

Map Unit Setting

Position on landscape: Alluvial flats
Elevation: 4,700 to 4,900 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Rustigate loam, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—45 percent
Louderback sand, 0 to 2 percent slopes (Aquic Torriorthents - sandy, mixed, mesic)—25 percent
Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—8 percent
Inclusion 2: Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaquepts - fine-silty, mixed (calcareous), mesic)—7 percent

Rustigate Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass, rubber rabbitbrush
Typical profile:
0 to 11 inches—loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Louderback Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Inland saltgrass, black greasewood, alkali sacaton
Typical profile:
0 to 3 inches—sand; single grain; loose; very strongly alkaline (pH 9.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-2, A-3
3 to 40 inches—sand; single grain; loose; very strongly alkaline (pH 9.2); nonsaline (less than 4 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-2, A-3
40 to 60 inches or more—very gravelly sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Cirac Soil

Position on landscape:: Upper part of alluvial flats and adjacent fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:

0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4

4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stabilized sand dunes on alluvial flats; distinctive present vegetation—black greasewood
Inclusion 2: Position on landscape—alluvial flats; distinctive present vegetation—inland saltgrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 114)

Elements of Wildlife Habitat

Suitability of Rustigate soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Louderback soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—very poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Rustigate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess sodium, soil blowing, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping
(Louderback Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, too sandy, excess sodium
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—frost action, flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, piping
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess sodium, excess salt

Interpretive Groups

Capability classification: Rustigate soil—IVw, irrigated, and VIIw, nonirrigated; Louderback soil—VIIw, nonirrigated; Cirac soil—VIIs, nonirrigated
Site symbol: Rustigate soil—029X004N; Louderback soil—029X002N; Cirac soil—027X025N

TABLE 114.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Rustigate	Louderback	Cirac	1	2
Alkali sacaton	SPAI	15-30	15-40	---	---	15-40
Inland saltgrass	DIST	5-15	10-15	5-10	---	10-15
Baltic rush	JUBA	5-10	5-15	---	---	5-15
Basin wildrye	ELCI2	5-10	2-5	---	---	2-5
Western wheatgrass	AGSM	1-5	---	---	---	---
Giantreed	ARDO4	---	2-5	---	---	2-5
Alkali cordgrass	SPGR	---	2-5	---	---	2-5
Indian ricegrass	ORHY	---	---	---	10-20	---
Needlegrass	STIPA	---	---	---	5-10	---
Other perennial grasses	PPGG	8-20	10-20	5-15	2-5	10-20
Native annual grasses	AAGG	1-5	2-6	---	1-3	2-6
Perennial forbs	PPFF	2-8	2-6	3-7	2-5	2-6
Native annual forbs	AAFF	1-5	1-5	---	2-5	1-5
Torrey quailbush	ATTO	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	5-10	---	---	---	---
Basin big sagebrush	ARTRT*	1-5	---	---	---	---
Black greasewood	SAVE4	1-5	---	40-60	10-40	---
Shadscale	ATCO	---	---	2-10	---	---
Seepweed	SUAED	---	---	2-5	---	---
Other shrubs	SSSS	5-15	2-10	5-15	5-20	2-10
Site symbol		O29XO04N	O29XO02N	O27XO25N	O27XO16N	O29XO02N
Potential production (lb/acre):						
Favorable years		2,000	3,300	400	300	3,300
Normal years		1,400	2,200	200	200	2,200
Unfavorable years		600	1,000	50	50	1,000

371—Rustigate-Slaw-Playas association

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Rustigate loam, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—40 percent
Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—30 percent
Playas—15 percent
Contrasting inclusions as follows—
Inclusion 1: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—7 percent
Inclusion 2: Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Typic Halaquepts, 0 to 2 percent slopes (Typic Halaquepts - fine, montmorillonitic (calcareous), mesic)—3 percent

Rustigate Soil

Position on landscape: Lower lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass, black greasewood, Baltic rush
Typical profile:
0 to 11 inches—loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Slaw Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, seepweed, shadscale
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML; estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats adjacent to lake plains; distinctive present vegetation—black greasewood, shadscale

Inclusion 2: Position on landscape—alluvial flats adjacent to lake plains; distinctive present vegetation—sparse black greasewood, shadscale

Inclusion 3: Position on landscape—lake plains; distinctive present vegetation—sedges

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 115)

Elements of Wildlife Habitat

Suitability of Rustigate soil for named elements:

TABLE 115.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rustigate	Slaw	Playas	1	2	3
Alkali sacaton	SPAI	15-30	---	---	---	---	---
Inland saltgrass	DIST	5-15	5-10	---	5-10	---	---
Baltic rush	JUBA	5-10	---	---	---	---	---
Basin wildrye	ELCI2	5-10	---	---	---	---	---
Western wheatgrass	AGSM	1-5	---	---	---	---	---
Indian ricegrass	ORHY	---	---	---	---	2-5	---
Bottlebrush squirreltail	SIHY	---	---	---	---	1-2	---
Galleta	HIJA	---	---	---	---	1-2	---
Sedge	CAREX	---	---	---	---	---	10-30
Rush	JUNCU	---	---	---	---	---	10-20
Nevada bluegrass	PONE3	---	---	---	---	---	5-15
Other perennial grasses	PPGG	8-20	5-15	---	5-15	2-5	5-10
Native annual grasses	AAGG	1-5	---	---	---	2-5	2-5
Perennial forbs	PPFF	2-8	3-7	---	3-7	2-6	10-15
Native annual forbs	AAFF	1-5	---	---	---	3-5	2-5
Torrey quailbush	ATTO	5-10	---	---	---	---	---
Rubber rabbitbrush	CHNA2	5-10	---	---	---	---	1-2
Basin big sagebrush	ARTRT*	1-5	---	---	---	---	---
Black greasewood	SAVE4	1-5	40-60	---	40-60	10-20	---
Shadscale	ATCO	---	2-10	---	2-10	30-50	---
Seepweed	SUAED	---	2-5	---	2-5	---	---
Bailey greasewood	SAVEB	---	---	---	---	5-10	---
Other shrubs	SSSS	5-15	5-15	---	5-15	10-25	2-5
Willow	SALIX	---	---	---	---	---	1-2
Site symbol		029X004N	027X025N	---	027X025N	029X063N	029X001N
Potential production (lb/acre):							
Favorable years		2,000	400	---	400	200	4,000
Normal years		1,400	200	---	200	100	3,000
Unfavorable years		600	50	---	50	50	1,200

Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Slaw soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Rustigate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess sodium, soil blowing, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping
(Slaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—too clayey, flooding
Local roads and streets: Poor—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt

Interpretive Groups

Capability classification: Rustigate soil—IVw, irrigated, and VIIw, nonirrigated; Slaw soil—VIIw, nonirrigated; Playas—VIIIw
Site symbol: Rustigate soil—029X004N; Slaw soil—027X025N

372—Rustigate-Nuyobe association

Map Unit Setting

Position on landscape: Lake plains
Elevation: 4,700 to 5,100 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Rustigate loam, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—35 percent
Rustigate silt loam, ponded, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—30 percent
Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaquepts - fine-silty, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Kawich fine sand, 2 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—7 percent
Inclusion 2: Settlement silty clay loam, 0 to 2 percent slopes (Aeric Halaquepts - fine, montmorillonitic (calcareous), mesic)—6 percent
Inclusion 3: Fluvaquentic Halaquolls, 0 to 2 percent slopes (Fuvaquentic Halaquolls)—2 percent

Rustigate Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali, sacaton, inland saltgrass, black greasewood, Baltic rush
Typical profile:
0 to 11 inches—loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Rustigate, Ponded, Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass, black greasewood, Baltic rush
Typical profile:
0 to 11 inches—silt loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Nuyobe Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth

Dominant present vegetation: Alkali sacaton, inland saltgrass, black greasewood, Baltic rush
Typical profile:
0 to 4 inches—silt loam; massive; soft, very friable; very strongly alkaline (pH 9.6); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6
4 to 60 inches or more—stratified very fine sandy loam to silty clay loam; massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6
Depth to seasonal high water table: 24 to 36 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 11 to 12 inches
Water supplying capacity: 18 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—4L
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: High

Contrasting Inclusions

Inclusion 1: Position on landscape—sand dunes on lake plains; distinctive present vegetation—black greasewood, Indian ricegrass
Inclusion 2: Position on landscape—lake plains; distinctive present vegetation—inland saltgrass, alkali sacaton
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—buffaloberry

Major Uses

Irrigated cropland, rangeland, wildlife habitat

Potential Native Plant Community (Table 116)

Elements of Wildlife Habitat

Suitability of Rustigate soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Rustigate, ponded, soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Nuyobe soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Rustigate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess sodium, soil blowing, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping
(Rustigate, Ponded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess sodium, soil blowing, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping
(Nuyobe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, excess salt, excess sodium
Shallow excavations: Severe—wetness
Local roads and streets: Severe—frost action
Roadfill: Poor—low strength, shrink-swell, wetness
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess sodium, excess salt

Interpretive Groups

Capability classification: Rustigate soil—IVw, irrigated, and VIIw, nonirrigated; Rustigate, ponded, soil—IVw, irrigated, and VIIw, nonirrigated; Nuyobe soil—VIIw, nonirrigated
Site symbol: Rustigate soil—029X004N; Rustigate, ponded, soil—029X002N; Nuyobe soil—029X002N

TABLE 116.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rustigate	Rustigate, ponded	Nuyobe	1	2	3
Alkali sacaton	SPAI	15-30	15-40	15-40	---	15-40	---
Inland saltgrass	DIST	5-15	10-15	10-15	---	10-15	---
Baltic rush	JUBA	5-10	5-15	5-15	---	5-15	---
Basin wildrye	ELCI2	5-10	2-5	2-5	---	2-5	---
Western wheatgrass	AGSM	1-5	---	---	---	---	---
Giantreed	ARDO4	---	2-5	2-5	---	2-5	---
Alkali cordgrass	SPGR	---	2-5	2-5	---	2-5	---
Indian ricegrass	ORHY	---	---	---	10-20	---	---
Needlegrass	STIPA	---	---	---	5-10	---	---
Sedge	CAREX	---	---	---	---	---	10-30
Rush	JUNCU	---	---	---	---	---	10-20
Nevada bluegrass	PONE3	---	---	---	---	---	5-15
Other perennial grasses	PPGG	8-20	10-20	10-20	2-5	10-20	5-10
Native annual grasses	AAGG	1-5	2-6	2-6	1-3	2-6	2-5
Perennial forbs	PPFF	2-8	2-6	2-6	2-5	2-6	10-15
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	1-5	2-5
Torrey quailbush	ATTO	5-10	---	---	---	---	---
Rubber rabbitbrush	CHNA2	5-10	---	---	---	---	1-2
Basin big sagebrush	ARTRT*	1-5	---	---	---	---	---
Black greasewood	SAVE4	1-5	---	---	10-40	---	---
Other shrubs	SSSS	5-15	2-10	2-10	5-20	2-10	2-5
Willow	SALIX	---	---	---	---	---	1-2
Site symbol		029X004N	029X002N	029X002N	027X016N	029X002N	029X001N
Potential production (lb/acre):							
Favorable years		2,000	3,300	3,300	300	3,300	4,000
Normal years		1,400	2,200	2,200	200	2,200	3,000
Unfavorable years		600	1,000	1,000	50	1,000	1,200

373—Rustigate-Kawich-Cirac association

Map Unit Setting

Position on landscape: Alluvial flats, lake plains
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Rustigate loam, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—35 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—30 percent
Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly sand, alkali, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Louderback sand, 0 to 2 percent slopes (Aquic Torriorthents - sandy, mixed, mesic)—5 percent
Inclusion 3: Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaqupets - fine-silty, mixed (calcareous), mesic)—4 percent

Rustigate Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass, black greasewood, Baltic rush
Typical profile:
0 to 11 inches—loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Kawich Soil

Position on landscape: Sand dunes on alluvial flats and lake plains
Parent material: Eolian material
Slope features: Length—short; shape—smooth
Dominant present vegetation: Black greasewood, shadscale, alkali sacaton, Indian ricegrass
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to

30); estimated Unified classification - SM; estimated AASHTO classification - A-4

4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats and adjacent fan skirts; distinctive present vegetation—black greasewood, shadscale
Inclusion 2: Position on landscape—alluvial flats; distinctive present vegetation—inland saltgrass
Inclusion 3: Position on landscape—lake plains; distinctive present vegetation—inland saltgrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 117)

Elements of Wildlife Habitat

Suitability of Rustigate soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Rustigate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess sodium, soil blowing, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping
(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing, excess sodium
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium

Interpretive Groups

Capability classification: Rustigate soil—IVw, irrigated, and VIIw, nonirrigated; Kawich soil—IVs, irrigated, and VIIs, nonirrigated; Cirac soil—VIIs, nonirrigated
Site symbol: Rustigate soil—029X004N; Kawich soil—027X016N; Cirac soil—029X024N

TABLE 117.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rustigate	Kawich	Cirac	1	2	3
Alkali sacaton	SPAI	15-30	---	10-15	---	15-40	15-40
Inland saltgrass	DIST	5-15	---	1-5	---	10-15	10-15
Baltic rush	JUBA	5-10	---	---	---	5-15	5-15
Basin wildrye	ELCI2	5-10	---	5-10	---	2-5	2-5
Western wheatgrass	AGSM	1-5	---	---	---	---	---
Indian ricegrass	ORHY	---	10-20	---	2-5	---	---
Needlegrass	STIPA	---	5-10	---	---	---	---
Bottlebrush squirreltail	SIHY	---	---	---	1-2	---	---
Galleta	HIJA	---	---	---	1-2	---	---
Giantreed	ARDO4	---	---	---	---	2-5	2-5
Alkali cordgrass	SPGR	---	---	---	---	2-5	2-5
Other perennial grasses	PPGG	8-20	2-5	5-15	2-5	10-20	10-20
Native annual grasses	AAGG	1-5	1-3	2-5	2-5	2-6	2-6
Perennial forbs	PPFF	2-8	2-5	5-10	2-6	2-6	2-6
Native annual forbs	AAFF	1-5	2-5	2-5	3-5	1-5	1-5
Torrey quailbush	ATTO	5-10	---	---	---	---	---
Rubber rabbitbrush	CHNA2	5-10	---	2-5	---	---	---
Basin big sagebrush	ARTRT*	1-5	---	2-5	---	---	---
Black greasewood	SAVE4	1-5	10-40	5-15	10-20	---	---
Shadscale	ATCO	---	---	15-30	30-50	---	---
Cooper wolfberry	LYCO2	---	---	5-10	---	---	---
Anderson wolfberry	LYAN	---	---	5-10	---	---	---
Fourwing saltbush	ATCA2	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	---	5-10	---	---
Other shrubs	SSSS	5-15	5-20	10-20	10-25	2-10	2-10
Site symbol		029X004N	027X016N	029X024N	029X063N	029X002N	029X002N
Potential production (lb/acre):							
Favorable years		2,000	300	800	200	3,300	3,300
Normal years		1,400	200	350	100	2,200	2,200
Unfavorable years		600	50	150	50	1,000	1,000

380—Nuyobe-Rustigate-Playas association

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,700 to 5,100 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaquepts - fine-silty, mixed (calcareous), mesic)—40 percent
Rustigate loam, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—30 percent
Playas—15 percent
Contrasting inclusions as follows—
Inclusion 1: Youngston silt loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—9 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—4 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—2 percent

Nuyobe Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass
Typical profile:
0 to 4 inches—silt loam; massive; soft, very friable; very strongly alkaline (pH 9.6); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6
4 to 60 inches or more—stratified very fine sandy loam to silty clay loam; massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6
Depth to seasonal high water table: 24 to 36 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 11 to 12 inches
Water supplying capacity: 18 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—4L
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: High

Rustigate Soil

Position on landscape: Alluvial flats, lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass, rubber rabbitbrush
Typical profile:
0 to 11 inches—loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin wildrye, inland saltgrass, fourwing saltbush

Inclusion 2: Position on landscape—upper part of alluvial flats; distinctive present vegetation—black greasewood, shadscale

Inclusion 3: Position on landscape—stabilized sand dunes on basin floors; distinctive present vegetation—black greasewood, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 118)

Elements of Wildlife Habitat

Suitability of Nuyobe soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Suitability of Rustigate soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

TABLE 118.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Nuyobe	Rustigate	Playas	1	2	3
Alkali sacaton	SPAI	15-40	15-30	---	15-30	---	---
Inland saltgrass	DIST	10-15	5-15	---	5-15	5-10	---
Baltic rush	JUBA	5-15	5-10	---	5-10	---	---
Basin wildrye	ELCI2	2-5	5-10	---	5-10	---	---
Giantreed	ARDO4	2-5	---	---	---	---	---
Alkali cordgrass	SPGR	2-5	---	---	---	---	---
Western wheatgrass	AGSM	---	1-5	---	1-5	---	---
Indian ricegrass	ORHY	---	---	---	---	---	10-20
Needlegrass	STIPA	---	---	---	---	---	5-10
Other perennial grasses	PPGG	10-20	8-20	---	8-20	5-15	2-5
Native annual grasses	AAGG	2-6	1-5	---	1-5	---	1-3
Perennial forbs	PPFF	2-6	2-8	---	2-8	3-7	2-5
Native annual forbs	AAFF	1-5	1-5	---	1-5	---	2-5
Torrey quailbush	ATTO	---	5-10	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	5-10	---	5-10	---	---
Basin big sagebrush	ARTRT*	---	1-5	---	1-5	---	---
Black greasewood	SAVE4	---	1-5	---	1-5	40-60	10-40
Shadscale	ATCO	---	---	---	---	2-10	---
Seepweed	SUAED	---	---	---	---	2-5	---
Other shrubs	SSSS	2-10	5-15	---	5-15	5-15	5-20
Site symbol		029X002N	029X004N	---	029X004N	027X025N	027X016N
Potential production (lb/acre):							
Favorable years		3,300	2,000	---	2,000	400	300
Normal years		2,200	1,400	---	1,400	200	200
Unfavorable years		1,000	600	---	600	50	50

Ratings for Selected Uses

(Nuyobe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess salt, excess sodium, soil blowing
Shallow excavations: Severe—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—low strength, shrink-swell, wetness
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium
(Rustigate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess sodium, soil blowing, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping

Interpretive Groups

Capability classification: Nuyobe soil—VIIw, nonirrigated; Rustigate soil—IVw, irrigated, and VIIw, nonirrigated; Playas—VIIIw
Site symbol: Nuyobe soil—029X002N; Rustigate soil—029X004N

390—Noyson-Stumble-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,500 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Noyson gravelly sand, 0 to 4 percent slopes (Entic Durorthids - coarse-loamy, mixed, mesic)—40 percent
Stumble loamy sand, 0 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—30 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Lathrop very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Belted gravelly loamy sand, 2 to 4 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—5 percent
Inclusion 3: Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—4 percent

Noyson Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SP-SM; estimated AASHTO classification - A-1
3 to 28 inches—stratified sandy loam to gravelly sand; 0 to 5 percent cobbles and stones and 10 to 40 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
28 to 45 inches—cemented
Range in depth to cemented layer: 20 to 36 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—2; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stumble Soil

Position on landscape: Sand sheets on fan piedmonts
Parent material: Eolian material, mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Indian ricegrass, Bailey greasewood
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, burrobrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—fan skirts adjacent to fan piedmonts; distinctive present vegetation—shadscale, Black greasewood
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 119)

Elements of Wildlife Habitat

Suitability of Noyson soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Noyson Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Fair—thin layer
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Noyson soil—IVs, irrigated, and VIIs, nonirrigated; Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Noyson soil—029X017N; Stumble soil—029X012N; Izo soil—029X041N

TABLE 119.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Noyson	Stumble	Izo	1	2	3
Galleta	HIJA	10-25	2-5	---	5-10	10-25	10-25
Indian ricegrass	ORHY	5-10	20-30	5-10	5-20	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---	2-5	2-5
Needlegrass	STIPA	2-5	2-5	---	---	2-5	2-5
Dropseed	SPORO	---	5-25	---	---	---	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	2-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	2-6	5-10	4-10	4-10
Native annual forbs	AAFF	1-5	2-5	1-5	2-5	1-5	1-5
Shadscale	ATCO	10-25	---	---	5-15	10-25	10-25
Bailey greasewood	SAVEB	5-10	---	2-10	5-15	5-10	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10	5-10
Winterfat	EULA5	5-10	5-20	---	---	5-10	5-10
Nevada ephedra	EPNE	1-5	---	2-5	5-10	1-5	1-5
Fourwing saltbush	ATCA2	---	15-25	5-15	---	---	---
Spiny hopsage	GRSP	---	1-5	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Spiny menodora	MESP2	---	---	---	10-30	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	---	---	1-2	1-2
Site symbol		029X017N	029X012N	029X041N	029X036N	029X017N	029X017N
Potential production (lb/acre):							
Favorable years		350	500	500	400	350	350
Normal years		250	350	300	300	250	250
Unfavorable years		100	200	100	100	100	100

391—Noyson-Lathrop-Itme association

Map Unit Setting

Position on landscape: Fan skirts, fan piedmonts
Elevation: 5,300 to 5,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Noyson gravelly sandy loam, 2 to 4 percent slopes (Entic Durorthids - coarse-loamy, mixed, mesic)—45 percent
Lathrop very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—30 percent
Itme gravelly loamy sand, dry, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 2: Stumble loamy sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—2 percent

Noyson Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 28 inches—stratified sandy loam to gravelly sand; 0 to 5 percent cobbles and stones and 10 to 40 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
28 to 45 inches—cemented
Range in depth to cemented layer: 20 to 36 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches

Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Fan skirts, inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Indian ricegrass, shadscale, bud sagebrush
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—fourwing saltbush, burrobrush
Inclusion 2: Position on landscape—side slopes of drainageways; distinctive present vegetation—Indian ricegrass, fourwing saltbush, dalea

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 120)

Elements of Wildlife Habitat

Suitability of Noyson soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Noyson Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Fair—thin layer
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source

TABLE 120.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Noyson	Lathrop	Itme	1	2
Galleta	HIJA	10-25	5-10	10-25	---	2-5
Indian ricegrass	ORHY	5-10	5-20	5-10	5-10	20-30
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	---
Needlegrass	STIPA	2-5	---	2-5	---	2-5
Dropseed	SPORO	---	---	---	---	5-25
Other perennial grasses	PPGG	5-15	5-10	5-15	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	2-5
Perennial forbs	PPFF	4-10	5-10	4-10	2-6	5-10
Native annual forbs	AAFF	1-5	2-5	1-5	1-5	2-5
Shadscale	ATCO	10-25	5-15	10-25	---	---
Bailey greasewood	SAVEB	5-10	5-15	5-10	2-10	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10
Winterfat	EULA5	5-10	---	5-10	---	5-20
Nevada ephedra	EPNE	1-5	5-10	1-5	2-5	---
Spiny menodora	MESP2	---	10-30	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	5-15	15-25
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Spiny hopsage	GRSP	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	1-2	---	---
Site symbol		029X017N	029X036N	029X017N	029X041N	029X012N
Potential production (lb/acre):						
Normal years		350	400	350	500	500
Favorable years		250	300	250	300	350
Unfavorable years		100	100	100	100	200

Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Noyson soil—IVs, irrigated, and VIIs, nonirrigated; Lathrop soil—VIIs, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated

Site symbol: Noyson soil—029X017N; Lathrop soil—029X036N; Itme soil—029X017N

400—Annaw-Wardenot-Ardivey association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Annaw very gravelly loamy sand, 2 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—45 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Haplic Durargids, 2 to 4 percent slopes (Haplic Durargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Terlco very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Annaw Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta, spiny menodora
Typical profile:
0 to 3 inches—very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
11 to 60 inches or more—stratified extremely gravelly loamy coarse sand to very gravelly sandy loam; 0 to 25 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Lower areas on fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches

Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Bailey greasewood, shadscale, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora, Bailey greasewood, shadscale, galleta
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, spiny menodora
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion of minor extent: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, Wyoming big sagebrush
Inclusion of minor extent: Position on landscape—hills, rock pediments; distinctive present vegetation—spiny menodora

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 121)

Elements of Wildlife Habitat

Suitability of Annaw soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Annaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source

TABLE 121.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Annaw	Wardenot	Ardivey	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-20	5-20	5-20	5-10
Galleta	HIJA	5-10	10-25	5-10	5-10	5-10	---
Bottlebrush squirreltail	SIHY	---	2-5	---	---	---	---
Needlegrass	STIPA	---	2-5	---	---	---	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	4-10	5-10	5-10	5-10	2-6
Native annual forbs	AAFF	2-5	1-5	2-5	2-5	2-5	1-5
Spiny menodora	MESP2	10-30	---	10-30	10-30	10-30	---
Bailey greasewood	SAVEB	5-15	5-10	5-15	5-15	5-15	2-10
Shadscale	ATCO	5-15	10-25	5-15	5-15	5-15	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	5-10	---
Nevada ephedra	EPNE	5-10	1-5	5-10	5-10	5-10	2-5
Winterfat	EULA5	---	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		029X036N	029X017N	029X036N	029X036N	029X036N	029X041N
Potential production (lb/acre):							
Favorable years		400	350	400	400	400	500
Normal years		300	250	300	300	300	300
Unfavorable years		100	100	100	100	100	100

Embankments, dikes, and levees: Severe—seepage, large stones

(Ardivey Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, small stones

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—large stones

Roadfill: Fair—large stones

Sand: Improbable source—small stones

Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Annaw soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated

Site symbol: Annaw soil—029X036N; Wardenot soil—029X017N; Ardivey soil—029X036N

402—Annaw-Wardenot-Pintwater association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments, hills
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Annaw very gravelly loamy sand, dry, 4 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—35 percent
Wardenot very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Pintwater very gravelly fine sandy loam, 4 to 15 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Haplic Durargids, 2 to 8 percent slopes (Haplic Durargids - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Oricto very gravelly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—2 percent

Annaw Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 3 inches—very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
11 to 60 inches or more—stratified extremely gravelly loamy coarse sand to very gravelly sandy loam; 0 to 25 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pintwater Soil

Position on landscape: Hills, rock pediment remnants
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 11 inches—extremely gravelly fine sandy loam, very stony fine sandy loam, very cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush
Inclusion 2: Position on landscape—inset fans, drainageways; distinctive present vegetation—burrobrush
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—sparse shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 122)

Elements of Wildlife Habitat

Suitability of Annaw soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Annaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

TABLE 122.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Annaw	Wardenot	Pintwater	1	2	3
Galleta	HIJA	10-25	10-25	5-20	10-25	---	---
Indian ricegrass	ORHY	5-10	5-10	5-15	5-10	5-10	1-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	---	---
Needlegrass	STIPA	2-5	2-5	5-10	2-5	---	---
King desertgrass	BLKI	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	4-10	4-10	5-10	4-10	2-6	5-10
Native annual forbs	AAFF	1-5	1-5	2-5	1-5	1-5	2-5
Shadscale	ATCO	10-25	10-25	15-25	10-25	---	20-40
Bailey greasewood	SAVEB	5-10	5-10	5-15	5-10	2-10	10-15
Bud sagebrush	ARSP5	5-10	5-10	2-5	5-10	---	---
Winterfat	EULA5	5-10	5-10	---	5-10	---	---
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	5-15
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	1-2	1-2	---	1-2	---	---
Site symbol		029X017N	029X017N	029X022N	029X017N	029X041N	029X032N
Potential production (lb/acre):							
Favorable years		350	350	300	350	500	150
Normal years		250	250	200	250	300	100
Unfavorable years		100	100	100	100	100	50

Interpretive Groups

Capability classification: Annaw soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated

Site symbol: Annaw soil—029X017N; Wardenot soil—029X017N; Pintwater soil—029X022N

410—Pintwater-Wardenot-Unsel association

Map Unit Setting

Position on landscape: Hills, rock pediments, fan piedmonts
Elevation: 5,500 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Pintwater very cobbly fine sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—35 percent
Wardenot very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—5 percent
Inclusion 2: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Terlco very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—5 percent

Pintwater Soil

Position on landscape: Hills, rock pediment remnants
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans, lower parts of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small ridges and peaks on hills and rock pediment remnants; distinctive present vegetation—barren
Inclusion 2: Position on landscape—drainageways, inset fans; distinctive present vegetation—burrobrush
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 123)

Elements of Wildlife Habitat

Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source

TABLE 123.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Pintwater	Wardenot	Unsel	1	2	3
Galleta	HIJA	5-20	10-25	10-25	---	---	5-10
Indian ricegrass	ORHY	5-15	5-10	5-10	---	5-10	5-20
Needlegrass	STIPA	5-10	2-5	2-5	---	---	---
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	---	---
Other perennial grasses	PPGG	5-10	5-15	5-15	---	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	2-4	1-5
Perennial forbs	PPFF	5-10	4-10	4-10	---	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	1-5	---	1-5	2-5
Shadscale	ATCO	15-25	10-25	10-25	---	---	5-15
Bailey greasewood	SAVEB	5-15	5-10	5-10	---	2-10	5-15
Nevada ephedra	EPNE	2-5	1-5	1-5	---	2-5	5-10
Bud sagebrush	ARSP5	2-5	5-10	5-10	---	---	5-10
Winterfat	EULA5	---	5-10	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---
Spiny menodora	MESP2	---	---	---	---	---	10-30
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20	10-20
Joshua-tree	YUBR	---	1-2	1-2	---	---	---
Site symbol		029X022N	029X017N	029X017N	---	029X041N	029X036N
Potential production (lb/acre):							
Favorable years		300	350	350	---	500	400
Normal years		200	250	250	---	300	300
Unfavorable years		100	100	100	---	100	100

Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Pintwater soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Unsel soil—VIIc, nonirrigated

Site symbol: Pintwater soil—029X022N; Wardenot soil—029X017N; Unsel soil—029X017N

411—Pintwater-Theriot-Wardenot association

Map Unit Setting

Position on landscape: Hills, fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Pintwater very cobbly fine sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Theriot very gravelly sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—30 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—8 percent
Inclusion 2: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent

Pintwater Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, Bailey greasewood, galleta, bud sagebrush
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Theriot Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, spiny menodora, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, Bailey greasewood
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 124)

Elements of Wildlife Habitat

Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones
(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, large stones
Sand: Improbable source—large stones, excess fines
Gravel: Improbable source—large stones, excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Pintwater soil—VIIs, nonirrigated; Theriot soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Pintwater soil—029X022N; Theriot soil—029X022N; Wardenot soil—029X017N

TABLE 124.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Pintwater	Theriot	Wardenot	1	2
Galleta	HIJA	5-20	5-20	10-25	10-25	---
Indian ricegrass	ORHY	5-15	5-15	5-10	5-10	5-10
Needlegrass	STIPA	5-10	5-10	2-5	2-5	---
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-15	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	4-10	4-10	2-6
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	1-5
Shadscale	ATCO	15-25	15-25	10-25	10-25	---
Bailey greasewood	SAVEB	5-15	5-15	5-10	5-10	2-10
Nevada ephedra	EPNE	2-5	2-5	1-5	1-5	2-5
Bud sagebrush	ARSP5	2-5	2-5	5-10	5-10	---
Winterfat	EULA5	---	---	5-10	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	1-2	1-2	---
Site symbol		O29XO22N	O29XO22N	O29XO17N	O29XO17N	O29XO41N
Potential production (lb/acre):						
Favorable years		300	300	350	350	500
Normal years		200	200	250	250	300
Unfavorable years		100	100	100	100	100

413—Pintwater-Blacktop association

Map Unit Setting

Position on landscape: Hills
Elevation: 5,000 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 125 days

Composition

Pintwater very gravelly fine sandy loam, moist, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—65 percent
Blacktop very gravelly sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—8 percent
Inclusion 2: Pintwater very stony sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent

Pintwater Soil

Position on landscape: Ridges and side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, bud sagebrush, galleta
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 11 inches—extremely gravelly fine sandy loam, very stony fine sandy loam, very cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Eroded side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges on hills; distinctive present vegetation—barren
Inclusion 2: Position on landscape—side slopes of hills; distinctive present vegetation—shadscale, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 125)

Elements of Wildlife Habitat

Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pintwater Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones

(Blacktop Soil)

TABLE 125.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Pintwater	Blacktop	1	2
Galleta	HIJA	10-20	---	---	5-20
Needlegrass	STIPA	5-10	---	---	5-10
Indian ricegrass	ORHY	2-5	2-5	---	5-15
King desertgrass	BLKI	---	1-2	---	---
Bottlebrush squirreltail	SIHY	---	1-2	---	2-5
Other perennial grasses	PPGG	5-10	1-5	---	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5
Perennial forbs	PPFF	5-10	2-5	---	5-10
Native annual forbs	AAFF	2-5	1-5	---	2-5
Spiny menodora	MESP2	10-25	---	---	---
Nevada ephedra	EPNE	5-10	---	---	2-5
Bailey greasewood	SAVEB	5-10	10-15	---	5-15
Anderson wolfberry	LYAN	5-10	---	---	---
Shadscale	ATCO	2-5	40-60	---	15-25
Bud sagebrush	ARSP5	2-5	2-5	---	2-5
Nevada dalea	DAPO2	---	5-10	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---
Other shrubs	SSSS	15-25	5-15	---	10-20
Site symbol		O29XO37N	O29XO33N	---	O29XO22N
Potential production (lb/acre):					
Favorable years		300	100	---	300
Normal years		200	50	---	200
Unfavorable years		100	25	---	100

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Pintwater soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Pintwater soil—029X037N; Blacktop soil—029X033N

414—Pintwater-Blacktop-Downeyville association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,000 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Pintwater very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—45 percent
Blacktop very gravelly sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—25 percent
Downeyville very gravelly fine sandy loam, moist, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Tokoper very cobbly fine sandy loam, 15 to 30 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Typic Torriorthents, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Ardivey very gravelly sandy loam, moist, 4 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Rock outcrop—2 percent

Pintwater Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 35 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Eroded hills and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Downeyville Soil

Position on landscape: West- and south-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, Nevada ephedra, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stable areas on hills and mesas; distinctive present vegetation—shadscale, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, Nevada ephedra, rabbitbrush
Inclusion 3: Position on landscape—alluvial flats adjacent to hills; distinctive present vegetation—shadscale, spiny menodora, galleta
Inclusion 4: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren
Inclusion of minor extent: Position on landscape—higher lying areas of north-facing hillsides; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 126)

Elements of Wildlife Habitat

Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 126.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Pintwater	Blacktop	Downeyville	1	2	3	4
Galleta	HIJA	5-20	---	10-20	5-15	---	5-10	---
Indian ricegrass	ORHY	5-15	2-5	2-5	5-10	2-5	5-20	---
Needlegrass	STIPA	5-10	---	5-10	5-10	---	---	---
Bottlebrush squirreltail	SIHY	2-5	1-2	---	---	1-2	---	---
King desertgrass	BLKI	---	1-2	---	---	1-2	---	---
Other perennial grasses	PPGG	5-10	1-5	5-10	10-15	1-5	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	2-5	5-10	5-10	2-5	5-10	---
Native annual forbs	AAFF	2-5	1-5	2-5	2-5	1-5	2-5	---
Shadscale	ATCO	15-25	40-60	2-5	15-20	40-60	5-15	---
Bailey greasewood	SAVEB	5-15	10-15	5-10	---	10-15	5-15	---
Nevada ephedra	EPNE	2-5	---	5-10	5-10	---	5-10	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	2-5	2-5	5-10	---
Nevada dalea	DAPO2	---	5-10	---	2-5	5-10	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	10-25	---	---	10-30	---
Anderson wolfberry	LYAN	---	---	5-10	5-10	---	---	---
Other shrubs	SSSS	10-20	5-15	15-25	10-20	5-15	10-20	---
Site symbol		029X022N	029X033N	029X037N	029X031N	029X033N	029X036N	---
Potential production (lb/acre):								
Favorable years		300	100	300	400	100	400	---
Normal years		200	50	200	250	50	300	---
Unfavorable years		100	25	100	150	25	100	---

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Pintwater soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated

Site symbol: Pintwater soil—029X022N; Blacktop soil—029X033N; Downeyville soil—029X037N

420—Vigus-Unsel-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Vigus gravelly sandy loam, moist, 0 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—35 percent
Unsel gravelly loam, 0 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—30 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Itme gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Haplic Durargids gravelly loam, 0 to 4 percent slopes (Haplic Durargids - fine-loamy, mixed, mesic)—6 percent

Vigus Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, Bailey greasewood, galleta, Indian ricegrass
Typical profile:
0 to 8 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
8 to 17 inches—sandy clay loam, fine sandy loam, loam; 0 to 5 percent cobbles and stones and 10 to 25 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2, A-4, A-6
17 to 60 inches or more—stratified gravelly loamy sand to sandy loam; 0 to 10 percent cobbles and stones and 20 to 40 percent pebbles (by weight); massive; soft to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4.5 to 5.0 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 20); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, Bailey greasewood, spiny hopsage, galleta, Indian ricegrass
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan skirts adjacent to fan piedmonts; distinctive present vegetation—dalea, winterfat
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat, irrigated cropland

Potential Native Plant Community (Table 127)

Elements of Wildlife Habitat

Suitability of Vigus soil for named elements:
Grain and seed crops (irrigated)—poor
Domestic grasses and legumes (irrigated)—poor
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Wetland plants—poor
Shallow water areas—very poor
Suitability of Unsel soil for named elements:
Grain and seed crops (irrigated)—fair
Domestic grasses and legumes (irrigated)—fair
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Wetland plants—poor
Shallow water areas—very poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vigus Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:

TABLE 127.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Vigus	Unsel	Izo	1	2
Indian ricegrass	ORHY	5-20	5-10	5-10	5-20	5-20
Galleta	HIJA	5-10	10-25	---	5-20	5-10
Bottlebrush squirreltail	SIHY	---	2-5	---	---	---
Needlegrass	STIPA	---	2-5	---	---	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	2-5	1-5
Perennial forbs	PPFF	5-10	4-10	2-6	5-10	5-10
Native annual forbs	AAFF	2-5	1-5	1-5	1-5	2-5
Spiny menodora	MESP2	10-30	---	---	---	10-30
Bailey greasewood	SAVEB	5-15	5-10	2-10	---	5-15
Shadscale	ATCO	5-15	10-25	---	---	5-15
Bud sagebrush	ARSP5	5-10	5-10	---	5-15	5-10
Nevada ephedra	EPNE	5-10	1-5	2-5	2-5	5-10
Winterfat	EULAS	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	2-5	---
Spiny hopsage	GRSP	---	---	---	10-20	---
Anderson wolfberry	LYAN	---	---	---	5-15	---
Fremont dalea	DAFR	---	---	---	2-10	---
Nevada dalea	DAPO2	---	---	---	2-10	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	---	0-2	---
Site symbol		029X036N	029X017N	029X041N	029X016N	029X036N
Potential production (lb/acre):						
Favorable years		400	350	500	400	400
Normal years		300	250	300	300	300
Unfavorable years		100	100	100	200	100

Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Vigus soil—IVe, irrigated, and VIIc, nonirrigated; Unsel soil—IIIe, irrigated, and VIIc, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Vigus soil—029X036N; Unsel soil—029X017N; Izo soil—029X041N

421—Vigus-Fuegosta-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 4,600 to 5,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 135 days

Composition

Vigus gravelly sandy loam, 0 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—45 percent
Fuegosta gravelly fine sandy loam, dry, 2 to 4 percent slopes (Abruptic Durargids - clayey, montmorillonitic, mesic, shallow)—20 percent
Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Duric Natrargids, 0 to 2 percent slopes (Duric Natrargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 3: Stargo loam, 0 to 2 percent slopes (Durorthidic Torrifluvents - sandy, mixed, mesic)—2 percent

Vigus Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 8 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
8 to 17 inches—sandy clay loam, fine sandy loam, loam; 0 to 5 percent cobbles and stones and 10 to 25 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2, A-4, A-6
17 to 60 inches or more—stratified gravelly loamy sand to sandy loam; 0 to 10 percent cobbles and stones and 20 to 40 percent pebbles (by weight); massive; soft to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4.5 to 5.0 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Fuegosta Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
3 to 11 inches—gravelly clay, gravelly sandy clay, gravelly clay loam; 0 to 5 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, CH; estimated AASHTO classification - A-2, A-7
11 to 16 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
16 to 26 inches—indurated
26 to 60 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the indurated layer—slow
Available water capacity: 2.0 to 2.5 inches

Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, galleta, Indian ricegrass
Inclusion 2: Position on landscape—toe slopes of fan piedmonts; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 3: Position on landscape—axial stream on terraces; distinctive present vegetation—shadscale, bud sagebrush, kochia

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 128)

Elements of Wildlife Habitat

Suitability of Vigus soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Fuegosta soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vigus soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vigus Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Fuegosta Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, rooting depth
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan, shrink-swell
Roadfill: Poor—cemented pan, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 128.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Vigus	Fuegosta	Izo	1	2	3
Galleta	HIJA	10-25	10-25	---	10-25	10-25	10-25
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	2-5	2-5
Needlegrass	STIPA	2-5	2-5	---	2-5	2-5	2-5
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15	5-15	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	4-10	4-10	4-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	---	10-25	10-25	10-25
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	5-10	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10	5-10
Winterfat	EULA5	5-10	5-10	---	5-10	5-10	5-10
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	1-5	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2	1-2	1-2
Site symbol		029X017N	029X017N	029X041N	029X017N	029X017N	029X017N
Potential production (lb/acre):							
Favorable years		350	350	500	350	350	350
Normal years		250	250	300	250	250	250
Unfavorable years		100	100	100	100	100	100

Interpretive Groups

Capability classification: Vigus soil—IVe, irrigated, and VIIc, nonirrigated; Fuegosta soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Vigus soil—029X017N; Fuegosta soil—029X017N; Izo soil—029X041N

422—Vigus-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,200 to 5,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 135 days

Composition

Vigus gravelly sandy loam, 0 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—70 percent
Wardenot very gravelly loamy sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Haplic Durargids, 2 to 4 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—3 percent
Inclusion 3: Typic Camborthids, 0 to 4 percent slopes (Typic Camborthids - coarse-loamy, mixed, mesic)—2 percent

Vigus Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, winterfat
Typical profile:
0 to 8 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
8 to 17 inches—sandy clay loam, fine sandy loam, loam; 0 to 5 percent cobbles and stones and 10 to 25 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2, A-4, A-6
17 to 60 inches or more—stratified gravelly loamy sand to sandy loam; 0 to 10 percent cobbles and stones and 20 to 40 percent pebbles (by weight); massive; soft to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4.5 to 5.0 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, winterfat
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush, rabbitbrush

Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, winterfat
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, winterfat

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 129)

Elements of Wildlife Habitat

Suitability of Vigus soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vigus Soil)

TABLE 129.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Vigus	Wardenot	1	2	3
Galleta	HIJA	10-25	10-25	---	10-25	10-25
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	2-5
Needlegrass	STIPA	2-5	2-5	---	2-5	2-5
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	4-10	4-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	---	10-25	10-25
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10
Winterfat	EULA5	5-10	5-10	---	5-10	5-10
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2	1-2
Site symbol		029X017N	029X017N	029X041N	029X017N	029X017N
Potential production (lb/acre):						
Favorable years		350	350	500	350	350
Normal years		250	250	300	250	250
Unfavorable years		100	100	100	100	100

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Vigus soil—IVe, irrigated, and VIIc, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Vigus soil—029X017N; Wardenot soil—029X017N

430—Slaw-Playas complex

Map Unit Setting

Position on landscape: Alluvial flats, basin floors
Elevation: 4,500 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—45 percent
Playas—40 percent
Contrasting inclusions as follows—
Inclusion 1: Rustigate loam, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—5 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—4 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent
Inclusion 4: Yomba gravelly sand, alkali, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—3 percent

Slaw Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Black greasewood, seepweed
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML; estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth or slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of alluvial flats adjacent to lake plains; distinctive present vegetation—inland saltgrass
Inclusion 2: Position on landscape—alluvial flats adjacent to lake plains; distinctive present vegetation—black greasewood, seepweed
Inclusion 3: Position on landscape—sand dunes on lake plains; distinctive present vegetation—black greasewood, shadscale, Indian ricegrass
Inclusion 4: Position on landscape—alluvial flats adjacent to lake plains; distinctive present vegetation—black greasewood, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 130)

Elements of Wildlife Habitat

Suitability of Slaw soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Slaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—flooding, too clayey
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt

TABLE 130.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Slaw	Playas	1	2	3	4
Inland saltgrass	DIST	5-10	---	5-15	5-10	---	1-5
Alkali sacaton	SPAI	---	---	15-30	---	---	10-15
Baltic rush	JUBA	---	---	5-10	---	---	---
Basin wildrye	ELCI2	---	---	5-10	---	---	5-10
Western wheatgrass	AGSM	---	---	1-5	---	---	---
Indian ricegrass	ORHY	---	---	---	---	10-20	---
Needlegrass	STIPA	---	---	---	---	5-10	---
Other perennial grasses	PPGG	5-15	---	8-20	5-15	2-5	5-15
Native annual grasses	AAGG	---	---	1-5	---	1-3	2-5
Perennial forbs	PPFF	3-7	---	2-8	3-7	2-5	5-10
Native annual forbs	AAFF	---	---	1-5	---	2-5	2-5
Black greasewood	SAVE4	40-60	---	1-5	40-60	10-40	5-15
Shadscale	ATCO	2-10	---	---	2-10	---	15-30
Seepweed	SUAED	2-5	---	---	2-5	---	---
Torrey quailbush	ATTO	---	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	5-10	---	---	2-5
Basin big sagebrush	ARTRT*	---	---	1-5	---	---	2-5
Cooper wolfberry	LYCO2	---	---	---	---	---	5-10
Anderson wolfberry	LYAN	---	---	---	---	---	5-10
Fourwing saltbush	ATCA2	---	---	---	---	---	2-5
Other shrubs	SSSS	5-15	---	5-15	5-15	5-20	10-20
Site symbol		027X025N	---	029X004N	027X025N	027X016N	029X024N
Potential production (lb/acre):							
Favorable years		400	---	2,000	400	300	800
Normal years		200	---	1,400	200	200	350
Unfavorable years		50	---	600	50	50	150

Interpretive Groups

Site symbol: Slaw soil—027X025N

Capability classification: Slaw soil—VIIw, nonirrigated; Playas—VIIIw

431—Slaw-Kawich-Nuyobe association

Map Unit Setting

Position on landscape: Lake plains, alluvial flats
Elevation: 4,600 to 5,100 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—40 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—25 percent
Nuyobe silt loam, 0 to 2 percent slopes (Aeric Halaquepts - fine-silty, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Playas—7 percent
Inclusion 2: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—5 percent
Inclusion 3: Rustigate loamy sand, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—3 percent

Slaw Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Black greasewood, shadscale, seepweed
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML; estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Kawich Soil

Position on landscape: Sand sheets on lake plains
Parent material: Eolian material
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale, alkali sacaton, Indian ricegrass
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Nuyobe Soil

Position on landscape: Lower part of lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Inland saltgrass, alkali sacaton, black greaseewood, Baltic rush
Typical profile:
0 to 4 inches—silt loam; massive; soft, very friable; very strongly alkaline (pH 9.6); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6
4 to 60 inches or more—stratified very fine sandy loam to silty clay loam; massive; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less

than 13); estimated Unified classification - CL, ML; estimated AASHTO classification - A-6
Depth to seasonal high water table: 24 to 36 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 11 to 12 inches
Water supplying capacity: 18 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—4L
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: High

Contrasting Inclusions

Inclusion 1: Position on landscape—lower areas of basin floors adjacent to lake plains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—lake plains; distinctive present vegetation—black greasewood, seepweed
Inclusion 3: Position on landscape—lower part of lake plains; distinctive present vegetation—inland saltgrass

Major Uses

Irrigated cropland, rangeland, wildlife habitat

Potential Native Plant Community (Table 131)

Elements of Wildlife Habitat

Suitability of Slaw soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Kawich soil for named elements:
Grain and seed crops (irrigated)—poor
Domestic grasses and legumes (irrigated)—poor
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Wetland plants—very poor
Shallow water areas—very poor
Suitability of Nuyobe soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Slaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—flooding, too clayey
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt
(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage
(Nuyobe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess salt, excess sodium, soil blowing
Shallow excavations: Severe—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—low strength, shrink-swell, wetness
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium

Interpretive Groups

Capability classification: Slaw soil—VIIw, nonirrigated; Kawich soil—IVs, irrigated, and VIIs, nonirrigated; Nuyobe soil—VIIw, nonirrigated
Site symbol: Slaw soil—027X025N; Kawich soil—027X016N; Nuyobe soil—029X002N

TABLE 131.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Slaw	Kawich	Nuyobe	1	2	3
Inland saltgrass	DIST	5-10	---	10-15	---	5-10	5-15
Indian ricegrass	ORHY	---	10-20	---	---	---	---
Needlegrass	STIPA	---	5-10	---	---	---	---
Alkali sacaton	SPAI	---	---	15-40	---	---	15-30
Baltic rush	JUBA	---	---	5-15	---	---	5-10
Basin wildrye	ELCI2	---	---	2-5	---	---	5-10
Giantreed	ARDO4	---	---	2-5	---	---	---
Alkali cordgrass	SPGR	---	---	2-5	---	---	---
Western wheatgrass	AGSM	---	---	---	---	---	1-5
Other perennial grasses	PPGG	5-15	2-5	10-20	---	5-15	8-20
Native annual grasses	AAGG	---	1-3	2-6	---	---	1-5
Perennial forbs	PPFF	3-7	2-5	2-6	---	3-7	2-8
Native annual forbs	AAFF	---	2-5	1-5	---	---	1-5
Black greasewood	SAVE4	40-60	10-40	---	---	40-60	1-5
Shadscale	ATCO	2-10	---	---	---	2-10	---
Seepweed	SUAED	2-5	---	---	---	2-5	---
Torrey quailbush	ATTO	---	---	---	---	---	5-10
Rubber rabbitbrush	CHNA2	---	---	---	---	---	5-10
Basin big sagebrush	ARTRT*	---	---	---	---	---	1-5
Other shrubs	SSSS	5-15	5-20	2-10	---	5-15	5-15
Site symbol		027X025N	027X016N	029X002N	---	027X025N	029X004N
Potential production (lb/acre):							
Favorable years		400	300	3,300	---	400	2,000
Normal years		200	200	2,200	---	200	1,400
Unfavorable years		50	50	1,000	---	50	600

432—Slaw-Kawich-Playas association

Map Unit Setting

Position on landscape: Basin floors
Elevation: 4,100 to 4,500 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 160 days

Composition

Slaw loam, ponded, 0 to 2 percent slopes (Typic Torriorthents - fine-silty, mixed (calcareous), mesic)—35 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—25 percent
Playas—25 percent
Contrasting inclusions as follows—
Inclusion 1: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—9 percent
Inclusion 2: Gynelle very gravelly sand, alkali, 0 to 2 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Luning gravelly loamy sand, 0 to 2 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—3 percent

Slaw Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Shadscale, black greasewood
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML; estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Kawich Soil

Position on landscape: Sand sheets on lake plains
Parent material: Eolian material
Slope features: Length—short; shape—convex
Dominant present vegetation: Black greasewood, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—lake plains, alluvial flats adjacent to lake plains; distinctive present vegetation—black greasewood
Inclusion 2: Position on landscape—lower part of fan piedmonts adjacent to offshore bars; distinctive present vegetation—Cooper wolfberry, shadscale
Inclusion 3: Position on landscape—sand sheets on lake plains; distinctive present vegetation—Indian ricegrass, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 132)

Elements of Wildlife Habitat

Suitability of Slaw soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Slaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—flooding, too clayey
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 132.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Slaw	Kawich	Playas	1	2	3
Inland saltgrass	DIST	5-10	---	---	5-10	---	---
Indian ricegrass	ORHY	---	10-20	---	---	2-5	30-50
Needlegrass	STIPA	---	5-10	---	---	---	---
Bottlebrush squirreltail	SIHY	---	---	---	---	1-2	---
Galleta	HIJA	---	---	---	---	1-2	---
Other perennial grasses	PPGG	5-15	2-5	---	5-15	2-5	2-5
Native annual grasses	AAGG	---	1-3	---	---	2-5	---
Globemallow	SPHAE	---	---	---	---	---	1-3
Birdcage eveningprimrose	OEDE2	---	---	---	---	---	1-3
Perennial forbs	PPFF	3-7	2-5	---	3-7	2-6	2-5
Native annual forbs	AAFF	---	2-5	---	---	3-5	---
Black greasewood	SAVE4	40-60	10-40	---	40-60	10-20	---
Shadscale	ATCO	2-10	---	---	2-10	30-50	---
Seepweed	SUAED	2-5	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	---	---	---	5-10	---
Fourwing saltbush	ATCA2	---	---	---	---	---	15-30
Cooper wolfberry	LYCO2	---	---	---	---	---	10-20
Nevada dalea	DAPO2	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	5-20	---	5-15	10-25	2-15
Site symbol		O27XO25N	O27XO16N	---	O27XO25N	O29XO63N	O27XO60N
Potential production (lb/acre):							
Favorable years		400	300	---	400	200	400
Normal years		200	200	---	200	100	200
Unfavorable years		50	50	---	50	50	100

Embankments, dikes, and levees: Severe—excess salt

(Kawich Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, too sandy

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—slope

Roadfill: Good

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—piping, seepage

Interpretive Groups

Capability classification: Slaw soil—VIIw, nonirrigated; Kawich soil—IVs, irrigated, and VIIs, nonirrigated; Playas—VIIIw

Site symbol: Slaw soil—027X025N; Kawich soil—027X016N

433—Slaw-Cirac association

Map Unit Setting

Position on landscape: Alluvial flats
Elevation: 4,600 to 5,100 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 145 days

Composition

Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—40 percent
Slaw loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—30 percent
Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 0 to 2 percent slopes (Xeric Torriorthents - fine-silty, mixed (calcareous), mesic)—6 percent
Inclusion 2: Typic Natrargids, 0 to 2 percent slopes (Typic Natrargids - fine-silty, mixed, mesic)—5 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—4 percent

Slaw, Ponded, Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale, seepweed
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML; estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Slaw Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 8 inches—loam; 0 to 5 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, CL-ML estimated AASHTO classification - A-4
8 to 60 inches or more—stratified very fine sandy loam to silty clay; massive; slightly hard, friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - ML, CL; estimated AASHTO classification - A-6, A-7
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April through June
Permeability: Slow
Available water capacity: 10 to 12 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Moderate

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to

30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—high
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lake plains; distinctive present vegetation—basin big sagebrush
Inclusion 2: Position on landscape—alluvial flats; distinctive present vegetation—black greasewood
Inclusion 3: Position on landscape—sand sheets and dunes on lake plains; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 133)

Elements of Wildlife Habitat

Suitability of Slaw, ponded, soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Slaw soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Slaw, Ponded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—flooding, too clayey
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt
(Slaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Moderate—flooding, too clayey
Local roads and streets: Severe—low strength, flooding
Roadfill: Poor—low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess sodium, excess salt

Interpretive Groups

Capability classification: Slaw, ponded, soil—IVw, irrigated, and VIIw, nonirrigated; Slaw soil—VIIw, nonirrigated; Cirac soil—VIIs, nonirrigated
Site symbol: Slaw, ponded, soil—027X025N; Slaw soil—029X024N; Cirac soil—029X024N

TABLE 133.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Slaw, ponded	Slaw	Cirac	1	2	3
Inland saltgrass	DIST	5-10	1-5	1-5	5-15	5-10	---
Alkali sacaton	SPAI	---	10-15	10-15	15-30	---	---
Basin wildrye	ELCI2	---	5-10	5-10	5-10	---	---
Baltic rush	JUBA	---	---	---	5-10	---	---
Western wheatgrass	AGSM	---	---	---	1-5	---	---
Indian ricegrass	ORHY	---	---	---	---	---	10-20
Needlegrass	STIPA	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-15	5-15	5-15	8-20	5-15	2-5
Native annual grasses	AAGG	---	2-5	2-5	1-5	---	1-3
Perennial forbs	PPFF	3-7	5-10	5-10	2-8	3-7	2-5
Native annual forbs	AAFF	---	2-5	2-5	1-5	---	2-5
Black greasewood	SAVE4	40-60	5-15	5-15	1-5	40-60	10-40
Shadscale	ATCO	2-10	15-30	15-30	---	2-10	---
Seepweed	SUAED	2-5	---	---	---	2-5	---
Cooper wolfberry	LYCO2	---	5-10	5-10	---	---	---
Anderson wolfberry	LYAN	---	5-10	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	2-5	2-5	5-10	---	---
Fourwing saltbush	ATCA2	---	2-5	2-5	---	---	---
Basin big sagebrush	ARTRT*	---	2-5	2-5	1-5	---	---
Torrey quailbush	ATTO	---	---	---	5-10	---	---
Other shrubs	SSSS	5-15	10-20	10-20	5-15	5-15	5-20
Site symbol		027X025N	029X024N	029X024N	029X004N	027X025N	027X016N
Potential production (lb/acre):							
Favorable years		400	800	800	2,000	400	300
Normal years		200	350	350	1,400	200	200
Unfavorable years		50	150	150	600	50	50

440—Wardenot-Unsel-Yomba association

Map Unit Setting

Position on landscape: Fan piedmonts, fan skirts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Unsel gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—30 percent
Yomba gravelly fine sandy loam, 0 to 2 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 0 to 2 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Duric Haplargids very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Lathrop gravelly loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—4 percent

Wardenot Soil

Position on landscape: Lower part of fan piedmonts, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Higher and intermediate areas of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches

Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Yomba Soil

Position on landscape: Fan skirts, lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2
3 to 11 inches—sandy loam, fine sandy loam, loam; 0 to 25 percent pebbles (by weight); prismatic structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-4
11 to 18 inches—gravelly coarse sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 60 inches or more—extremely gravelly sand, very gravelly sand; 0 to 15 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans, on-fan drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—upper part of fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 3: Position on landscape—lower part of fan piedmonts; distinctive present vegetation—shadscale, spiny menodora, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 134)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Yomba soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source

TABLE 134.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Wardenot	Unsel	Yomba	1	2	3
Galleta	HIJA	10-25	10-25	10-25	---	10-25	5-10
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10	5-20
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	2-5	---
Needlegrass	STIPA	2-5	2-5	2-5	---	2-5	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	4-10	2-6	4-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	1-5	2-5
Shadscale	ATCO	10-25	10-25	10-25	---	10-25	5-15
Bailey greasewood	SAVEB	5-10	5-10	5-10	2-10	5-10	5-15
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10	5-10
Winterfat	EULA5	5-10	5-10	5-10	---	5-10	---
Nevada ephedra	EPNE	1-5	1-5	1-5	2-5	1-5	5-10
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	---	---	---	10-30
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	1-2	---	1-2	---
Site symbol		O29XO17N	O29XO17N	O29XO17N	O29XO41N	O29XO17N	O29XO36N
Potential production (lb/acre):							
Favorable years		350	350	350	500	350	400
Normal years		250	250	250	300	250	300
Unfavorable years		100	100	100	100	100	100

Embankments, dikes, and levees: Severe—seepage

(Yomba Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, too sandy

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Slight

Roadfill: Good

Sand: Probable source

Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Unsel soil—VIIc, nonirrigated; Yomba soil—VIIs, nonirrigated

Site symbol: Wardenot soil—029X017N; Unsel soil—029X017N; Yomba soil—029X017N

442—Wardenot-Izo association

Map Unit Setting

Position on landscape: Lower part of fan piedmonts
Elevation: 4,500 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—50 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very stony sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Leo gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Wardenot Soil

Position on landscape: Inset fans, fan aprons
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, Indian ricegrass
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans, drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—inset fans, fan aprons; distinctive present vegetation—Indian ricegrass, dalea, fourwing saltbush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 135)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:

TABLE 135.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Wardenot	Izo	1	2
Galleta	HIJA	10-25	---	---	5-20
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---
Needlegrass	STIPA	2-5	---	---	2-5
Dropseed	SPORO	---	---	---	5-15
Other perennial grasses	PPGG	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	2-4	2-4	1-5
Perennial forbs	PPFF	4-10	2-6	2-6	5-7
Native annual forbs	AAFF	1-5	1-5	1-5	2-4
Shadscale	ATCO	10-25	---	---	---
Bailey greasewood	SAVEB	5-10	2-10	2-10	---
Bud sagebrush	ARSP5	5-10	---	---	5-10
Winterfat	EULA5	5-10	---	---	5-20
Nevada ephedra	EPNE	1-5	2-5	2-5	---
Rubber rabbitbrush	CHNA2	---	10-25	10-25	---
Fourwing saltbush	ATCA2	---	5-15	5-15	10-15
Burrobrush	HYMEN3	---	5-10	5-10	---
Littleleaf horsebrush	TEGL	---	5-10	5-10	---
Cooper wolfberry	LYCO2	---	2-5	2-5	---
Spiny hopsage	GRSP	---	---	---	2-8
Anderson wolfberry	LYAN	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	1-2	---	---	---
Site symbol		O29XO17N	O29XO41N	O29XO41N	O29XO46N
Potential production (lb/acre):					
Favorable years		350	500	500	450
Normal years		250	300	300	350
Unfavorable years		100	100	100	175

Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Wardenot soil—029X017N; Izo soil—029X041N

443—Wardenot-Roic association

Map Unit Setting

Position on landscape: Hills, fan piedmonts
Elevation: 4,400 to 5,100 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 145 days

Composition

Wardenot gravelly loamy fine sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—70 percent
Roic very gravelly fine sandy loam, dry, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—20 percent
Contrasting inclusion as follows—
Inclusion 1: Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—10 percent

Wardenot Soil

Position on landscape: Inset fans, fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—gravelly loamy fine sand; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Roic Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, galleta
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusion

Inclusion 1: Position on landscape—fan skirts, alluvial flats adjacent to fan piedmonts; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 136)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:

TABLE 136.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name		Inclusion number--
		Wardenot	Roic	1
Galleta	HIJA	10-25	---	---
Indian ricegrass	ORHY	5-10	2-5	---
Bottlebrush squirreltail	SIHY	2-5	1-2	---
Needlegrass	STIPA	2-5	---	---
King desertgrass	BLKI	---	1-2	---
Inland saltgrass	DIST	---	---	5-10
Other perennial grasses	PPGG	5-15	1-5	5-15
Native annual grasses	AAGG	1-5	1-5	---
Perennial forbs	PPFF	4-10	2-5	3-7
Native annual forbs	AAFF	1-5	1-5	---
Shadscale	ATCO	10-25	40-60	2-10
Bailey greasewood	SAVEB	5-10	10-15	---
Bud sagebrush	ARSP5	5-10	2-5	---
Winterfat	EULA5	5-10	---	---
Nevada ephedra	EPNE	1-5	---	---
Nevada dalea	DAPO2	---	5-10	---
Cooper wolfberry	LYCO2	---	2-5	---
Black greasewood	SAVE4	---	---	40-60
Seepweed	SUAED	---	---	2-5
Other shrubs	SSSS	10-20	5-15	5-15
Joshua-tree	YUBR	1-2	---	---
Site symbol		029X017N	029X033N	027X025N
Potential production (lb/acre):				
Favorable years		350	100	400
Normal years		250	50	200
Unfavorable years		100	25	50

Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Roic Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Roic soil—VIIs, nonirrigated
Site symbol: Wardenot soil—029X017N; Roic soil—029X033N

444—Wardenot-Terlco-Badland association

Map Unit Setting

Position on landscape: Fan piedmonts, pediments
Elevation: 5,100 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 135 days

Composition

Wardenot very gravelly loamy sand, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Terlco very gravelly fine sandy loam, dry, 0 to 4 percent slopes (Typic Natrargids - fine-loamy, mixed, mesic)—30 percent
Badland—20 percent
Contrasting inclusions as follows—
Inclusion 1: Roic very gravelly loam, dry, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—9 percent
Inclusion 2: Pintwater very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 3: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Wardenot Soil

Position on landscape: Inset fans, lower side slopes of dissected fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Terlco Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass, galleta
Typical profile:
0 to 2 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
2 to 12 inches—gravelly clay loam, gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CL, SC, GC; estimated AASHTO classification - A-6, A-7
12 to 19 inches—very gravelly sandy loam; 0 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; very strongly alkaline (pH 9.4); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 to 60 inches or more—very gravelly loamy sand, very gravelly sand, very cobbly loamy sand; 0 to 40 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow

Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Badland

Position on landscape: Dissected remnants of pediments composed of unconsolidated sediment
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of pediments; distinctive present vegetation—Bailey greasewood, shadscale, galleta
Inclusion 2: Position on landscape—hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—rabbitbrush, burrobrush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 137)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Terlco soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding, slope
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Terlco Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Terlco soil—VIIs, nonirrigated; Badland—VIIIe
Site symbol: Wardenot soil—029X017N; Terlco soil—029X017N

TABLE 137.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Wardenot	Terlco	Badland	1	2	3
Galleta	HIJA	10-25	10-25	---	---	5-20	---
Indian ricegrass	ORHY	5-10	5-10	---	2-5	5-15	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	1-2	2-5	---
Needlegrass	STIPA	2-5	2-5	---	---	5-10	---
King desertgrass	BLKI	---	---	---	1-2	---	---
Other perennial grasses	PPGG	5-15	5-15	---	1-5	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-4
Perennial forbs	PPFF	4-10	4-10	---	2-5	5-10	2-6
Native annual forbs	AAFF	1-5	1-5	---	1-5	2-5	1-5
Shadscale	ATCO	10-25	10-25	---	40-60	15-25	---
Bailey greasewood	SAVEB	5-10	5-10	---	10-15	5-15	2-10
Bud sagebrush	ARSP5	5-10	5-10	---	2-5	2-5	---
Winterfat	EULA5	5-10	5-10	---	---	---	---
Nevada ephedra	EPNE	1-5	1-5	---	---	2-5	2-5
Nevada dalea	DAPO2	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	---	5-15	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	---	---	---	---
Site symbol		029X017N	029X017N	---	029X033N	029X022N	029X041N
Potential production (lb/acre):							
Favorable years		350	350	---	100	300	500
Normal years		250	250	---	50	200	300
Unfavorable years		100	100	---	25	100	100

445—Wardenot-Gynelle-Stonell association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,900 to 5,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 125 days

Composition

Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—45 percent
Gynelle very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Stonell very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - fine-loamy, mixed, mesic, shallow)—5 percent
Inclusion 3: Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Wardenot Soil

Position on landscape: Side slopes and lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Anderson wolfberry, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle Soil

Position on landscape: Lower side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stonell Soil

Position on landscape: Summits of erosional fan remnants
Parent material: Mixed alluvium

Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Anderson wolfberry, galleta
Typical profile:
0 to 5 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, Douglas rabbitbrush
Inclusion 2: Position on landscape—partial ballenas, summits of fan piedmont remnants; distinctive present vegetation—shadscale, Nevada ephedra, galleta
Inclusion 3: Position on landscape—toe slopes of fan piedmont remnants; distinctive present vegetation—black greasewood, shadscale, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 138)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 138.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Wardenot	Gynelle	Stonell	1	2	3
Galleta	HIJA	10-25	---	10-25	---	10-25	1-2
Indian ricegrass	ORHY	5-10	10-20	5-10	5-10	5-10	2-5
Bottlebrush squirreltail	SIHY	2-5	5-10	2-5	---	2-5	1-2
Needlegrass	STIPA	2-5	---	2-5	---	2-5	---
Other perennial grasses	PPGG	5-15	5-10	5-15	5-10	5-15	2-5
Native annual grasses	AAGG	1-5	---	1-5	2-4	1-5	2-5
Perennial forbs	PPFF	4-10	3-7	4-10	2-6	4-10	2-6
Native annual forbs	AAFF	1-5	2-5	1-5	1-5	1-5	3-5
Shadscale	ATCO	10-25	10-20	10-25	---	10-25	30-50
Bailey greasewood	SAVEB	5-10	5-10	5-10	2-10	5-10	5-10
Bud sagebrush	ARSP5	5-10	---	5-10	---	5-10	---
Winterfat	EULA5	5-10	---	5-10	---	5-10	---
Nevada ephedra	EPNE	1-5	---	1-5	2-5	1-5	---
Cooper wolfberry	LYCO2	---	5-20	---	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Black greasewood	SAVE4	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	5-15	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	1-2	---	1-2	---	1-2	---
Site symbol		029X017N	027X043N	029X017N	029X041N	029X017N	029X063N
Potential production (lb/acre):							
Favorable years		350	400	350	500	350	200
Normal years		250	200	250	300	250	100
Unfavorable years		100	100	100	100	100	50

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated; Stonell soil—VIIs, nonirrigated

Site symbol: Wardenot soil—029X017N; Gynelle soil—027X043N; Stonell soil—029X017N

446—Wardenot-Annaw-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,400 to 6,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 125 days

Composition

Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—40 percent
Annaw very gravelly loamy sand, dry, 2 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—25 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Stonell extremely gravelly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—10 percent
Inclusion 2: Tomel extremely gravelly fine sandy loam, moist, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—5 percent

Wardenot Soil

Position on landscape: Lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 50 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Annaw Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
3 to 11 inches—gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
11 to 60 inches or more—stratified extremely gravelly loamy coarse sand to very gravelly sandy loam; 0 to 25 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways on fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Douglas rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—shadscale, Anderson wolfberry, galleta
Inclusion 2: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—shadscale, spiny menodora, Nevada ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 139)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Annaw soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Annaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Annaw soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Wardenot soil—029X017N; Annaw soil—029X017N; Izo soil—029X041N

TABLE 139.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Wardenot	Annaw	Izo	1	2
Galleta	HIJA	10-25	10-25	---	10-25	5-10
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-20
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	---
Needlegrass	STIPA	2-5	2-5	---	2-5	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	4-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	2-5
Shadscale	ATCO	10-25	10-25	---	10-25	5-15
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	5-15
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10
Winterfat	EULA5	5-10	5-10	---	5-10	---
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	5-10
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	---	---	10-30
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2	---
Site symbol		O29XO17N	O29XO17N	O29XO41N	O29XO17N	O29XO36N
Potential production (lb/acre):						
Favorable years		350	350	500	350	400
Normal years		250	250	300	250	300
Unfavorable years		100	100	100	100	100

447—Wardenot-Annaw-Izo association, moist

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 135 days

Composition

Wardenot very gravelly loamy sand, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—50 percent
Annaw very gravelly loamy sand, 2 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—20 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Leo gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent

Wardenot Soil

Position on landscape: Lower part of fan piedmonts and inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, galleta, spiny hopsage
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Annaw Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, galleta, spiny hopsage
Typical profile:
0 to 3 inches—very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
3 to 11 inches—gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
11 to 60 inches or more—stratified extremely gravelly loamy coarse sand to very gravelly sandy loam; 0 to 25 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—toe slopes of fan piedmonts; distinctive present vegetation—spiny hopsage, dalea

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 140)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Annaw soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Annaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Annaw soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Wardenot soil—029X036N; Annaw soil—029X036N; Izo soil—029X041N

TABLE 140.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Wardenot	Annaw	Izo	1	2
Indian ricegrass	ORHY	5-20	5-20	5-10	5-20	5-10
Galleta	HIJA	5-10	5-10	---	5-10	5-20
Dropseed	SPORO	---	---	---	---	5-15
Needlegrass	STIPA	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	2-6	5-10	5-7
Native annual forbs	AAFF	2-5	2-5	1-5	2-5	2-4
Spiny menodora	MESP2	10-30	10-30	---	10-30	---
Bailey greasewood	SAVEB	5-15	5-15	2-10	5-15	---
Shadscale	ATCO	5-15	5-15	---	5-15	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10
Nevada ephedra	EPNE	5-10	5-10	2-5	5-10	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	10-15
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Winterfat	EULA5	---	---	---	---	5-20
Spiny hopsage	GRSP	---	---	---	---	2-8
Anderson wolfberry	LYAN	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25
Site symbol		029X036N	029X036N	029X041N	029X036N	029X046N
Potential production (lb/acre):						
Favorable years		400	400	500	400	450
Normal years		300	300	300	300	350
Unfavorable years		100	100	100	100	175

449—Wardenot-Stonell-Roic association

Map Unit Setting

Position on landscape: Fan piedmonts, hills
Elevation: 4,600 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 140 days

Composition

Wardenot very gravelly loamy sand, 2 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Stonell very gravelly sandy loam, 4 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Roic very gravelly fine sandy loam, dry, 4 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Badland—4 percent
Inclusion 3: Oricto very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Wardenot Soil

Position on landscape: Lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass, Anderson wolfberry, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stonell Soil

Position on landscape: Upper part of erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush, Bailey greasewood
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4

Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Roic Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Anderson wolfberry, Indian ricegrass
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of fan piedmonts and inset fans; distinctive present vegetation—Cooper wolfberry, shadscale
Inclusion 2: Position on landscape—finely dissected and eroded areas of fan piedmonts; distinctive present vegetation—barren
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—Cooper wolfberry, shadscale
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 141)

Elements of Wildlife Habitat

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding, slope
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 141.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Wardenot	Stonell	Roic	1	2	3	4
Galleta	HIJA	10-25	10-25	---	---	---	---	---
Indian ricegrass	ORHY	5-10	5-10	2-5	10-20	---	1-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	1-2	5-10	---	---	---
Needlegrass	STIPA	2-5	2-5	---	---	---	---	---
King desertgrass	BLKI	---	---	1-2	---	---	1-2	---
Other perennial grasses	PPGG	5-15	5-15	1-5	5-10	---	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	---	1-5	2-4
Perennial forbs	PPFF	4-10	4-10	2-5	3-7	---	5-10	2-6
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	---	2-5	1-5
Shadscale	ATCO	10-25	10-25	40-60	10-20	---	20-40	---
Bailey greasewood	SAVEB	5-10	5-10	10-15	5-10	---	10-15	2-10
Bud sagebrush	ARSP5	5-10	5-10	2-5	---	---	---	---
Winterfat	EULA5	5-10	5-10	---	---	---	---	---
Nevada ephedra	EPNE	1-5	1-5	---	---	---	---	2-5
Nevada dalea	DAPO2	---	---	5-10	---	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	5-20	---	5-15	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	5-15	5-15	---	5-15	10-20
Joshua-tree	YUBR	1-2	1-2	---	---	---	---	---
Site symbol		029X017N	029X017N	029X033N	027X043N	---	029X032N	029X041N
Potential production (lb/acre):								
Favorable years		350	350	100	400	---	150	500
Normal years		250	250	50	200	---	100	300
Unfavorable years		100	100	25	100	---	50	100

Interpretive Groups

Capability classification: Wardenot soil—IVs, irrigated, and VIIs, nonirrigated; Stonell soil—VIIs, nonirrigated; Roic soil—VIIs, nonirrigated

Site symbol: Wardenot soil—029X017N; Stonell soil—029X017N; Roic soil—029X033N

450—Cirac-Oricto association

Map Unit Setting

Position on landscape: Alluvial flats, beach plains
Elevation: 4,600 to 5,000 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 130 days

Composition

Cirac sandy loam, 0 to 4 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—40 percent
Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—25 percent
Oricto gravelly sandy loam, alkali, 0 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Kawich fine sand, 2 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—6 percent
Inclusion 2: Slaw silt loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—5 percent
Inclusion 3: Playas—4 percent

Cirac Soil

Position on landscape: Upper part of alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Cirac, Ponded, Soil

Position on landscape: Lower part of alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Oricto Soil

Position on landscape: Offshore bars
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood
Typical profile:
0 to 2 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); prismatic structure; hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2, A-4
2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and

stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2

7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 15 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—sand dunes on alluvial flats; distinctive present vegetation—black greasewood, Indian ricegrass
Inclusion 2: Position on landscape—lake plains adjacent to alluvial flats; distinctive present vegetation—black greasewood, seepweed
Inclusion 3: Position on landscape—lower part of basin floors adjacent to alluvial flats; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 142)

Elements of Wildlife Habitat

Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Cirac, ponded, soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium
(Cirac, Ponded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt

Interpretive Groups

Capability classification: Cirac soil—VIIs, nonirrigated; Cirac, ponded, soil—VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated
Site symbol: Cirac soil—029X024N; Cirac, ponded, soil—027X025N; Oricto soil—029X063N

TABLE 142.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cirac	Cirac, ponded	Oricto	1	2	3
Alkali sacaton	SPAI	10-15	---	---	---	---	---
Basin wildrye	ELCI2	5-10	---	---	---	---	---
Inland saltgrass	DIST	1-5	5-10	---	---	5-10	---
Indian ricegrass	ORHY	---	---	2-5	10-20	---	---
Bottlebrush squirreltail	SIHY	---	---	1-2	---	---	---
Galleta	HIJA	---	---	1-2	---	---	---
Needlegrass	STIPA	---	---	---	5-10	---	---
Other perennial grasses	PPGG	5-15	5-15	2-5	2-5	5-15	---
Native annual grasses	AAGG	2-5	---	2-5	1-3	---	---
Perennial forbs	PPFF	5-10	3-7	2-6	2-5	3-7	---
Native annual forbs	AAFF	2-5	---	3-5	2-5	---	---
Shadscale	ATCO	15-30	2-10	30-50	---	2-10	---
Black greasewood	SAVE4	5-15	40-60	10-20	10-40	40-60	---
Cooper wolfberry	LYCO2	5-10	---	---	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	---	---	---	---
Fourwing saltbush	ATCA2	2-5	---	---	---	---	---
Basin big sagebrush	ARTRT*	2-5	---	---	---	---	---
Seepweed	SUAED	---	2-5	---	---	2-5	---
Bailey greasewood	SAVEB	---	---	5-10	---	---	---
Other shrubs	SSSS	10-20	5-15	10-25	5-20	5-15	---
Site symbol		029X024N	027X025N	029X063N	027X016N	027X025N	---
Potential production (lb/acre):							
Favorable years		800	400	200	300	400	---
Normal years		350	200	100	200	200	---
Unfavorable years		150	50	50	50	50	---

451—Cirac-Luning association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—70 percent
Luning gravelly loamy sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle gravelly sandy loam, alkali, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Rustigate silt loam, ponded, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—5 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—4 percent

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; loose to hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Luning Soil

Position on landscape: Fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 60 inches or more—stratified sandy loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan skirts; distinctive present vegetation—black greasewood
Inclusion 2: Position on landscape—lake plains adjacent to alluvial flats; distinctive present vegetation—inland saltgrass, alkali sacaton
Inclusion 3: Position on landscape—sand sheets on alluvial flats and fan skirts; distinctive present vegetation—black greasewood, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 143)

Elements of Wildlife Habitat

Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines

TABLE 143.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Cirac	Luning	1	2	3
Alkali sacaton	SPAI	10-15	---	---	15-40	---
Basin wildrye	ELCI2	5-10	---	---	2-5	---
Inland saltgrass	DIST	1-5	---	---	10-15	---
Indian ricegrass	ORHY	---	2-5	2-5	---	10-20
Bottlebrush squirreltail	SIHY	---	1-2	1-2	---	---
Galleta	HIJA	---	1-2	1-2	---	---
Baltic rush	JUBA	---	---	---	5-15	---
Giantreed	ARDO4	---	---	---	2-5	---
Alkali cordgrass	SPGR	---	---	---	2-5	---
Needlegrass	STIPA	---	---	---	---	5-10
Other perennial grasses	PPGG	5-15	2-5	2-5	10-20	2-5
Native annual grasses	AAGG	2-5	2-5	2-5	2-6	1-3
Perennial forbs	PPFF	5-10	2-6	2-6	2-6	2-5
Native annual forbs	AAFF	2-5	3-5	3-5	1-5	2-5
Shadscale	ATCO	15-30	30-50	30-50	---	---
Black greasewood	SAVE4	5-15	10-20	10-20	---	10-40
Cooper wolfberry	LYCO2	5-10	---	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	---	---	---
Fourwing saltbush	ATCA2	2-5	---	---	---	---
Basin big sagebrush	ARTRT*	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	5-10	---	---
Other shrubs	SSSS	10-20	10-25	10-25	2-10	5-20
Site symbol		029X024N	029X063N	029X063N	029X002N	027X016N
Potential production (lb/acre):						
Favorable years		800	200	200	3,300	300
Normal years		350	100	100	2,200	200
Unfavorable years		150	50	50	1,000	50

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium

(Luning Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping

Interpretive Groups

Capability classification: Cirac soil—VIIs, nonirrigated; Luning soil—VIIs, nonirrigated
Site symbol: Cirac soil—029X024N; Luning soil—029X063N

452—Cirac-Rustigate-Settlement association

Map Unit Setting

Position on landscape: Alluvial flats, lake plains
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 150 days

Composition

Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—40 percent
Rustigate silt loam, ponded, 0 to 2 percent slopes (Aquic Torriorthents - fine-loamy, mixed (calcareous), mesic)—30 percent
Settlement clay, 0 to 2 percent slopes (Aeric Halaquepts - fine, montmorillonitic (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 0 to 2 percent slopes (Xeric Torriorthents - sandy, mixed, mesic)—8 percent
Inclusion 2: Xeric Torrifluvents, 0 to 2 percent slopes (Xeric Torrifluvents - fine, montmorillonitic (calcareous), mesic)—5 percent
Inclusion 3: Fluvaquentic Haplaquolls, 0 to 2 percent slopes (Fluvaquentic Haplaquolls - fine-silty, mixed (calcareous), mesic)—2 percent

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; loose to hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Rustigate Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Alkali sacaton, inland saltgrass, rubber rabbitbrush
Typical profile:
0 to 11 inches—silt loam; platy structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
11 to 34 inches—loam, sandy loam; massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
34 to 60 inches or more—loam, sandy loam; massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); strongly sodic (SAR 46 to 70); estimated Unified classification - CL-ML, ML, SM, SM-SC; estimated AASHTO classification - A-4
Depth to seasonal high water table: 36 to 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 9 to 10 inches
Water supplying capacity: 18 inches
Runoff: Ponded
Hydrologic group: C
Erosion factors (upper layer): K value—0.49; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: High

Settlement Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Inland saltgrass, basin big sagebrush, rubber rabbitbrush
Typical profile:

0 to 2 inches—clay; 0 to 5 percent pebbles (by weight); subangular blocky structure; very hard, very firm; strongly alkaline (pH 8.5); strongly saline (more than 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, CH; estimated AASHTO classification - A-7

2 to 11 inches—clay, silty clay; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); prismatic structure; very hard, very firm; very strongly alkaline (pH 9.4); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CH, CL; estimated AASHTO classification - A-7

11 to 60 inches or more—clay, silty clay; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; very hard, very firm; very strongly alkaline (pH 9.6); moderately saline (8 to 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - CH, CL; estimated AASHTO classification - A-7

Depth to seasonal high water table: 12 to 36 inches
Hazard of flooding: Rare
Permeability: Very slow
Available water capacity: 8 to 9 inches
Water supplying capacity: 18 inches
Runoff: Very slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.32; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: High

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—basin big sagebrush
Inclusion 2: Position on landscape—lake plains, drainageways; distinctive present vegetation—basin big sagebrush
Inclusion 3: Position on landscape—lake plains, drainageways; distinctive present vegetation—silver buffaloberry

Major Uses

Rangeland, wildlife habitat, irrigated cropland

Potential Native Plant Community (Table 144)

Elements of Wildlife Habitat

Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Rustigate soil for named elements:
Grain and seed crops (irrigated)—poor
Domestic grasses and legumes (irrigated)—fair
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Wetland plants—poor
Shallow water areas—very poor
Suitability of Settlement soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess sodium, excess salt
(Rustigate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, excess sodium, too crusty
Shallow excavations: Moderate—wetness
Local roads and streets: Severe—frost action
Roadfill: Fair—shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping
(Settlement Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—excess salt, excess sodium, soil blowing
Shallow excavations: Severe—wetness
Local roads and streets: Severe—shrink-swell, low strength, frost action
Roadfill: Poor—low strength, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium, wetness

Interpretive Groups

Capability classification: Cirac soil—VIIs, nonirrigated; Rustigate soil—IVw, irrigated, and VIIw, nonirrigated; Settlement soil—VIIw, nonirrigated
Site symbol: Cirac soil—029X024N; Rustigate soil—029X002N; Settlement soil—029X002N

TABLE 144.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cirac	Rustigate	Settlement	1	2	3
Alkali sacaton	SPAI	10-15	15-40	15-40	15-30	1-5	---
Basin wildrye	ELCI2	5-10	2-5	2-5	5-10	15-30	---
Inland saltgrass	DIST	1-5	10-15	10-15	5-15	---	---
Baltic rush	JUBA	---	5-15	5-15	5-10	---	---
Giantreed	ARDO4	---	2-5	2-5	---	---	---
Alkali cordgrass	SPGR	---	2-5	2-5	---	---	---
Western wheatgrass	AGSM	---	---	---	1-5	5-10	---
Needlegrass	STIPA	---	---	---	---	1-5	---
Sedge	CAREX	---	---	---	---	---	10-30
Rush	JUNCU	---	---	---	---	---	10-20
Nevada bluegrass	PONE3	---	---	---	---	---	5-15
Other perennial grasses	PPGG	5-15	10-20	10-20	8-20	5-15	5-10
Native annual grasses	AAGG	2-5	2-6	2-6	1-5	2-8	2-5
Perennial forbs	PPFF	5-10	2-6	2-6	2-8	2-7	10-15
Native annual forbs	AAFF	2-5	1-5	1-5	1-5	1-5	2-5
Shadscale	ATCO	15-30	---	---	---	---	---
Black greasewood	SAVE4	5-15	---	---	1-5	---	---
Cooper wolfberry	LYCO2	5-10	---	---	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	---	5-10	1-5	1-2
Fourwing saltbush	ATCA2	2-5	---	---	---	---	---
Basin big sagebrush	ARTRT*	2-5	---	---	1-5	1-5	---
Torrey quailbush	ATTO	---	---	---	5-10	---	---
Rose	ROSA+	---	---	---	---	0-5	---
Other shrubs	SSSS	10-20	2-10	2-10	5-15	2-10	2-5
Willow	SALIX	---	---	---	---	0-2	1-2
Site symbol		029X024N	029X002N	029X002N	029X004N	029X003N	029X001N
Potential production (lb/acre):							
Favorable years		800	3,300	3,300	2,000	3,000	4,000
Normal years		350	2,200	2,200	1,400	2,000	3,000
Unfavorable years		150	1,000	1,000	600	800	1,200

453—Cirac-Gynelle-Oricto association

Map Unit Setting

Position on landscape: Fan skirts, alluvial flats, fan piedmont remnants
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 150 days

Composition

Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—40 percent
Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Oricto very cobbly fine sandy loam, 2 to 4 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Zaba very gravelly loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—7 percent

Cirac Soil

Position on landscape: Upper part of alluvial flats, lower part of fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; loose to hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Gynelle Soil

Position on landscape: Upper part of fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM, SP-SM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to very cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Oricto Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 55 percent pebbles (by weight); prismatic structure;

hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2

2 to 7 inches—very gravelly loam, very gravelly sandy clay loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); prismatic structure; slightly hard, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2

7 to 19 inches—extremely cobbly sandy loam, very gravelly coarse sandy loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

19 to 60 inches or more—stratified extremely gravelly coarse sand to very gravelly loamy sand; 15 to 30 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); moderately saline to strongly saline (more than 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - GP, GM, GP-GM, SP-SM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—beach terraces; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 145)

Elements of Wildlife Habitat

Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Oricto soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium, piping
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones
(Oricto Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess sodium, excess salt

Interpretive Groups

Capability classification: Cirac soil—VIIs, nonirrigated; Gynelle soil—VIIs, nonirrigated; Oricto soil—VIIs, nonirrigated
Site symbol: Cirac soil—029X024N; Gynelle soil—029X063N; Oricto soil—029X032N

TABLE 145.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Cirac	Gynelle	Oricto	1	2
Alkali sacaton	SPAI	10-15	---	---	---	---
Basin wildrye	ELCI2	5-10	---	---	---	---
Inland saltgrass	DIST	1-5	---	---	---	5-10
Indian ricegrass	ORHY	---	2-5	1-10	5-10	---
Bottlebrush squirreltail	SIHY	---	1-2	---	---	---
Galleta	HIJA	---	1-2	---	---	---
King desertgrass	BLKI	---	---	1-2	---	---
Other perennial grasses	PPGG	5-15	2-5	5-10	5-10	5-15
Native annual grasses	AAGG	2-5	2-5	1-5	2-4	---
Perennial forbs	PPFF	5-10	2-6	5-10	2-6	3-7
Native annual forbs	AAFF	2-5	3-5	2-5	1-5	---
Shadscale	ATCO	15-30	30-50	20-40	---	2-10
Black greasewood	SAVE4	5-15	10-20	---	---	40-60
Cooper wolfberry	LYCO2	5-10	---	5-15	2-5	---
Anderson wolfberry	LYAN	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	2-5	---	---	10-25	---
Fourwing saltbush	ATCA2	2-5	---	---	5-15	---
Basin big sagebrush	ARTRT*	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	10-15	2-10	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Nevada ephedra	EPNE	---	---	---	2-5	---
Seepweed	SUAED	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-25	5-15	10-20	5-15
Site symbol		029X024N	029X063N	029X032N	029X041N	027X025N
Potential production (lb/acre):						
Favorable years		800	200	150	500	400
Normal years		350	100	100	300	200
Unfavorable years		150	50	50	100	50

454—Cirac-Playas-Kawich association

Map Unit Setting

Position on landscape: Alluvial flats, basin floors
Elevation: 4,800 to 5,200 feet
Climatic data (average annual):
Precipitation—about 4 inches
Air temperature—about 54 degrees F
Frost-free season—about 130 days

Composition

Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—40 percent
Playas—25 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Slaw loam, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—7 percent
Inclusion 2: Typic Haplargids, 0 to 4 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Gynelle very gravelly sand, alkali, 0 to 2 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale, seepweed
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; loose to hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Kawich Soil

Position on landscape: Sand dunes on alluvial flats
Parent material: Eolian material
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black greasewood, suaeda
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—black greasewood, suaeda, shadscale
Inclusion 2: Position on landscape—fan piedmont remnants adjacent to alluvial flats; distinctive present vegetation—black greasewood, shadscale
Inclusion 3: Position on landscape—fan skirts adjacent to alluvial flats; distinctive present vegetation—black greasewood, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 146)

Elements of Wildlife Habitat

Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing, excess salt

TABLE 146.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cirac	Playas	Kawich	1	2	3
Inland saltgrass	DIST	5-10	---	---	1-5	1-5	---
Indian ricegrass	ORHY	---	---	10-20	---	---	2-5
Needlegrass	STIPA	---	---	5-10	---	---	---
Alkali sacaton	SPAI	---	---	---	10-15	10-15	---
Basin wildrye	ELCI2	---	---	---	5-10	5-10	---
Bottlebrush squirreltail	SIHY	---	---	---	---	---	1-2
Galleta	HIJA	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-15	---	2-5	5-15	5-15	2-5
Native annual grasses	AAGG	---	---	1-3	2-5	2-5	2-5
Perennial forbs	PPFF	3-7	---	2-5	5-10	5-10	2-6
Native annual forbs	AAFF	---	---	2-5	2-5	2-5	3-5
Black greasewood	SAVE4	40-60	---	10-40	5-15	5-15	10-20
Shadscale	ATCO	2-10	---	---	15-30	15-30	30-50
Seepweed	SUAED	2-5	---	---	---	---	---
Cooper wolfberry	LYCO2	---	---	---	5-10	5-10	---
Anderson wolfberry	LYAN	---	---	---	5-10	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	2-5	---
Fourwing saltbush	ATCA2	---	---	---	2-5	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	2-5	2-5	---
Bailey greasewood	SAVEB	---	---	---	---	---	5-10
Other shrubs	SSSS	5-15	---	5-20	10-20	10-20	10-25
Site symbol		027X025N	---	027X016N	029X024N	029X024N	029X063N
Potential production (lb/acre):							
Favorable years		400	---	300	800	800	200
Normal years		200	---	200	350	350	100
Unfavorable years		50	---	50	150	150	50

Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium, piping

(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping

Interpretive Groups

Capability classification: Cirac soil—VIIs, nonirrigated; Kawich soil—IVs, irrigated, and VIIs, nonirrigated; Playas—VIIIw
Site symbol: Cirac soil—027X025N; Kawich soil—027X016N

455—Cirac-Kawich association

Map Unit Setting

Position on landscape: Alluvial flats
Elevation: 4,700 to 5,300 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 54 degrees F
Frost-free season—about 150 days

Composition

Cirac sandy loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—50 percent
Kawich fine sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—20 percent
Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Gynelle very gravelly sand, alkali, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Stumble loamy sand, 0 to 8 percent slopes (Typic Torripsamments - mixed, mesic)—6 percent
Inclusion 3: Slaw loam, ponded, 0 to 2 percent slopes (Typic Torrifluvents - fine-silty, mixed (calcareous), mesic)—2 percent

Cirac, Ponded, Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; loose to hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 3 inches
Runoff: Ponded
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Kawich Soil

Position on landscape: Sand dunes on alluvial flats
Parent material: Eolian material
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black greasewood, shadscale, alkali sacaton, Indian ricegrass
Typical profile:
0 to 6 inches—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
6 to 60 inches or more—fine sand; single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 3 to 4 inches
Water supplying capacity: 3 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—1
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Cirac Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight);

massive; loose to hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats and adjacent fan skirts; distinctive present vegetation—sparse shadscale, Cooper wolfberry
Inclusion 2: Position on landscape—sand sheets on alluvial flats; distinctive present vegetation—winterfat, Indian ricegrass
Inclusion 3: Position on landscape—lake plains adjacent to alluvial flats; distinctive present vegetation—black greasewood, seepweed

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 147)

Elements of Wildlife Habitat

Suitability of Cirac, ponded, soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Kawich soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Cirac, Ponded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium, piping
(Kawich Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, piping
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—excess salt, excess sodium, piping

Interpretive Groups

Capability classification: Cirac, ponded, soil—VIIs, nonirrigated; Kawich soil—IVs, irrigated, and VIIs, nonirrigated; Cirac soil—VIIs, nonirrigated
Site symbol: Cirac, ponded, soil—027X025N; Kawich soil—027X016N; Cirac soil—029X024N

TABLE 147.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cirac, ponded	Kawich	Cirac	1	2	3
Inland saltgrass	DIST	5-10	---	1-5	---	---	5-10
Indian ricegrass	ORHY	---	10-20	---	2-5	20-30	---
Needlegrass	STIPA	---	5-10	---	---	2-5	---
Alkali sacaton	SPAI	---	---	10-15	---	---	---
Basin wildrye	ELCI2	---	---	5-10	---	---	---
Bottlebrush squirreltail	SIHY	---	---	---	1-2	---	---
Galleta	HIJA	---	---	---	1-2	2-5	---
Dropseed	SPORO	---	---	---	---	5-25	---
Other perennial grasses	PPGG	5-15	2-5	5-15	2-5	5-15	5-15
Native annual grasses	AAGG	---	1-3	2-5	2-5	2-5	---
Perennial forbs	PPFF	3-7	2-5	5-10	2-6	5-10	3-7
Native annual forbs	AAFF	---	2-5	2-5	3-5	2-5	---
Black greasewood	SAVE4	40-60	10-40	5-15	10-20	---	40-60
Shadscale	ATCO	2-10	---	15-30	30-50	---	2-10
Seepweed	SUAED	2-5	---	---	---	---	2-5
Cooper wolfberry	LYCO2	---	---	5-10	---	---	---
Anderson wolfberry	LYAN	---	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	2-5	---	---	---
Fourwing saltbush	ATCA2	---	---	2-5	---	15-25	---
Basin big sagebrush	ARTRT*	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	---	5-10	---	---
Winterfat	EULA5	---	---	---	---	5-20	---
Bud sagebrush	ARSP5	---	---	---	---	5-10	---
Spiny hopsage	GRSP	---	---	---	---	1-5	---
Other shrubs	SSSS	5-15	5-20	10-20	10-25	10-20	5-15
Site symbol		O27XO25N	O27XO16N	O29XO24N	O29XO63N	O29XO12N	O27XO25N
Potential production (lb/acre):							
Favorable years		400	300	800	200	500	400
Normal years		200	200	350	100	350	200
Unfavorable years		50	50	150	50	200	50

460—Tomel-Ardivey-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,400 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Tomel very gravelly sandy loam, moist, 0 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Ardivey very gravelly sandy loam, moist, 2 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Zadvar very gravelly fine sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—3 percent
Inclusion 4: Xeric Torriorthents, 2 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Tomel Soil

Position on landscape: Summits and side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, Anderson wolfberry, shadscale, galleta, Nevada ephedra
Typical profile:
0 to 3 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 19 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
19 to 26 inches—indurated
26 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 5 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; very hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to indurated layer: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Bailey greasewood, Anderson wolfberry, shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and

70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Cooper wolfberry, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—spiny hopsage
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush
Inclusion 3: Position on landscape—upper part of fan piedmont remnants; distinctive present vegetation—black greasewood
Inclusion 4: Position on landscape—upper part of drainageways; distinctive present vegetation—Wyoming big sagebrush, basin big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 148)

Elements of Wildlife Habitat

Suitability of Tomel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tomel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, slope
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source

TABLE 148.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Tomel	Ardivey	Wardenot	1	2	3	4
Indian ricegrass	ORHY	5-20	5-20	5-10	5-10	5-10	5-10	2-5
Galleta	HIJA	5-10	5-10	10-25	5-20	---	5-20	1-3
Bottlebrush squirreltail	SIHY	---	---	2-5	---	---	---	---
Needlegrass	STIPA	---	---	2-5	2-5	---	5-15	---
Dropseed	SPORO	---	---	---	5-15	---	---	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-15	5-10	5-10	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	4-10	5-7	2-6	3-8	5-10
Native annual forbs	AAFF	2-5	2-5	1-5	2-4	1-5	2-5	1-5
Spiny menodora	MESP2	10-30	10-30	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	5-10	---	2-10	---	---
Shadscale	ATCO	5-15	5-15	10-25	---	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	---	5-10	---
Nevada ephedra	EPNE	5-10	5-10	1-5	---	2-5	2-5	1-5
Winterfat	EULA5	---	---	5-10	5-20	---	2-5	---
Fourwing saltbush	ATCA2	---	---	---	10-15	5-15	---	---
Spiny hopsage	GRSP	---	---	---	2-8	---	---	---
Anderson wolfberry	LYAN	---	---	---	1-5	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---	2-5
Burrobrush	HYMEN3	---	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---	1-5
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---	---
Black sagebrush	ARARN	---	---	---	---	---	20-25	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-20	10-20	10-25
Joshua-tree	YUBR	---	---	1-2	---	---	---	---
Site symbol		029X036N	029X036N	029X017N	029X046N	029X041N	029X008N	029X009N
Potential production (lb/acre):								
Favorable years		400	400	350	450	500	700	700
Normal years		300	300	250	350	300	400	500
Unfavorable years		100	100	100	175	100	200	200

Embankments, dikes, and levees: Severe—seepage, large stones

(Wardenot Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, too sandy

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—flooding, large stones
Roadfill: Moderate—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Tomel soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated
Site symbol: Tomel soil—029X036N; Ardivey soil—029X036N; Wardenot soil—029X017N

462—Tomel-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,400 to 5,700 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Tomel very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—65 percent
Wardenot very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Ardivey very gravelly sandy loam, moist, 4 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Lithic Torriorthents, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—2 percent

Tomel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 19 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
19 to 26 inches—indurated
26 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 5 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; very hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to indurated layer: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush, rabbitbrush
Inclusion 2: Position on landscape—fan-remnant side slopes; distinctive present vegetation—shadscale, spiny menodora, galleta
Inclusion 3: Position on landscape—lower part of hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 149)

Elements of Wildlife Habitat

Suitability of Tomel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tomel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Tomel soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated
Site symbol: Tomel soil—029X036N; Wardenot soil—029X017N

TABLE 149.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Tomel	Wardenot	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-10	5-20	2-5
Galleta	HIJA	5-10	10-25	---	5-10	10-20
Bottlebrush squirreltail	SIHY	---	2-5	---	---	---
Needlegrass	STIPA	---	2-5	---	---	5-10
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	2-6	5-10	5-10
Native annual forbs	AAFF	2-5	1-5	1-5	2-5	2-5
Spiny menodora	MESP2	10-30	---	---	10-30	10-25
Bailey greasewood	SAVEB	5-15	5-10	2-10	5-15	5-10
Shadscale	ATCO	5-15	10-25	---	5-15	2-5
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	2-5
Nevada ephedra	EPNE	5-10	1-5	2-5	5-10	5-10
Winterfat	EULA5	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Anderson wolfberry	LYAN	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	10-20	15-25
Joshua-tree	YUBR	---	1-2	---	---	---
Site symbol		029X036N	029X017N	029X041N	029X036N	029X037N
Potential production (lb/acre):						
Favorable years		400	350	500	400	300
Normal years		300	250	300	300	200
Unfavorable years		100	100	100	100	100

470—Ardivey-Unsel-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 54 degrees F
Frost-free season—about 150 days

Composition

Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—30 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Tomel very gravelly sandy loam, moist, 0 to 4 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Gynelle very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Ardivey Soil

Position on landscape: Upper part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, galleta, spiny menodora
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30);

estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Lower part of fan piedmonts, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush
Inclusion 2: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—lower part of fan piedmonts; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 150)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones

TABLE 150.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Ardivey	Unsel	Wardenot	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-10	5-10	5-20	10-20
Galleta	HIJA	5-10	10-25	10-25	---	5-10	---
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	---	5-10
Needlegrass	STIPA	---	2-5	2-5	---	---	---
Other perennial grasses	PPGG	5-10	5-15	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	---
Perennial forbs	PPFF	5-10	4-10	4-10	2-6	5-10	3-7
Native annual forbs	AAFF	2-5	1-5	1-5	1-5	2-5	2-5
Spiny menodora	MESP2	10-30	---	---	---	10-30	---
Bailey greasewood	SAVEB	5-15	5-10	5-10	2-10	5-15	5-10
Shadscale	ATCO	5-15	10-25	10-25	---	5-15	10-20
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10	---
Nevada ephedra	EPNE	5-10	1-5	1-5	2-5	5-10	---
Winterfat	EULA5	---	5-10	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	5-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	---	1-2	1-2	---	---	---
Site symbol		029X036N	029X017N	029X017N	029X041N	029X036N	027X043N
Potential production (lb/acre):							
Favorable years		400	350	350	500	400	400
Normal years		300	250	250	300	300	200
Unfavorable years		100	100	100	100	100	100

Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Unsel soil—VIIc, nonirrigated; Wardenot soil—VIIs, nonirrigated
Site symbol: Ardivey soil—029X036N; Unsel soil—029X017N; Wardenot soil—029X017N

471—Ardivey-Izo association

Map Unit Setting

Position on landscape: Dissected fan piedmonts
Elevation: 5,000 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Ardivey very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—65 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Calciorthids, 2 to 8 percent slopes (Typic Calciorthids - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Leo very gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Tokoper very gravelly sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—2 percent

Ardivey Soil

Position on landscape: Dissected fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—spiny hopsage, Anderson wolfberry, Indian ricegrass
Inclusion 3: Position on landscape—rock pediments adjacent to fan piedmonts; distinctive present vegetation—galleta, Indian ricegrass, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 151)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

(Izo Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Ardivey soil—029X017N; Izo soil—029X041N

TABLE 151.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Ardivey	Izo	1	2	3
Galleta	HIJA	10-25	---	10-25	5-20	5-15
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	---
Needlegrass	STIPA	2-5	---	2-5	2-5	5-10
Dropseed	SPORO	---	---	---	5-15	---
Other perennial grasses	PPGG	5-15	5-10	5-15	5-10	10-15
Native annual grasses	AAGG	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	2-6	4-10	5-7	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	2-4	2-5
Shadscale	ATCO	10-25	---	10-25	---	15-20
Bailey greasewood	SAVEB	5-10	2-10	5-10	---	---
Bud sagebrush	ARSP5	5-10	---	5-10	5-10	2-5
Winterfat	EULA5	5-10	---	5-10	5-20	---
Nevada ephedra	EPNE	1-5	2-5	1-5	---	5-10
Rubber rabbitbrush	CHNA2	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	5-15	---	10-15	---
Burrobrush	HYMEN3	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	---
Spiny hopsage	GRSP	---	---	---	2-8	---
Anderson wolfberry	LYAN	---	---	---	1-5	5-10
Nevada dalea	DAPO2	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-20
Joshua-tree	YUBR	1-2	---	1-2	---	---
Site symbol		029X017N	029X041N	029X017N	029X046N	029X031N
Potential production (lb/acre):						
Favorable years		350	500	350	450	400
Normal years		250	300	250	350	250
Unfavorable years		100	100	100	175	150

472—Ardivey-Wardenot-Lyda association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,400 to 5,900 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—50 percent
Wardenot very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Lyda very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Duric Camborthids, 8 to 30 percent slopes (Duric Camborthids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Typic Torriorthents, 2 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—3 percent
Inclusion 4: Xeric Torriorthents, 2 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Ardivey Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lyda Soil

Position on landscape: Stable surfaces on fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, spiny menodora
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush, shadscale
Inclusion 2: Position on landscape—fan remnant side slopes; distinctive present vegetation—shadscale, galleta, spiny menodora
Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—winterfat, bud sagebrush, Indian ricegrass
Inclusion 4: Position on landscape—drainageways on the upper part of fan piedmonts; distinctive present vegetation—basin big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 152)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Lyda Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 152.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Ardivey	Wardenot	Lyda	1	2	3	4
Indian ricegrass	ORHY	5-20	5-20	5-20	5-10	5-20	5-15	2-5
Galleta	HIJA	5-10	5-10	5-10	---	5-10	5-20	1-3
Needlegrass	STIPA	---	---	---	---	---	2-10	---
Bottlebrush squirreltail	SIHY	---	---	---	---	---	1-5	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	2-6	5-10	5-10	5-10
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	2-5	1-5	1-5
Spiny menodora	MESP2	10-30	10-30	10-30	---	10-30	---	---
Bailey greasewood	SAVEB	5-15	5-15	5-15	2-10	5-15	---	---
Shadscale	ATCO	5-15	5-15	5-15	---	5-15	---	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10	10-15	---
Nevada ephedra	EPNE	5-10	5-10	5-10	2-5	5-10	1-5	1-5
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---	2-5
Fourwing saltbush	ATCA2	---	---	---	5-15	---	2-10	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---	1-5
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---	---
Winterfat	EULA5	---	---	---	---	---	20-30	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-15	10-25
Site symbol		029X036N	029X036N	029X036N	029X041N	029X036N	029X020N	029X009N
Potential production (lb/acre):								
Favorable years		400	400	400	500	400	400	700
Normal years		300	300	300	300	300	250	500
Unfavorable years		100	100	100	100	100	100	200

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated; Lyda soil—VIIs, nonirrigated

Site symbol: Ardivey soil—029X036N; Wardenot soil—029X036N; Lyda soil—029X036N

473—Ardivey-Veet-Vindicator association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments
Elevation: 5,800 to 6,400 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—25 percent
Vindicator very gravelly sandy loam, 4 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly loamy sand, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 4: Rock outcrop—2 percent

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, spiny menodora
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Veet Soil

Position on landscape: Fan-remnant side slopes
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Vindicator Soil

Position on landscape: Rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, littleleaf horsebrush, galleta
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, Bailey greasewood, spiny menodora
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—rabbitbrush, burrobrush, spiny hopsage
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 4: Position on landscape—side slopes of rock pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 153)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Vindicator Soil)
Suitability and limitations for the following uses:

TABLE 153.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Ardivey	Veet	Vindicator	1	2	3	4
Indian ricegrass	ORHY	5-20	5-15	5-10	5-20	5-10	2-5	---
Galleta	HIJA	5-10	5-25	5-15	5-10	---	1-3	---
Needlegrass	STIPA	---	5-15	2-5	---	---	---	---
Dropseed	SPORO	---	5-15	---	---	---	---	---
Bottlebrush squirreltail	SIHY	---	1-5	1-3	---	---	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-20	5-10	5-10	5-10	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	1-5	---
Perennial forbs	PPFF	5-10	3-10	5-10	5-10	2-6	5-10	---
Native annual forbs	AAFF	2-5	2-5	2-5	2-5	1-5	1-5	---
Spiny menodora	MESP2	10-30	---	---	10-30	---	---	---
Bailey greasewood	SAVEB	5-15	---	---	5-15	2-10	---	---
Shadscale	ATCO	5-15	---	---	5-15	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	2-5	5-10	---	---	---
Nevada ephedra	EPNE	5-10	---	1-5	5-10	2-5	1-5	---
Wyoming big sagebrush	ARTRW*	---	15-20	---	---	---	---	---
Spiny hopsage	GRSP	---	5-10	5-15	---	---	---	---
Winterfat	EULA5	---	2-10	---	---	---	---	---
Anderson wolfberry	LYAN	---	---	5-15	---	---	---	---
Nevada dalea	DAPO2	---	---	5-10	---	---	---	---
Fremont dalea	DAFR	---	---	5-10	---	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	2-5	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	1-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-25	---
Site symbol		029X036N	029X049N	029X021N	029X036N	029X041N	029X009N	---
Potential production (lb/acre):								
Favorable years		400	900	300	400	500	700	---
Normal years		300	600	200	300	300	500	---
Unfavorable years		100	300	100	100	100	200	---

Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Veet soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated

Site symbol: Ardivey soil—029X036N; Veet soil—029X049N; Vindicator soil—029X021N

475—Ardivey-Tomel-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,100 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Ardivey very gravelly sandy loam, moist, 4 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Tomel very gravelly sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Slatery very gravelly loam, 4 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—5 percent
Inclusion 3: Gullied land—4 percent

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Tomel Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Shadscale, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 19 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
19 to 26 inches—indurated
26 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 5 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; very hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to indurated layer: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches

Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, Douglas rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—hills and rock pediments adjacent to fan piedmonts; distinctive present vegetation—spiny menodora, shadscale, galleta
Inclusion 3: Position on landscape—finely dissected areas of fan piedmonts; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 154)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Tomel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Tomel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source

TABLE 154.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Ardivey	Tomel	Izo	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-10	5-10	2-5	---
Galleta	HIJA	5-10	10-25	---	10-25	10-20	---
Bottlebrush squirreltail	SIHY	---	2-5	---	2-5	---	---
Needlegrass	STIPA	---	2-5	---	2-5	5-10	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	---
Perennial forbs	PPFF	5-10	4-10	2-6	4-10	5-10	---
Native annual forbs	AAFF	2-5	1-5	1-5	1-5	2-5	---
Spiny menodora	MESP2	10-30	---	---	---	10-25	---
Bailey greasewood	SAVEB	5-15	5-10	2-10	5-10	5-10	---
Shadscale	ATCO	5-15	10-25	---	10-25	2-5	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	2-5	---
Nevada ephedra	EPNE	5-10	1-5	2-5	1-5	5-10	---
Winterfat	EULA5	---	5-10	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	15-25	---
Joshua-tree	YUBR	---	1-2	---	1-2	---	---
Site symbol		029X036N	029X017N	029X041N	029X017N	029X037N	---
Potential production (lb/acre):							
Favorable years		400	350	500	350	300	---
Normal years		300	250	300	250	200	---
Unfavorable years		100	100	100	100	100	---

Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Tomel soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Ardivey soil—029X036N; Tomel soil—029X017N; Izo soil—029X041N

476—Ardivey-Wardenot-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,300 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Ardivey very stony loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Wardenot very gravelly sandy loam, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—35 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Camborthids, 4 to 15 percent slopes (Typic Camborthids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—3 percent

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 15 to 30 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, Douglas rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan collars adjacent to fan piedmonts; distinctive present vegetation—Joshua-tree, shadscale, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 155)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding, slope
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Ardivey soil—029X017N; Wardenot soil—029X017N; Izo soil—029X041N

TABLE 155.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Ardivey	Wardenot	Izo	1	2	3
Galleta	HIJA	10-25	10-25	---	10-15	1-3	5-10
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	2-5	5-20
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	---	---
Needlegrass	STIPA	2-5	2-5	---	---	---	---
Desert needlegrass	STSP3	---	---	---	5-10	---	---
Dropseed	SPORO	---	---	---	1-5	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-15	5-15	5-10	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	5-10	5-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	1-5	2-5
Shadscale	ATCO	10-25	10-25	---	---	---	5-15
Bailey greasewood	SAVEB	5-10	5-10	2-10	---	---	5-15
Bud sagebrush	ARSP5	5-10	5-10	---	1-3	---	5-10
Winterfat	EULA5	5-10	5-10	---	---	---	---
Nevada ephedra	EPNE	1-5	1-5	2-5	5-10	1-5	5-10
Rubber rabbitbrush	CHNA2	---	---	10-25	---	2-5	---
Fourwing saltbush	ATCA2	---	---	5-15	2-5	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	1-5	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Anderson wolfberry	LYAN	---	---	---	5-10	---	---
Spiny hopsage	GRSP	---	---	---	1-5	---	---
Douglas rabbitbrush	CHVI8	---	---	---	1-3	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---
Spiny menodora	MESP2	---	---	---	---	---	10-30
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-25	10-20
Joshua-tree	YUBR	1-2	1-2	---	5-15	---	---
Site symbol		029X017N	029X017N	029X041N	029X007N	029X009N	029X036N
Potential production (lb/acre):							
Favorable years		350	350	500	800	700	400
Normal years		250	250	300	500	500	300
Unfavorable years		100	100	100	300	200	100

477—Ardivey-Downeyville-Leo association

Map Unit Setting

Position on landscape: Hills, alluvial fans, fan piedmonts
Elevation: 5,200 to 5,800 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Downeyville very gravelly fine sandy loam, moist, 8 to 15 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Leo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Tomel very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Pintwater very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Ardivey Soil

Position on landscape: Fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Nevada ephedra, bud sagebrush, Anderson wolfberry, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Downeyville Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, Nevada ephedra, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch

Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Leo Soil

Position on landscape: Alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny hopsage, fourwing saltbush, Indian ricegrass, Anderson wolfberry, bud sagebrush
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GM, SM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—drainageways, inset fans; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 156)

Elements of Wildlife Habitat

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Ardivey soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated

TABLE 156.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Ardivey	Downeyville	Leo	1	2	3
Indian ricegrass	ORHY	5-20	2-5	5-10	5-20	5-15	2-5
Galleta	HIJA	5-10	10-20	5-20	5-10	5-20	1-3
Needlegrass	STIPA	---	5-10	2-5	---	5-10	---
Dropseed	SPORO	---	---	5-15	---	---	---
Bottlebrush squirreltail	SIHY	---	---	---	---	2-5	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-7	5-10	5-10	5-10
Native annual forbs	AAFF	2-5	2-5	2-4	2-5	2-5	1-5
Spiny menodora	MESP2	10-30	10-25	---	10-30	---	---
Bailey greasewood	SAVEB	5-15	5-10	---	5-15	5-15	---
Shadscale	ATCO	5-15	2-5	---	5-15	15-25	---
Bud sagebrush	ARSP5	5-10	2-5	5-10	5-10	2-5	---
Nevada ephedra	EPNE	5-10	5-10	---	5-10	2-5	1-5
Anderson wolfberry	LYAN	---	5-10	1-5	---	---	---
Fourwing saltbush	ATCA2	---	---	10-15	---	---	---
Winterfat	EULA5	---	---	5-20	---	---	---
Spiny hopsage	GRSP	---	---	2-8	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	15-25	10-25	10-20	10-20	10-25
Site symbol		029X036N	029X037N	029X046N	029X036N	029X022N	029X009N
Potential production (lb/acre):							
Favorable years		400	300	450	400	300	700
Normal years		300	200	350	300	200	500
Unfavorable years		100	100	175	100	10	200

Site symbol: Ardivey soil—029X036N; Downeyville soil—029X037N; Leo soil—029X046N

480—Stonell-Wardenot-Izo association, moist

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Stonell very gravelly sandy loam, moist, 4 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Wardenot very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents, 15 to 30 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Ardivey very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Gynelle very gravelly loamy sand, 8 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 4: Badland—1 percent

Stonell Soil

Position on landscape: Erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Bailey greasewood, shadscale, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans, fan aprons, side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—convex, smooth
Dominant present vegetation: Spiny menodora, shadscale, Bailey greasewood, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan-remnant side slopes; distinctive present vegetation—shadscale, spiny menodora, galleta
Inclusion 2: Position on landscape—lower part of fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, Bailey greasewood
Inclusion 3: Position on landscape—lower side slopes of fan piedmonts; distinctive present vegetation—shadscale, Cooper wolfberry
Inclusion 4: Position on landscape—finely dissected areas of fan piedmonts; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 157)

Elements of Wildlife Habitat

Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 157.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Stonell	Wardenot	Izo	1	2	3	4
Indian ricegrass	ORHY	5-20	5-20	5-10	5-10	5-10	10-20	---
Galleta	HIJA	5-10	5-10	---	10-25	10-25	---	---
Bottlebrush squirreltail	SIHY	---	---	---	2-5	2-5	5-10	---
Needlegrass	STIPA	---	---	---	2-5	2-5	---	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-15	5-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	---	---
Perennial forbs	PPFF	5-10	5-10	2-6	4-10	4-10	3-7	---
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	1-5	2-5	---
Spiny menodora	MESP2	10-30	10-30	---	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	2-10	5-10	5-10	5-10	---
Shadscale	ATCO	5-15	5-15	---	10-25	10-25	10-20	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10	---	---
Nevada ephedra	EPNE	5-10	5-10	2-5	1-5	1-5	---	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	5-20	---
Winterfat	EULA5	---	---	---	5-10	5-10	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	5-15	---
Joshua-tree	YUBR	---	---	---	1-2	1-2	---	---
Site symbol		029X036N	029X036N	029X041N	029X017N	029X017N	027X043N	---
Potential production (lb/acre):								
Favorable years		400	400	500	350	350	400	---
Normal years		300	300	300	250	250	200	---
Unfavorable years		100	100	100	100	100	100	---

Interpretive Groups

Capability classification: Stonell soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Stonell soil—029X036N; Wardenot soil—029X036N; Izo soil—029X041N

481—Stonell-Roic-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments
Elevation: 4,800 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Stonell very gravelly sandy loam, moist, 4 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Roic very gravelly loam, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—30 percent
Wardenot very gravelly sandy loam, moist, 8 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Badland—9 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Oricto very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—3 percent

Stonell Soil

Position on landscape: Erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth to concave
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, Indian ricegrass, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Roic Soil

Position on landscape: Rock pediment remnants
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Wardenot Soil

Position on landscape: Lower side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—convex
Dominant present vegetation: Shadscale, galleta, Douglas rabbitbrush, burrobrush, fourwing saltbrush
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—highly dissected sedimentary rock pediments; distinctive present vegetation—barren
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale
Inclusion 3: Position on landscape—lower part of fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 158)

Elements of Wildlife Habitat

Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones, slope
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Stonell soil—VIIs, nonirrigated; Roic soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated
Site symbol: Stonell soil—029X036N; Roic soil—029X017N; Wardenot soil—029X036N

TABLE 158.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stonell	Roic	Wardenot	1	2	3
Indian ricegrass	ORHY	5-20	5-10	5-20	---	5-10	1-10
Galleta	HIJA	5-10	10-25	5-10	---	---	---
Bottlebrush squirreltail	SIHY	---	2-5	---	---	---	---
Needlegrass	STIPA	---	2-5	---	---	---	---
King desertgrass	BLKI	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-10	5-15	5-10	---	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	2-4	1-5
Perennial forbs	PPFF	5-10	4-10	5-10	---	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	---	1-5	2-5
Spiny menodora	MESP2	10-30	---	10-30	---	---	---
Bailey greasewood	SAVEB	5-15	5-10	5-15	---	2-10	10-15
Shadscale	ATCO	5-15	10-25	5-15	---	---	20-40
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	---	---
Nevada ephedra	EPNE	5-10	1-5	5-10	---	2-5	---
Winterfat	EULA5	---	5-10	---	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	5-15
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20	5-15
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		029X036N	029X017N	029X036N	---	029X041N	029X032N
Potential production (lb/acre):							
Favorable years		400	350	400	---	500	150
Normal years		300	250	300	---	300	100
Unfavorable years		100	100	100	---	100	50

482—Stonell-Wardenot-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Stonell very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Wardenot very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Annaw very gravelly sandy loam, 2 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Tomel very gravelly sandy loam, moist, 0 to 4 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Gynelle very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Stonell Soil

Position on landscape: Erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—convex, smooth
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans, lower side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—smooth to convex
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, Douglas rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—shadscale, spiny menodora
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, spiny menodora
Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—shadscale, Cooper wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 159)

Elements of Wildlife Habitat

Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Stonell soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Stonell soil—029X017N; Wardenot soil—029X017N; Izo soil—029X041N

TABLE 159.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stonell	Wardenot	Izo	1	2	3
Galleta	HIJA	10-25	10-25	---	5-10	5-10	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	5-20	10-20
Bottlebrush squirreltail	SIHY	2-5	2-5	---	---	---	5-10
Needlegrass	STIPA	2-5	2-5	---	---	---	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	---
Perennial forbs	PPFF	4-10	4-10	2-6	5-10	5-10	3-7
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	2-5	2-5
Shadscale	ATCO	10-25	10-25	---	5-15	5-15	10-20
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-15	5-15	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10	---
Winterfat	EULA5	5-10	5-10	---	---	---	---
Nevada ephedra	EPNE	1-5	1-5	2-5	5-10	5-10	---
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	5-20
Spiny menodora	MESP2	---	---	---	10-30	10-30	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	5-15
Joshua-tree	YUBR	1-2	1-2	---	---	---	---
Site symbol		029X017N	029X017N	029X041N	029X036N	029X036N	027X043N
Potential production (lb/acre):							
Favorable years		350	350	500	400	400	400
Normal years		250	250	300	300	300	200
Unfavorable years		100	100	100	100	100	100

484—Stonell-Gynelle-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,000 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 54 degrees F
Frost-free season—about 150 days

Composition

Stonell very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Gynelle very gravelly loamy sand, warm, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Wardenot very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 2: Typic Haplargids, 2 to 8 percent slopes (Typic Haplargids - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent

Stonell Soil

Position on landscape: Erosional fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.5); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
5 to 10 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 8.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
10 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, white bursage
Typical profile:
0 to 2 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SP-SM, GM, GP-GM; estimated AASHTO classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 3 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Lower side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora, shadscale, bud sagebrush
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, white bursage
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 160)

Elements of Wildlife Habitat

Suitability of Stonell soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stonell Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Improbable source—seepage, large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Stonell soil—VIIs, nonirrigated; Gynelle soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated
Site symbol: Stonell soil—029X017N; Gynelle soil—029X039N; Wardenot soil—29X017N

TABLE 160.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Stonell	Gynelle	Wardenot	1	2	3
Galleta	HIJA	10-25	2-5	10-25	5-10	2-5	---
Indian ricegrass	ORHY	5-10	2-5	5-10	5-20	2-5	5-10
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	---	---
Needlegrass	STIPA	2-5	---	2-5	---	---	---
Fluffgrass	TRPU2	---	1-2	---	---	1-2	---
Other perennial grasses	PPGG	5-15	5-10	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-3	1-5	1-5	1-3	2-4
Perennial forbs	PPFF	4-10	1-5	4-10	5-10	1-5	2-6
Native annual forbs	AAFF	1-5	1-3	1-5	2-5	1-3	1-5
Shadscale	ATCO	10-25	20-40	10-25	5-15	20-40	---
Bailey greasewood	SAVEB	5-10	10-20	5-10	5-15	10-20	2-10
Bud sagebrush	ARSP5	5-10	---	5-10	5-10	---	---
Winterfat	EULA5	5-10	---	5-10	---	---	---
Nevada ephedra	EPNE	1-5	---	1-5	5-10	---	2-5
White bursage	FRDU	---	10-20	---	---	10-20	---
Cooper wolfberry	LYCO2	---	5-10	---	---	5-10	2-5
Spiny menodora	MESP2	---	---	---	10-30	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	1-2	---	---	---
Site symbol		029X017N	029X039N	029X017N	029X036N	029X039N	029X041N
Potential production (lb/acre):							
Favorable years		350	150	350	400	150	500
Normal years		250	100	250	300	100	300
Unfavorable years		100	50	100	100	50	100

490—Weepah-Kyler-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,500 to 7,800 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Weepah very gravelly loam, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—40 percent
Kyler very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—25 percent
Rock outcrop—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Zadvar very gravelly sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—5 percent

Weepah Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, shadscale, pine bluegrass
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 8 inches—very gravelly loam, extremely gravelly fine sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Moderate

Kyler Soil

Position on landscape: Mountains, hills
Parent material: Kind—residuum, colluvium; source—limestone and dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, cliffrose, pine bluegrass
Typical profile:
0 to 3 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—very cobbly loam, very gravelly loam; 25 to 40 percent cobbles and stones and 35 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-2, A-4
9 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Moderate

Rock Outcrop

Position on landscape: Ridges and crests of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, mountain-valley fans; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush
Inclusion 2: Position on landscape—south-facing mountainsides; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 3: Position on landscape—fan remnants adjacent to hills and mountains; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 161)

Elements of Wildlife Habitat

Suitability of Weepah soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kyler soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Weepah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Kyler Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Weepah soil—VIIs, nonirrigated; Kyler soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Weepah soil—029X014N; Kyler soil—029X014N

TABLE 161.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Weepah	Kyler	Rock outcrop	1	2	3
Galleta	HIJA	5-15	5-15	---	1-3	5-20	5-20
Indian ricegrass	ORHY	5-10	5-10	---	2-5	5-15	5-10
Needlegrass	STIPA	2-10	2-10	---	---	5-10	5-15
Bluegrass	POA++	2-10	2-10	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	1-5	---	---	2-5	---
Basin wildrye	ELCI2	---	---	---	2-5	---	---
Other perennial grasses	PPGG	10-15	10-15	---	5-10	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	5-10	3-8
Native annual forbs	AAFF	1-5	1-5	---	1-5	2-5	2-5
Black sagebrush	ARARN	15-20	15-20	---	---	---	20-25
Nevada ephedra	EPNE	5-10	5-10	---	1-5	2-5	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	---	2-5	5-10
Winterfat	EULA5	2-5	2-5	---	---	---	2-5
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---
Shadscale	ATCO	---	---	---	---	15-25	---
Bailey greasewood	SAVEB	---	---	---	---	5-15	---
Other shrubs	SSSS	10-20	10-20	---	10-25	10-20	10-20
Site symbol		029X014N	029X014N	---	029X009N	029X022N	029X008N
Potential production (lb/acre):							
Favorable years		500	500	---	700	300	700
Normal years		300	300	---	500	200	400
Unfavorable years		100	100	---	200	100	200

491—Weepah-Rodad-Blacktop association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,000 to 6,800 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Weepah very gravelly loam, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—35 percent
Rodad very cobbly loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Blacktop very gravelly sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Penelas very gravelly loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Kyler very gravelly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—3 percent

Weepah Soil

Position on landscape: Higher and mainly north-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 8 inches—very gravelly loam, extremely gravelly fine sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Moderate

Rodad Soil

Position on landscape: Stable areas on hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood, galleta
Typical profile:
0 to 4 inches—very cobbly loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Blacktop Soil

Position on landscape: Eroded areas on hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—higher stable mountainsides; distinctive present vegetation—black sagebrush, galleta
Inclusion 2: Position on landscape—upper part of mountainsides; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 162)

Elements of Wildlife Habitat

Suitability of Weepah soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Weepah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Weepah soil—VIIs, nonirrigated; Rodad soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Weepah soil—029X014N; Rodad soil—029X022N; Blacktop soil—029X033N

TABLE 162.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Weepah	Rodad	Blacktop	1	2
Galleta	HIJA	5-15	5-20	---	5-15	5-15
Indian ricegrass	ORHY	5-10	5-15	2-5	5-10	5-10
Needlegrass	STIPA	2-10	5-10	---	2-10	2-10
Bluegrass	POA++	2-10	---	---	2-10	2-10
Bottlebrush squirreltail	SIHY	1-5	2-5	1-2	1-5	1-5
King desertgrass	BLKI	---	---	1-2	---	---
Other perennial grasses	PPGG	10-15	5-10	1-5	10-15	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	2-5	5-10	5-10
Native annual forbs	AAFF	1-5	2-5	1-5	1-5	1-5
Black sagebrush	ARARN	15-20	---	---	15-20	15-20
Nevada ephedra	EPNE	5-10	2-5	---	5-10	5-10
Bud sagebrush	ARSP5	2-5	2-5	2-5	2-5	2-5
Winterfat	EULA5	2-5	---	---	2-5	2-5
Shadscale	ATCO	---	15-25	40-60	---	---
Bailey greasewood	SAVEB	---	5-15	10-15	---	---
Nevada dalea	DAPO2	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Other shrubs	SSSS	10-20	10-20	5-15	10-20	10-20
Site symbol		O29XO14N	O29XO22N	O29XO33N	O29XO14N	O29XO14N
Potential production (lb/acre):						
Favorable years		500	300	100	500	500
Normal years		300	200	50	300	300
Unfavorable years		100	100	25	100	100

492—Weepah-Slatery-Penelas association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,500 to 7,000 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 110 days

Composition

Weepah very gravelly loam, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—35 percent
Slatery very gravelly loam, 15 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—35 percent
Penelas very channery loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—6 percent
Inclusion 2: Ubehebe very gravelly loam, 30 to 75 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Logring very gravelly loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—2 percent
Inclusion 4: Xeric Torriorthents, 15 to 50 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Weepah Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 8 inches—very gravelly loam, extremely gravelly fine sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Moderate

Slatery Soil

Position on landscape: North-facing lower side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches

Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Penelas Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—upper part of north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, black sagebrush
Inclusion 3: Position on landscape—upper part of north-facing mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 163)

Elements of Wildlife Habitat

Suitability of Weepah soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Weepah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope

TABLE 163.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Weepah	Slatery	Penelas	1	2	3	4
Galleta	HIJA	5-15	10-20	5-15	---	---	---	1-3
Indian ricegrass	ORHY	5-10	2-5	5-10	---	2-5	2-5	2-5
Needlegrass	STIPA	2-10	5-10	2-10	---	5-15	5-15	---
Bluegrass	POA++	2-10	---	2-10	---	10-20	10-20	---
Bottlebrush squirreltail	SIHY	1-5	---	1-5	---	5-15	5-15	---
Muttongrass	POFE	---	---	---	---	2-5	2-5	---
Needleandthread	STCO4	---	---	---	---	2-5	2-5	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	5-10	10-15	---	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	---	---	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	---	5-15	5-15	5-10
Native annual forbs	AAFF	1-5	2-5	1-5	---	1-3	1-3	1-5
Black sagebrush	ARARN	15-20	---	15-20	---	15-25	15-25	---
Nevada ephedra	EPNE	5-10	5-10	5-10	---	---	---	1-5
Bud sagebrush	ARSP5	2-5	2-5	2-5	---	---	---	---
Winterfat	EULA5	2-5	---	2-5	---	---	---	---
Spiny menodora	MESP2	---	10-25	---	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	---	---	---	---	---
Anderson wolfberry	LYAN	---	5-10	---	---	---	---	---
Shadscale	ATCO	---	2-5	---	---	---	---	---
Bitterbrush	PURSH	---	---	---	---	5-10	5-10	---
Green ephedra	EPVI	---	---	---	---	2-5	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	2-5	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	15-25	10-20	---	5-10	5-10	10-25
Singleleaf pinyon	PIMO	---	---	---	---	5-10	5-10	---
Utah juniper	JUOS	---	---	---	---	5-10	5-10	---
Site symbol		029X014N	029X037N	029X014N	---	029X069N	029X069N	029X009N
Potential production (lb/acre):								
Favorable years		500	300	500	---	350	350	700
Normal years		300	200	300	---	275	275	500
Unfavorable years		100	100	100	---	150	150	200

Roadfill: Severe—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Weepah soil—VIIs, nonirrigated; Slatery soil—VIIs, nonirrigated; Penelas soil—VIIs, nonirrigated

Site symbol: Weepah soil—029X014N; Slatery soil—029X037N; Penelas soil—029X014N

501—Eaglepass-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,500 to 7,500 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 110 days

Composition

Eaglepass extremely stony loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—60 percent
Rock outcrop—25 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very cobbly fine sandy loam, 30 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Bellehellen very cobbly loam, 30 to 75 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Izo very stony sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Eaglepass Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—limestone
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Littleleaf mountainmahogany
Typical profile:
0 to 1 inch—extremely stony loam; 30 to 45 percent cobbles and stones and 40 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
1 to 6 inches—extremely stony loam, very cobbly fine sandy loam, extremely gravelly sandy loam; 25 to 45 percent cobbles and stones and 40 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
6 inches—unweathered bedrock
Range in depth to bedrock: 3 to 6 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 6 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Ridges and peaks of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountains; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—hills, mountains; distinctive present vegetation—singleleaf pinyon, black sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 164)

Elements of Wildlife Habitat

Suitability of Eaglepass soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Eaglepass Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones

TABLE 164.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Eaglepass	Rock outcrop	1	2	3
Indian ricegrass	ORHY	2-5	---	5-10	2-5	5-10
Galleta	HIJA	---	---	5-15	---	---
Needlegrass	STIPA	---	---	2-10	5-15	---
Bluegrass	POA++	---	---	2-10	10-20	---
Bottlebrush squirreltail	SIHY	---	---	1-5	5-15	---
Muttongrass	POFE	---	---	---	2-5	---
Other perennial grasses	PPGG	1-3	---	10-15	5-10	5-10
Native annual grasses	AAGG	1-3	---	1-5	---	2-4
Perennial forbs	PPFF	1-4	---	5-10	5-15	2-6
Native annual forbs	AAFF	1-3	---	1-5	1-3	1-5
Littleleaf mountainmahogany	CELEI2	50-75	---	---	---	---
Nevada greasebush	GLNE	10-20	---	---	---	---
Black sagebrush	ARARN	1-10	---	15-20	15-25	---
Wyoming big sagebrush	ARTRW*	1-5	---	---	---	---
Nevada ephedra	EPNE	---	---	5-10	---	2-5
Bud sagebrush	ARSP5	---	---	2-5	---	---
Winterfat	EULA5	---	---	2-5	---	---
Bitterbrush	PURSH	---	---	---	5-10	---
Green ephedra	EPVI	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Bailey greasewood	SAVEB	---	---	---	---	2-10
Cooper wolfberry	LYCO2	---	---	---	---	2-5
Other shrubs	SSSS	5-15	---	10-20	5-10	10-20
Singleleaf pinyon	PIMO	---	---	---	5-10	---
Utah juniper	JUOS	---	---	---	5-10	---
Site symbol		O29XO40N	---	O29XO14N	O29XO69N	O29XO41N
Potential production (lb/acre):						
Favorable years		350	---	500	350	500
Normal years		250	---	300	275	300
Unfavorable years		150	---	100	150	100

Interpretive Groups

Capability classification: Eaglepass soil—VIIs, nonirrigated; Rock outcrop—VIIIs

Site symbol: Eaglepass soil—029X040N

510—Silverbow-Wardenot-Izo association

Map Unit Setting

Position on landscape: Dissected fan remnants and ballenas
Elevation: 5,300 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Silverbow very stony fine sandy loam, dry, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—7 percent
Inclusion 2: Typic Camborthids, 8 to 30 percent slopes (Typic Camborthids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Tognoni very cobbly fine sandy loam, 8 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Silverbow Soil

Position on landscape: Summits of fan remnants and ballenas
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, spiny menodora
Typical profile:
0 to 2 inches—very stony fine sandy loam; 5 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very stony clay loam, extremely cobbly sandy clay loam, very cobbly clay loam; 30 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
10 to 18 inches—indurated
18 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans, side slopes of fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—convex, smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Douglas rabbitbrush, burrobrush, shadscale, fourwing saltbush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, SP, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan remnants; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 2: Position on landscape—fan remnant side slopes; distinctive present vegetation—spiny hopsage, littleleaf horsebrush
Inclusion 3: Position on landscape—rock pediments, hills adjacent to fan remnants; distinctive present vegetation—shadscale, galleta, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 165)

Elements of Wildlife Habitat

Suitability of Silverbow soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Silverbow Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones, flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Silverbow soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Silverbow soil—029X017N; Wardenot soil—029X017N; Izo soil—029X041N

TABLE 165.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Silverbow	Wardenot	Izo	1	2	3
Galleta	HIJA	10-25	10-25	---	10-25	5-15	5-15
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	1-5	---
Needlegrass	STIPA	2-5	2-5	---	2-5	2-10	5-10
Dropseed	SPORO	---	---	---	---	1-5	---
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15	10-20	10-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	4-10	5-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	2-5	2-5
Shadscale	ATCO	10-25	10-25	---	10-25	---	15-20
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10	---	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	---	2-5
Winterfat	EULA5	5-10	5-10	---	5-10	2-5	---
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	2-5	5-10
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	5-10	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	15-20	---
Spiny hopsage	GRSP	---	---	---	---	2-5	---
Anderson wolfberry	LYAN	---	---	---	---	---	5-10
Nevada dalea	DAPO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2	---	---
Site symbol		029X017N	029X017N	029X041N	029X017N	029X006N	029X031N
Potential production (lb/acre):							
Favorable years		350	350	500	350	800	400
Normal years		250	250	300	250	500	250
Unfavorable years		100	100	100	100	300	150

511—Silverbow-Annaw-Ardivey association

Map Unit Setting

Position on landscape: Piedmont slopes
Elevation: 5,000 to 5,800 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Silverbow very cobbly fine sandy loam, 8 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Annaw very gravelly loamy sand, 4 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—20 percent
Ardivey very gravelly sandy loam, moist, 4 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Downeyville very gravelly sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Silverbow Soil

Position on landscape: Stable upper fan piedmont remnants
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, bud sagebrush, Nevada ephedra, Anderson wolfberry, galleta
Typical profile:
0 to 2 inches—very cobbly fine sandy loam; 25 to 55 percent cobbles and stones and 35 to 50 percent pebbles (by weight); platy structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 10 inches—very stony clay loam, very cobbly clay loam, extremely cobbly sandy clay loam; 35 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
10 to 18 inches—indurated
18 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Annaw Soil

Position on landscape: Alluvial fans, lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Nevada ephedra, shadscale, galleta, Anderson wolfberry
Typical profile:
0 to 3 inches—very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
3 to 11 inches—gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
11 to 60 inches or more—stratified extremely gravelly loamy coarse sand to very gravelly sandy loam; 0 to 25 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Nevada ephedra, shadscale, galleta, Anderson wolfberry
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, Anderson wolfberry
Inclusion 2: Position on landscape—hillsides adjacent to fan remnants; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—drainageways, washes; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 166)

Elements of Wildlife Habitat

Suitability of Silverbow soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Annaw soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Silverbow Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Severe—excess fines
Gravel: Severe—excess fines
Embankments, dikes, and levees: Severe—large stones
(Annaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Ardivey Soil)
Suitability and limitations for the following uses:

TABLE 166.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Silverbow	Annaw	Ardivey	1	2	3
Indian ricegrass	ORHY	5-20	5-20	5-20	5-10	5-15	5-10
Galleta	HIJA	5-10	5-10	5-10	10-25	5-20	---
Bottlebrush squirreltail	SIHY	---	---	---	2-5	2-5	---
Needlegrass	STIPA	---	---	---	2-5	5-10	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	5-10	4-10	5-10	2-6
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	2-5	1-5
Spiny menodora	MESP2	10-30	10-30	10-30	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	5-15	5-10	5-15	2-10
Shadscale	ATCO	5-15	5-15	5-15	10-25	15-25	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	2-5	---
Nevada ephedra	EPNE	5-10	5-10	5-10	1-5	2-5	2-5
Winterfat	EULA5	---	---	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2	---	---
Site symbol		029X036N	029X036N	029X036N	029X017N	029X022N	029X041N
Potential production (lb/acre):							
Favorable years		400	400	400	350	300	500
Normal years		300	300	300	250	200	300
Unfavorable years		100	100	100	100	100	100

Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Silverbow soil—VIIs, nonirrigated; Annaw soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated
Site symbol: Silverbow soil—029X036N; Annaw soil—029X036N; Ardivey soil—029X036N

520—Celeton-Dumps-Izo association

Map Unit Setting

Position on landscape: Hills
Elevation: 5,700 to 6,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Celeton very gravelly loam, 4 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—40 percent
Dumps (mine)—30 percent
Izo gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Entic Durorthids, 2 to 4 percent slopes (Entic Durorthids - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Durorthidic Torriorthents, 2 to 4 percent slopes (Durorthidic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Lathrop gravelly loam, 2 to 4 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—3 percent

Celeton Soil

Position on landscape: Eroded side slopes of hills
Parent material: Kind—residuum, colluvium; source—diatomaceous earth
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Sparse shadscale
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 60 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 7 inches—gravelly sandy loam, gravelly loam, loam; 0 to 5 percent cobbles and stones and 5 to 35 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); moderately saline (8 to 16 mmhos/cm); estimated Unified classification - SM, ML, MH; estimated AASHTO classification - A-5
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 4 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Dumps

Position on landscape: Hillsides, hilltops
Parent material: Diatomaceous earth spoilbanks
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, Indian ricegrass
Typical profile:
0 to 8 inches—gravelly sand; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SP; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December through August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—2

Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants adjacent to hills; distinctive present vegetation—spiny menodora, galleta

Inclusion 2: Position on landscape—fan remnants and fan piedmonts adjacent to hills; distinctive present vegetation—spiny menodora, shadscale, galleta

Inclusion 3: Position on landscape—fan remnants and fan piedmonts adjacent to hills; distinctive present vegetation—spiny menodora, shadscale, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 167)

TABLE 167.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Celeton	Dumps	Izo	1	2	3
Indian ricegrass	ORHY	5-20	---	5-10	5-20	5-20	5-20
Needlegrass	STIPA	2-10	---	---	---	---	---
Galleta	HIJA	---	---	---	5-10	5-10	5-10
Other perennial grasses	PPGG	2-5	---	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	---	---	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	---	2-6	5-10	5-10	5-10
Native annual forbs	AAFF	---	---	1-5	2-5	2-5	2-5
Shadscale	ATCO	10-20	---	---	5-15	5-15	5-15
Bailey greasewood	SAVEB	5-15	---	2-10	5-15	5-15	5-15
Bud sagebrush	ARSP5	2-10	---	---	5-10	5-10	5-10
Nevada ephedra	EPNE	2-5	---	2-5	5-10	5-10	5-10
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Spiny menodora	MESP2	---	---	---	10-30	10-30	10-30
Other shrubs	SSSS	5-10	---	10-20	10-20	10-20	10-20
Site symbol		027X027N	---	029X041N	029X036N	029X036N	029X036N
Potential production (lb/acre):							
Favorable years		200	---	500	400	400	400
Normal years		100	---	300	300	300	300
Unfavorable years		50	---	100	100	100	100

Elements of Wildlife Habitat

Suitability of Celeton soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Celeton Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, hard to pack
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Celeton soil—VIIs, nonirrigated; Dumps—VIIIe; Izo soil—VIIw, nonirrigated
Site symbol: Celeton soil—027X027N; Izo soil—029X041N

540—Veet-Leo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,800 to 6,400 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—65 percent
Leo very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Xerollic Camborthids, 2 to 15 percent slopes (Xerollic Camborthids - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Xeric Torrifluvents, 2 to 8 percent slopes (Xeric Torrifluvents - sandy-skeletal, mixed, mesic)—2 percent

Veet Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Leo Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, SM, GM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, inset fans; distinctive present vegetation—Wyoming big sagebrush, spiny hopsage

Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—Wyoming big sagebrush

Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 168)

TABLE 168.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Veet	Leo	1	2	3
Galleta	HIJA	5-25	5-20	5-15	5-25	1-3
Indian ricegrass	ORHY	5-15	5-10	5-10	5-15	2-5
Needlegrass	STIPA	5-15	2-5	2-10	5-15	---
Dropseed	SPORO	5-15	5-15	1-5	5-15	---
Bottlebrush squirreltail	SIHY	1-5	---	1-5	1-5	---
Basin wildrye	ELCI2	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	5-10	10-20	5-20	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	3-10	5-7	5-10	3-10	5-10
Native annual forbs	AAFF	2-5	2-4	2-5	2-5	1-5
Wyoming big sagebrush	ARTRW*	15-20	---	15-20	15-20	---
Spiny hopsage	GRSP	5-10	2-8	2-5	5-10	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	---
Winterfat	EULA5	2-10	5-20	2-5	2-10	---
Fourwing saltbush	ATCA2	---	10-15	5-10	---	---
Anderson wolfberry	LYAN	---	1-5	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	1-5
Basin big sagebrush	ARTRT*	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-25	10-25	10-20	10-25
Site symbol		029X049N	029X046N	029X006N	029X049N	029X009N
Potential production (lb/acre):						
Favorable years		900	450	800	900	700
Normal years		600	350	500	600	500
Unfavorable years		300	175	300	300	200

Elements of Wildlife Habitat

Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action, slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Veet soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated
Site symbol: Veet soil—029X049N; Leo soil—029X046N

541—Veet very gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

Position on landscape: Alluvial fans, fan piedmonts
Elevation: 6,000 to 7,000 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 53 degrees F
Frost-free season—about 110 days

Composition

Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—85 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 8 to 50 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Zadvar very gravelly loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—5 percent
Inclusion 3: Aquolls—2 percent

Veet Soil

Position on landscape: Alluvial fans, fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, spiny hopsage, bottlebrush squirreltail, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—streambanks; distinctive present vegetation—rose, willow
Inclusion 2: Position on landscape—fan remnants; distinctive present vegetation—black sagebrush
Inclusion 3: Position on landscape—meadows near seeps and springs; distinctive present vegetation—sedge, Nevada bluegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 169)

TABLE 169.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name	Inclusion number--		
		Veet	1	2	3
Galleta	HIJA	5-25	---	5-20	---
Indian ricegrass	ORHY	5-15	---	5-10	---
Needlegrass	STIPA	5-15	5-20	5-15	---
Dropseed	SPORO	5-15	---	---	---
Bottlebrush squirreltail	SIHY	1-5	---	---	---
Basin wildrye	ELCI2	---	10-20	---	---
Western wheatgrass	AGSM	---	5-10	---	5-10
Nevada bluegrass	PONE3	---	---	---	5-10
Tufted hairgrass	DECA5	---	---	---	3-8
Rush	JUNCU	---	---	---	10-15
Sedge	CAREX	---	---	---	5-10
Other perennial grasses	PPGG	5-20	10-20	10-15	10-20
Native annual grasses	AAGG	1-5	---	1-5	2-10
Yarrow	ACHIL	---	---	---	1-3
Clover	TRIFO	---	---	---	1-3
Cinquefoil	POTEN	---	---	---	2-4
Aster	ASTER	---	---	---	1-3
Other perennial forbs	PPFF	3-10	2-10	3-8	2-5
Native annual forbs	AAFF	2-5	1-5	2-5	---
Wyoming big sagebrush	ARTRW*	15-20	---	---	---
Spiny hopsage	GRSP	5-10	---	---	---
Bud sagebrush	ARSP5	5-10	---	5-10	---
Winterfat	EULA5	2-10	---	2-5	---
Basin big sagebrush	ARTRT*	---	5-20	---	2-5
Green ephedra	EPVI	---	1-5	---	---
Bitterbrush	PURSH	---	1-5	---	---
Mexican cliffrose	COME5	---	1-5	---	---
Black sagebrush	ARARN	---	---	20-25	---
Nevada ephedra	EPNE	---	---	2-5	---
Whitestem rabbitbrush	CHNAA	---	---	---	2-5
Curlleaf mountainmahogany	CELE3	---	1-2	---	---
Other shrubs	SSSS	10-20	10-15	10-20	2-5
Common chokecherry	PRVI	---	2-4	---	---
Willow	SALIX	---	1-3	---	---
Singleleaf pinyon	PIMO	---	1-2	---	---
Utah juniper	JUOS	---	1-2	---	---
Site symbol		029X049N	029X005N	029X008N	029X060N
Potential production (lb/acre):					
Favorable years		900	900	700	3,000
Normal years		600	500	400	2,000
Unfavorable years		300	300	200	1,200

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: VIIs, nonirrigated
Site symbol: 029X049N

542—Veet-Laxal association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,500 to 6,200 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic—50 percent
Laxal very gravelly sandy loam, 2 to 8 percent slopes (Durorthidic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Xerollic Haplargids, 2 to 8 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Veet Soil

Position on landscape: Upper part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Laxal Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 15 percent cobbles and stones and 60 to 70 percent pebbles (by weight); massive; slightly hard, firm; strongly alkaline (pH 8.8); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush, galleta, spiny hopsage

Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 170)

TABLE 170.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Veet	Laxal	1	2
Galleta	HIJA	5-25	10-25	5-25	1-3
Indian ricegrass	ORHY	5-15	5-10	5-15	2-5
Needlegrass	STIPA	5-15	2-5	5-15	---
Dropseed	SPORO	5-15	---	5-15	---
Bottlebrush squirreltail	SIHY	1-5	2-5	1-5	---
Basin wildrye	ELCI2	---	---	---	2-5
Other perennial grasses	PPGG	5-20	5-15	5-20	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	3-10	4-10	3-10	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	1-5
Wyoming big sagebrush	ARTRW*	15-20	---	15-20	---
Spiny hopsage	GRSP	5-10	---	5-10	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---
Winterfat	EULA5	2-10	5-10	2-10	---
Shadscale	ATCO	---	10-25	---	---
Bailey greasewood	SAVEB	---	5-10	---	---
Nevada ephedra	EPNE	---	1-5	---	1-5
Basin big sagebrush	ARTRT*	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	---	1-2	---	---
Site symbol		O29XO49N	O29XO17N	O29XO49N	O29XO09N
Potential production (lb/acre):					
Favorable years		900	350	900	700
Normal years		600	250	600	500
Unfavorable years		300	100	300	200

Elements of Wildlife Habitat

Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Laxal soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Laxal Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, excess salt

Interpretive Groups

Capability classification: Veet soil—VIIs, nonirrigated; Laxal soil—VIIs, nonirrigated
Site symbol: Veet soil—029X049N; Laxal soil—029X017N

543—Veet-Veet Variant association

Map Unit Setting

Position on landscape: Mountain-valley fans, stream terraces
Elevation: 5,800 to 6,500 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 51 degrees F
Frost-free season—about 120 days

Composition

Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—55 percent
Veet Variant fine sandy loam, 0 to 4 percent slopes (Fluvaquentic Haploxerolls - coarse-loamy over sandy or sandy-skeletal, mixed, mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Youngston gravelly sandy loam, 2 to 8 percent slopes (Typic Torrifluvents - fine-loamy, mixed (calcareous), mesic)—9 percent
Inclusion 2: Xeric Torriorthents very gravelly sand, 0 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Izo very gravelly loamy sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Veet Soil

Position on landscape: Erosional fan remnants, stream terraces
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Variant Soil

Position on landscape: Lower part of stream terraces adjacent to drainageways
Parent material: Mixed alluvium
Slope features: Length—short; shape—smooth
Dominant present vegetation: Basin big sagebrush, rubber rabbitbrush, galleta, basin wildrye
Typical profile:
0 to 11 inches—fine sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
11 to 24 inches—stratified sandy loam to loam; 0 to 10 percent pebbles (by weight); massive; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - ML; estimated AASHTO classification - A-4
24 to 60 inches or more—stratified gravelly sandy loam to very gravelly sand; 0 to 15 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches because of drainage caused by channel downcutting
Hazard of flooding: Frequency—occasional; duration—very brief; months—April to September
Permeability: Moderate

Available water capacity: 5 to 6 inches
Water supplying capacity: 12 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.32; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, inset fans at lower elevations; distinctive present vegetation—basin big sagebrush, black greasewood

Inclusion 2: Position on landscape—drainageways at upper elevations; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush, green ephedra

Inclusion 3: Position on landscape—drainageways at lower elevations; distinctive present vegetation—rabbitbrush, fourwing saltbush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 171)

TABLE 171.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Veet	Veet Variant	1	2	3
Galleta	HIJA	5-25	---	---	---	---
Indian ricegrass	ORHY	5-15	---	---	---	5-10
Needlegrass	STIPA	5-15	1-5	---	5-20	---
Dropseed	SPORO	5-15	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	---	---	---	---
Basin wildrye	ELCI2	---	15-30	5-10	10-20	---
Western wheatgrass	AGSM	---	5-10	1-5	5-10	---
Alkali sacaton	SPAI	---	1-5	15-30	---	---
Inland saltgrass	DIST	---	---	5-15	---	---
Baltic rush	JUBA	---	---	5-10	---	---
Other perennial grasses	PPGG	5-20	5-15	8-20	10-20	5-10
Native annual grasses	AAGG	1-5	2-8	1-5	---	2-4
Perennial forbs	PPFF	3-10	2-7	2-8	2-10	2-6
Native annual forbs	AAFF	2-5	1-5	1-5	1-5	1-5
Wyoming big sagebrush	ARTRW*	15-20	---	---	---	---
Spiny hopsage	GRSP	5-10	---	---	---	---
Bud sagebrush	ARSP5	5-10	---	---	---	---
Winterfat	EULA5	2-10	---	---	---	---
Basin big sagebrush	ARTRT*	---	1-5	1-5	5-20	---
Rubber rabbitbrush	CHNA2	---	1-5	5-10	---	10-25
Rose	ROSA+	---	0-5	---	---	---
Torrey quailbush	ATTO	---	---	5-10	---	---
Black greasewood	SAVE4	---	---	1-5	---	---
Green ephedra	EPVI	---	---	---	1-5	---
Bitterbrush	PURSH	---	---	---	1-5	---
Mexican cliffrose	COME5	---	---	---	1-5	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	5-10
Bailey greasewood	SAVEB	---	---	---	---	2-10
Nevada ephedra	EPNE	---	---	---	---	2-5
Cooper wolfberry	LYCO2	---	---	---	---	2-5
Curlleaf mountainmahogany	CELE3	---	---	---	1-2	---
Other shrubs	SSSS	10-20	2-10	5-15	10-15	10-20
Willow	SALIX	---	0-2	---	1-3	---
Common chokecherry	PRVI	---	---	---	2-4	---
Singleleaf pinyon	PIMO	---	---	---	1-2	---
Utah juniper	JUOS	---	---	---	1-2	---
Site symbol		029X049N	029X003N	029X004N	029X005N	029X041N
Potential production (lb/acre):						
Favorable years		900	3,000	2,000	900	500
Normal years		600	2,000	1,400	500	300
Unfavorable years		300	800	600	300	100

Elements of Wildlife Habitat

Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet Variant soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Veet Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Veet soil—VIIs, nonirrigated; Veet Variant soil—IIIw, irrigated, and VIw, nonirrigated
Site symbol: Veet soil—029X049N; Veet Variant soil—029X003N

544—Veet-Ardivey-Espint association

Map Unit Setting

Position on landscape: Alluvial fans, hills, fan piedmonts, rock pediments
Elevation: 6,200 to 6,600 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—30 percent
Ardivey very gravelly sandy loam, moist, 4 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Espint very gravelly fine sandy loam, 4 to 8 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—6 percent
Inclusion 2: Typic Torriorthents, 15 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—6 percent
Inclusion 3: Stewval very cobbly fine sandy loam, 8 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Veet Soil

Position on landscape: Alluvial fans, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, Nevada ephedra
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-1
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Ardivey Soil

Position on landscape: Fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Nevada ephedra, galleta, Anderson wolfberry
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 16 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Espint Soil

Position on landscape: Hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial fan remnant side slopes; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—alluvial fan remnant side slopes; distinctive present vegetation—shadscale, Nevada ephedra
Inclusion 3: Position on landscape—hillsides; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 172)

Elements of Wildlife Habitat

Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Espint soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action, slope
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Espint Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock

TABLE 172.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Veet	Ardivey	Espint	1	2	3
Galleta	HIJA	5-25	5-10	5-15	5-15	5-20	5-15
Indian ricegrass	ORHY	5-15	5-20	5-10	5-10	5-15	5-10
Needlegrass	STIPA	5-15	---	5-10	5-10	5-10	2-10
Dropseed	SPORO	5-15	---	1-5	1-5	---	---
Bottlebrush squirreltail	SIHY	1-5	---	1-4	1-4	2-5	1-5
Bluegrass	POA++	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-20	5-10	5-20	5-20	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	3-10	5-10	4-10	4-10	5-10	5-10
Native annual forbs	AAFF	2-5	2-5	2-7	2-7	2-5	1-5
Wyoming big sagebrush	ARTRW*	15-20	---	20-30	20-30	---	---
Spiny hopsage	GRSP	5-10	---	---	---	---	---
Bud sagebrush	ARSP5	5-10	5-10	---	---	2-5	2-5
Winterfat	EULA5	2-10	---	---	---	---	2-5
Spiny menodora	MESP2	---	10-30	---	---	---	---
Bailey greasewood	SAVEB	---	5-15	---	---	5-15	---
Shadscale	ATCO	---	5-15	---	---	15-25	---
Nevada ephedra	EPNE	---	5-10	5-10	5-10	2-5	5-10
Black sagebrush	ARARN	---	---	---	---	---	15-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Site symbol		029X049N	029X036N	029X010N	029X010N	029X022N	029X014N
Potential production (lb/acre):							
Favorable years		900	400	600	600	300	500
Normal years		600	300	400	400	200	300
Unfavorable years		300	100	200	200	100	100

Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Veet soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated; Espint soil—VIIs, nonirrigated
Site symbol: Veet soil—029X049N; Ardivey soil—029X036N; Espint soil—029X010N

550—Luning-Timper-Gynelle association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,800 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Luning loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—45 percent
Timper gravelly sandy loam, 2 to 4 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—30 percent
Gynelle very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Luning loamy sand, alkali, 2 to 4 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—2 percent

Luning Soil

Position on landscape: Inset fans, fan aprons
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush
Typical profile:
0 to 3 inches—loamy sand; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
3 to 60 inches or more—stratified sandy loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Timper Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry
Typical profile:
0 to 3 inches—gravelly sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
3 to 14 inches—sandy loam, gravelly fine sandy loam; 0 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-1, A-2
14 to 24 inches—cemented
24 to 60 inches or more—stratified loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 40 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM, SM, SP-SM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gynelle Soil

Position on landscape: Inset fans, fan aprons
Parent material: Mixed alluvium

Slope features: Length—long; shape—smooth
Dominant present vegetation: Cooper wolfberry, shadscale, Nevada dalea
Typical profile:
0 to 2 inches—very gravelly sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated AASHTO classification - GM, GP-GM, SM, SP-SM; estimated Unified classification - A-1
2 to 60 inches or more—stratified very gravelly sandy loam to extremely cobbly coarse sand; 15 to 40 percent cobbles and stones and 40 to 65 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush
Inclusion 2: Position on landscape—lower part of inset fans; distinctive present vegetation—black greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 173)

Elements of Wildlife Habitat

Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Timper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gynelle soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Luning Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage
(Timper Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Moderate—thin layer
(Gynelle Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Luning soil—VIIs, irrigated; Timper soil—VIIs, irrigated; Gynelle soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Luning soil—027X060N; Timper soil—029X017N; Gynelle soil—027X043N

TABLE 173.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Luning	Timper	Gynelle	1	2
Indian ricegrass	ORHY	30-50	5-10	10-20	5-10	2-5
Galleta	HIJA	---	10-25	---	---	1-2
Bottlebrush squirreltail	SIHY	---	2-5	5-10	---	1-2
Needlegrass	STIPA	---	2-5	---	---	---
Other perennial grasses	PPGG	2-5	5-15	5-10	5-10	2-5
Native annual grasses	AAGG	---	1-5	---	2-4	2-5
Globemallow	SPHAE	1-3	---	---	---	---
Birdcage eveningprimrose	OEDE2	1-3	---	---	---	---
Other perennial forbs	PPFF	2-5	4-10	3-7	2-6	2-6
Native annual forbs	AAFF	---	1-5	2-5	1-5	3-5
Fourwing saltbush	ATCA2	15-30	---	---	5-15	---
Cooper wolfberry	LYCO2	10-20	---	5-20	2-5	---
Nevada dalea	DAPO2	5-10	---	---	---	---
Shadscale	ATCO	---	10-25	10-20	---	30-50
Bailey greasewood	SAVEB	---	5-10	5-10	2-10	5-10
Bud sagebrush	ARSP5	---	5-10	---	---	---
Winterfat	EULA5	---	5-10	---	---	---
Nevada ephedra	EPNE	---	1-5	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Black greasewood	SAVE4	---	---	---	---	10-20
Other shrubs	SSSS	2-15	10-20	5-15	10-20	10-25
Joshua-tree	YUBR	---	1-2	---	---	---
Site symbol		027X060N	029X017N	027X043N	029X041N	029X063N
Potential production (lb/acre):						
Favorable years		400	350	400	500	200
Normal years		200	250	200	300	100
Unfavorable years		100	100	100	100	50

551—Luning-Sodaspring association

Map Unit Setting

Position on landscape: Lower part of fan piedmonts and fan skirts
Elevation: 4,600 to 5,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Luning loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—60 percent
Sodaspring loamy sand, 2 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Stumble loamy sand, 2 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—8 percent
Inclusion 2: Izo gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Luning Soil

Position on landscape: Fan skirts, fan aprons
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush
Typical profile:
0 to 3 inches—loamy sand; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
3 to 60 inches or more—stratified sandy loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Sodaspring Soil

Position on landscape: Inset fans, fan aprons
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush
Typical profile:
0 to 3 inches—loamy sand; 0 to 10 percent cobbles and stones and 0 to 5 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 60 inches or more—stratified very gravelly coarse sand to sandy loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan aprons, fan skirts; distinctive present vegetation—dalea, fourwing saltbush, Indian ricegrass
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush

Major Uses

Rangeland, wildlife habitat, irrigated cropland

Potential Native Plant Community (Table 174)

Elements of Wildlife Habitat

Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor

TABLE 174.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Luning	Sodaspring	1	2
Indian ricegrass	ORHY	30-50	10-20	20-30	5-10
Bottlebrush squirreltail	SIHY	---	5-10	---	---
Dropseed	SPORO	---	---	5-25	---
Galleta	HIJA	---	---	2-5	---
Needlegrass	STIPA	---	---	2-5	---
Other perennial grasses	PPGG	2-5	5-10	5-15	5-10
Native annual grasses	AAGG	---	---	2-5	2-4
Globemallow	SPHAE	1-3	---	---	---
Birdcage eveningprimrose	OEDE2	1-3	---	---	---
Other perennial forbs	PPFF	2-5	3-7	5-10	2-6
Native annual forbs	AAFF	---	2-5	2-5	1-5
Fourwing saltbush	ATCA2	15-30	---	15-25	5-15
Cooper wolfberry	LYCO2	10-20	5-20	---	2-5
Nevada dalea	DAPO2	5-10	---	---	---
Shadscale	ATCO	---	10-20	---	---
Bailey greasewood	SAVEB	---	5-10	---	2-10
Winterfat	EULA5	---	---	5-20	---
Bud sagebrush	ARSP5	---	---	5-10	---
Spiny hopsage	GRSP	---	---	1-5	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Nevada ephedra	EPNE	---	---	---	2-5
Other shrubs	SSSS	2-15	5-15	10-20	10-20
Site symbol		027X060N	027X043N	029X012N	029X041N
Potential production (lb/acre):					
Favorable years		400	400	500	500
Normal years		200	200	350	300
Unfavorable years		100	100	200	100

Shrubs (nonirrigated)—poor

Suitability of Sodaspring soil for named elements:

Grain and seed crops (irrigated)—poor
Domestic grasses and legumes (irrigated)—poor
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Wetland plants—poor
Shallow water areas—very poor

Ratings for Selected Uses

(Luning Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, seepage

(Sodaspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Luning soil—VIIs, nonirrigated; Sodaspring soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Luning soil—027X060N; Sodaspring soil—027X043N

552—Luning-Candelaria-Pintwater association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments, hills
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Luning gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—40 percent
Candelaria very gravelly fine sandy loam, dry, 2 to 4 percent slopes (Typic Calciorthids - sandy-skeletal, mixed, mesic)—30 percent
Pintwater gravelly fine sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Entic Durorthids, 2 to 8 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—6 percent
Inclusion 2: Haplic Durargids, 2 to 4 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—5 percent
Inclusion 3: Yomba gravelly fine sandy loam, alkali, 2 to 8 percent slopes (Duric Camborthids - sandy-skeletal, mixed, mesic)—4 percent

Luning Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush, winterfat
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-1
3 to 60 inches or more—stratified sandy loam to very gravelly coarse sand; 0 to 10 percent cobbles and stones and 10 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Candelaria Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Nevada dalea, Cooper wolfberry
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
1 to 11 inches—gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 25 to 35 percent pebbles (by weight); platy structure; soft, very friable; very strongly alkaline (pH 9.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2
11 to 22 inches—very gravelly sandy loam, very gravelly loamy sand, extremely gravelly sandy loam; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); massive; hard, firm; very strongly alkaline (pH 9.4); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
22 to 60 inches or more—stratified extremely gravelly sand to very gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); single grain; loose; very strongly alkaline (pH 9.2); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow

Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Pintwater Soil

Position on landscape: Hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very stony fine sandy loam, very cobbly fine sandy loam, extremely gravelly sandy loam; 30 to 45 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—fan piedmont remnants near seeps and springs; distinctive present vegetation—black greasewood, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 175)

TABLE 175.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Luning	Candelaria	Pintwater	1	2	3
Indian ricegrass	ORHY	30-50	5-10	5-15	5-20	5-20	---
Galleta	HIJA	---	10-25	5-20	5-10	5-10	---
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	---	---
Needlegrass	STIPA	---	2-5	5-10	---	---	---
Alkali sacaton	SPAI	---	---	---	---	---	10-15
Basin wildrye	ELCI2	---	---	---	---	---	5-10
Inland saltgrass	DIST	---	---	---	---	---	1-5
Other perennial grasses	PPGG	2-5	5-15	5-10	5-10	5-10	5-15
Native annual grasses	AAGG	---	1-5	1-5	1-5	1-5	2-5
Globemallow	SPHAE	1-3	---	---	---	---	---
Birdcage eveningprimrose	OEDE2	1-3	---	---	---	---	---
Other perennial forbs	PPFF	2-5	4-10	5-10	5-10	5-10	5-10
Native annual forbs	AAFF	---	1-5	2-5	2-5	2-5	2-5
Fourwing saltbush	ATCA2	15-30	---	---	---	---	2-5
Cooper wolfberry	LYCO2	10-20	---	---	---	---	5-10
Nevada dalea	DAPO2	5-10	---	---	---	---	---
Shadscale	ATCO	---	10-25	15-25	5-15	5-15	15-30
Bailey greasewood	SAVEB	---	5-10	5-15	5-15	5-15	---
Bud sagebrush	ARSP5	---	5-10	2-5	5-10	5-10	---
Winterfat	EULA5	---	5-10	---	---	---	---
Nevada ephedra	EPNE	---	1-5	2-5	5-10	5-10	---
Spiny menodora	MESP2	---	---	---	10-30	10-30	---
Black greasewood	SAVE4	---	---	---	---	---	5-15
Anderson wolfberry	LYAN	---	---	---	---	---	5-10
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Basin big sagebrush	ARTRT*	---	---	---	---	---	2-5
Other shrubs	SSSS	2-15	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	---	---	---	---
Site symbol		027X060N	029X017N	029X022N	029X036N	029X036N	029X024N
Potential production (lb/acre):							
Favorable years		400	350	300	400	400	800
Normal years		200	250	200	300	300	350
Unfavorable years		100	100	100	100	100	150

Elements of Wildlife Habitat

Suitability of Luning soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Candelaria soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor

Shrubs (nonirrigated)—very poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Luning Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping,seepage
(Candelaria Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Luning soil—VIIs, nonirrigated; Candelaria soil—VIIs, nonirrigated; Pintwater soil—VIIe, nonirrigated
Site symbol: Luning soil—027X060N; Candelaria soil—029X017N; Pintwater soil—029X022N

560—Unsel Variant-Vindicator-Espint association

Map Unit Setting

Position on landscape: Rock pediments, hills, alluvial fans
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Unsel Variant gravelly loamy sand, 2 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—35 percent
Vindicator gravelly sandy loam, 2 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Espint very gravelly fine sandy loam, 7 to 15 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Camborthids, 2 to 4 percent slopes (Typic Camborthids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Xeric Torriorthents, 2 to 4 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—6 percent
Inclusion 3: Rock outcrop—2 percent

Unsel Variant Soil

Position on landscape: Alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny hopsage, galleta, littleleaf mountainmahogany
Typical profile:
0 to 4 inches—gravelly loamy sand; 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 12 inches—gravelly sandy loam; 25 to 40 percent pebbles (by weight); prismatic structure; hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-6, A-7
12 to 25 inches—very gravelly loam; 50 to 60 percent pebbles (by weight); subangular blocky structure; hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
25 to 60 inches or more—stratified extremely gravelly sandy loam to extremely gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 75 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4.0 to 4.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Vindicator Soil

Position on landscape: Hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, littleleaf horsebrush, galleta
Typical profile:
0 to 2 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 20 to 35 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches

Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Espint Soil

Position on landscape: North-facing hillsides, upper side slopes of rock pediment remnants
Parent material: Kind—residuum, colluvium; source—various kinds of rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra, bottlebrush squirreltail
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans and stream terraces adjacent to fan piedmonts; distinctive present vegetation—spiny hopsage, galleta, fourwing saltbush
Inclusion 2: Position on landscape—inset fans and stream terraces adjacent to fan piedmonts; distinctive present vegetation—Wyoming big sagebrush, Douglas rabbitbrush
Inclusion 3: Position on landscape—small peaks and ridges on hills and rock pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 176)

Elements of Wildlife Habitat

Suitability of Unsel Variant soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Espint soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Unsel Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Espint Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock

TABLE 176.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Unsel Variant	Vindicator	Espint	1	2	3
Galleta	HIJA	5-20	5-15	5-15	5-20	5-15	---
Indian ricegrass	ORHY	5-20	5-10	5-10	5-10	5-10	---
Needlegrass	STIPA	---	2-5	5-10	2-5	2-10	---
Bottlebrush squirreltail	SIHY	---	1-3	1-4	---	1-5	---
Dropseed	SPORO	---	---	1-5	5-15	1-5	---
Other perennial grasses	PPGG	5-15	5-10	5-20	5-10	10-20	---
Native annual grasses	AAGG	2-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	5-10	4-10	5-7	5-10	---
Native annual forbs	AAFF	1-5	2-5	2-7	2-4	2-5	---
Spiny hopsage	GRSP	10-20	5-15	---	2-8	2-5	---
Bud sagebrush	ARSP5	5-15	2-5	---	5-10	---	---
Anderson wolfberry	LYAN	5-15	5-15	---	1-5	---	---
Fremont dalea	DAFR	2-10	5-10	---	---	---	---
Nevada dalea	DAPO2	2-10	5-10	---	---	---	---
Cooper wolfberry	LYCO2	2-5	2-5	---	---	---	---
Nevada ephedra	EPNE	2-5	1-5	5-10	---	2-5	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---	15-20	---
Fourwing saltbush	ATCA2	---	---	---	10-15	5-10	---
Winterfat	EULA5	---	---	---	5-20	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-25	10-25	---
Joshua-tree	YUBR	0-2	---	---	---	---	---
Site symbol		029X016N	029X021N	029X010N	029X046N	029X006N	---
Potential production (lb/acre):							
Favorable years		400	300	600	450	800	---
Normal years		300	200	400	350	500	---
Unfavorable years		200	100	200	175	300	---

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Unsel Variant soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated; Espint soil—VIIs, nonirrigated
Site symbol: Unsel Variant soil—029X016N; Vindicator soil—029X021N; Espint soil—029X010N

570—Espint-Vindicator association

Map Unit Setting

Position on landscape: Mountains, hills, rock pediments
Elevation: 5,500 to 6,300 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Espint very cobbly fine sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—35 percent
Vindicator gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—30 percent
Espint very gravelly fine sandy loam, 2 to 15 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel Variant gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—6 percent
Inclusion 2: Typic Torriorthents, 4 to 30 percent slopes (Typic Torriorthents - shallow)—6 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent

Espint, Very Cobbly, Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Vindicator Soil

Position on landscape: Side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, Nevada ephedra, galleta, Indian ricegrass
Typical profile:
0 to 2 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 20 to 35 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Espint, Very Gravelly, Soil

Position on landscape: Lower part of hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans adjacent to hills and mountains; distinctive present vegetation—spiny hopsage, galleta, littleleaf horsebrush
Inclusion 2: Position on landscape—hills, mountains; distinctive present vegetation—shadscale, galleta, Indian ricegrass
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 177)

Elements of Wildlife Habitat

Suitability of Espint, very cobbly, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Espint, very gravelly, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Espint, Very Cobbly, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Espint, Very Gravelly, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Espint, very cobbly, soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated; Espint, very gravelly, soil—VIIs, nonirrigated
Site symbol: Espint, very cobbly, soil—029X010N; Vindicator soil—029X021N; Espint, very gravelly, soil—029X010N

TABLE 177.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Espint, very cobbly	Vindicator	Espint, very gravelly	1	2	3
Galleta	HIJA	5-15	5-15	5-15	5-20	5-15	5-15
Needlegrass	STIPA	5-10	2-5	5-10	---	2-5	2-10
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	5-10	5-10
Bottlebrush squirreltail	SIHY	1-4	1-3	1-4	---	1-3	1-5
Dropseed	SPORO	1-5	---	1-5	---	---	1-5
Other perennial grasses	PPGG	5-20	5-10	5-20	5-15	5-10	10-20
Native annual grasses	AAGG	1-5	1-5	1-5	2-5	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	4-10	5-10	5-10	5-10
Native annual forbs	AAFF	2-7	2-5	2-7	1-5	2-5	2-5
Wyoming big sagebrush	ARTRW*	20-30	---	20-30	---	---	15-20
Nevada ephedra	EPNE	5-10	1-5	5-10	2-5	1-5	2-5
Spiny hopsage	GRSP	---	5-15	---	10-20	5-15	2-5
Anderson wolfberry	LYAN	---	5-15	---	5-15	5-15	---
Nevada dalea	DAPO2	---	5-10	---	2-10	5-10	---
Fremont dalea	DAFR	---	5-10	---	2-10	5-10	---
Cooper wolfberry	LYCO2	---	2-5	---	2-5	2-5	---
Bud sagebrush	ARSP5	---	2-5	---	5-15	2-5	---
Fourwing saltbush	ATCA2	---	---	---	---	---	5-10
Winterfat	EULA5	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	---	---	---	0-2	---	---
Site symbol		029X010N	029X021N	029X010N	029X016N	029X021N	029X006N
Potential production (lb/acre):							
Favorable years		600	300	600	400	300	800
Normal years		400	200	400	300	200	500
Unfavorable years		200	100	200	200	100	300

571—Espint-Stewval-Vindicator association

Map Unit Setting

Position on landscape: Mountains
Elevation: 5,900 to 6,500 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Espint very cobbly fine sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—40 percent
Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Vindicator very gravelly sandy loam, 30 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 8 to 30 percent slopes (Xeric Torriorthents - shallow)—8 percent
Inclusion 2: Rock outcrop—4 percent
Inclusion 3: Blacktop extremely stony sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent

Espint Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stewval Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Vindicator Soil

Position on landscape: South-facing mountainsides

Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, galleta, Nevada ephedra
Typical profile:
0 to 2 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—Wyoming big sagebrush, galleta, Nevada ephedra
Inclusion 2: Position on landscape—peaks, ridges, and side slopes of mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—south-facing mountainsides; distinctive present vegetation—shadscale, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 178)

Elements of Wildlife Habitat

Suitability of Espint soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Espint Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Espint soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated
Site symbol: Espint soil—029X010N; Stewval soil—029X014N; Vindicator soil—029X021N

TABLE 178.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Espint	Stewval	Vindicator	1	2	3
Galleta	HIJA	5-15	5-15	5-15	5-15	---	---
Needlegrass	STIPA	5-10	2-10	2-5	5-10	---	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	---	2-5
Bottlebrush squirreltail	SIHY	1-4	1-5	1-3	1-4	---	1-2
Dropseed	SPORO	1-5	---	---	1-5	---	---
Bluegrass	POA++	---	2-10	---	---	---	---
King desertgrass	BLKI	---	---	---	---	---	1-2
Other perennial grasses	PPGG	5-20	10-15	5-10	5-20	---	1-5
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	1-5
Perennial forbs	PPFF	4-10	5-10	5-10	4-10	---	2-5
Native annual forbs	AAFF	2-7	1-5	2-5	2-7	---	1-5
Wyoming big sagebrush	ARTRW*	20-30	---	---	20-30	---	---
Nevada ephedra	EPNE	5-10	5-10	1-5	5-10	---	---
Black sagebrush	ARARN	---	15-20	---	---	---	---
Bud sagebrush	ARSP5	---	2-5	2-5	---	---	2-5
Winterfat	EULA5	---	2-5	---	---	---	---
Spiny hopsage	GRSP	---	---	5-15	---	---	---
Anderson wolfberry	LYAN	---	---	5-15	---	---	---
Nevada dalea	DAPO2	---	---	5-10	---	---	5-10
Fremont dalea	DAFR	---	---	5-10	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	2-5
Shadscale	ATCO	---	---	---	---	---	40-60
Bailey greasewood	SAVEB	---	---	---	---	---	10-15
Other shrubs	SSSS	10-20	10-20	10-20	10-20	---	5-15
Site symbol		029X010N	029X014N	029X021N	029X010N	---	029X033N
Potential production (lb/acre):							
Favorable years		600	500	300	600	---	100
Normal years		400	300	200	400	---	50
Unfavorable years		200	100	100	200	---	25

590—Vindicator-Espint-Dumps association

Map Unit Setting

Position on landscape: Mountains, hills, rock pediments
Elevation: 5,800 to 6,200 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Vindicator gravelly sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Espint very gravelly fine sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—25 percent
Dumps (mine)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel Variant gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent
Inclusion 3: Rock outcrop—2 percent
Inclusion 4: Stewval very gravelly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—1 percent

Vindicator Soil

Position on landscape: Mountains, hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, galleta, Nevada ephedra
Typical profile:
0 to 2 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 20 to 35 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Espint Soil

Position on landscape: North-facing side slopes of mountains, hills, and rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Dumps

Position on landscape: Hills, mountains
Parent material: Mine tailings, mostly from volcanic rock
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans adjacent to hills; distinctive present vegetation—spiny hopsage, Nevada ephedra, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 3: Position on landscape—peaks, ridges, and side slopes of hills, mountains, and rock pediments; distinctive present vegetation—barren
Inclusion 4: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—black sagebrush, Sandberg bluegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 179)

Elements of Wildlife Habitat

Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Espint soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Espint Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Vindicator soil—VIIs, nonirrigated; Espint soil—VIIs, nonirrigated; Dumps—VIIIs
Site symbol: Vindicator soil—029X021N; Espint soil—029X010N

TABLE 179.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Vindicator	Espint	Dumps	1	2	3	4
Galleta	HIJA	5-15	5-15	---	5-20	1-3	---	5-15
Indian ricegrass	ORHY	5-10	5-1	---	5-20	2-5	---	5-10
Needlegrass	STIPA	2-5	5-10	---	---	---	---	2-10
Bottlebrush squirreltail	SIHY	1-3	1-4	---	---	---	---	1-5
Dropseed	SPORO	---	1-5	---	---	---	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---	---
Bluegrass	POA++	---	---	---	---	---	---	2-10
Other perennial grasses	PPGG	5-10	5-20	---	5-15	5-10	---	10-15
Native annual grasses	AAGG	1-5	1-5	---	2-5	1-5	---	1-5
Perennial forbs	PPFF	5-10	4-10	---	5-10	5-10	---	5-10
Native annual forbs	AAFF	2-5	2-7	---	1-5	1-5	---	1-5
Spiny hopsage	GRSP	5-15	---	---	10-20	---	---	---
Anderson wolfberry	LYAN	5-15	---	---	5-15	---	---	---
Nevada dalea	DAPO2	5-10	---	---	2-10	---	---	---
Fremont dalea	DAFR	5-10	---	---	2-10	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	2-5	---	---	---
Bud sagebrush	ARSP5	2-5	---	---	5-15	---	---	2-5
Nevada ephedra	EPNE	1-5	5-10	---	2-5	1-5	---	5-10
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	---	---
Black sagebrush	ARARN	---	---	---	---	---	---	15-20
Winterfat	EULA5	---	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	---	10-20	10-25	---	10-20
Joshua-tree	YUBR	---	---	---	0-2	---	---	---
Site symbol		029X021N	029X010N	---	029X016N	029X009N	---	029X014N
Potential production (lb/acre):								
Favorable years		300	600	---	400	700	---	500
Normal years		200	400	---	300	500	---	300
Unfavorable years		100	200	---	200	200	---	100

591—Vindicator-Unsel-Leo association

Map Unit Setting

Position on landscape: Fan piedmonts, rock pediments
Elevation: 5,500 to 5,900 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Vindicator very gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Unsel gravelly fine sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—30 percent
Leo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel Variant gravelly sandy loam, 2 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—6 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Typic Torriorthents, 2 to 8 percent slopes (Typic Torriorthents)—4 percent

Vindicator Soil

Position on landscape: Rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, galleta, Indian ricegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 45 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 4); estimated Unified classification - SM-SC; estimated AASHTO classification - A-6
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); slightly sodic (SAR 13 to 20); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches

Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Leo Soil

Position on landscape: Inset fans and stream terraces adjacent to fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Dalea, littleleaf horsebrush, Indian ricegrass, spiny hopsage, Anderson wolfberry
Typical profile:
0 to 4 inches—gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of fan piedmont remnants and inset fans; distinctive present vegetation—spiny hopsage, galleta, Indian ricegrass
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush
Inclusion 3: Position on landscape—rock pediment remnants; distinctive present vegetation—spiny hopsage, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 180)

Elements of Wildlife Habitat

Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 180.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Vindicator	Unsel	Leo	1	2	3
Galleta	HIJA	5-15	10-25	5-20	5-20	1-3	5-20
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	2-5	5-20
Needlegrass	STIPA	2-5	2-5	2-5	---	---	---
Bottlebrush squirreltail	SIHY	1-3	2-5	---	---	---	---
Dropseed	SPORO	---	---	5-15	---	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-15	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	2-5	1-5	2-5
Perennial forbs	PPFF	5-10	4-10	5-7	5-10	5-10	5-10
Native annual forbs	AAFF	2-5	1-5	2-4	1-5	1-5	1-5
Spiny hopsage	GRSP	5-15	---	2-8	10-20	---	10-20
Anderson wolfberry	LYAN	5-15	---	1-5	5-15	---	5-15
Nevada dalea	DAPO2	5-10	---	---	2-10	---	2-10
Fremont dalea	DAFR	5-10	---	---	2-10	---	2-10
Cooper wolfberry	LYCO2	2-5	---	---	2-5	---	2-5
Bud sagebrush	ARSP5	2-5	5-10	5-10	5-15	---	5-15
Nevada ephedra	EPNE	1-5	1-5	---	2-5	1-5	2-5
Shadscale	ATCO	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	---	---	---	---
Winterfat	EULA5	---	5-10	5-20	---	---	---
Fourwing saltbush	ATCA2	---	---	10-15	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	---
Other shrubs	SSSS	10-20	10-20	10-25	10-20	10-25	10-20
Joshua-tree	YUBR	---	1-2	---	0-2	---	0-2
Site symbol		029X021N	029X017N	029X046N	029X016N	029X009N	029X016N
Potential production (lb/acre):							
Favorable years		300	350	450	400	700	400
Normal years		200	250	350	300	500	300
Unfavorable years		100	100	175	200	200	200

Interpretive Groups

Capability classification: Vindicator soil—VIIs, nonirrigated; Unsel soil—VIIc, nonirrigated; Leo soil—VIIs, nonirrigated

Site symbol: Vindicator soil—029X021N; Unsel soil—029X017N; Leo soil—029X046N

592—Vindicator-Gabbvally-Advokay association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,900 to 6,500 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Vindicator very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Advokay gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Unsel Variant very gravelly sandy loam, 4 to 15 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 2: Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Leo very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Vindicator Soil

Position on landscape: Mainly south- and west-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, galleta, Indian ricegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Gabbvally Soil

Position on landscape: Mainly north-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Advokay Soil

Position on landscape: Lower part of south-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 20 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—mountain-valley fans and alluvial fans adjacent to hills and mountains; distinctive present vegetation—spiny hopsage, Indian ricegrass, galleta
Inclusion 2: Position on landscape—mountain-valley fans and alluvial fans adjacent to hills and mountains; distinctive present vegetation—Wyoming big sagebrush, galleta
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 4: Position on landscape—inset fans, stream terraces; distinctive present vegetation—spiny hopsage, Indian ricegrass, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 181)

Elements of Wildlife Habitat

Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines

TABLE 181.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Vindicator	Gabbvally	Advokay	1	2	3	4
Galleta	HIJA	5-15	5-15	10-25	5-20	5-25	1-3	5-20
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	5-15	2-5	5-10
Needlegrass	STIPA	2-5	5-10	2-5	---	5-15	---	2-5
Bottlebrush squirreltail	SIHY	1-3	1-4	2-5	---	1-5	---	---
Dropseed	SPORO	---	1-5	---	---	5-15	---	5-15
Basin wildrye	ELCI2	---	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-20	5-15	5-15	5-20	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	4-10	5-10	3-10	5-10	5-7
Native annual forbs	AAFF	2-5	2-7	1-5	1-5	2-5	1-5	2-4
Spiny hopsage	GRSP	5-15	---	---	10-20	5-10	---	2-8
Anderson wolfberry	LYAN	5-15	---	---	5-15	---	---	1-5
Nevada dalea	DAPO2	5-10	---	---	2-10	---	---	---
Fremont dalea	DAFR	5-10	---	---	2-10	---	---	---
Cooper wolfberry	LYCO2	2-5	---	---	2-5	---	---	---
Bud sagebrush	ARSP5	2-5	---	5-10	5-15	5-10	---	5-10
Nevada ephedra	EPNE	1-5	5-10	1-5	2-5	---	1-5	---
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	15-20	---	---
Shadscale	ATCO	---	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	---	5-10	---	---	---	---
Winterfat	EULA5	---	---	5-10	---	2-10	---	5-20
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5	---
Fourwing saltbush	ATCA2	---	---	---	---	---	---	10-15
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-25	10-25
Joshua-tree	YUBR	---	---	1-2	0-2	---	---	---
Site symbol		029X021N	029X010N	029X017N	029X016N	029X049N	029X009N	029X046N
Potential production (lb/acre):								
Favorable years		300	600	350	400	900	700	450
Normal years		200	400	250	300	600	500	350
Unfavorable years		100	200	100	200	300	200	175

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Vindicator soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated
Site symbol: Vindicator soil—029X021N; Gabbvally soil—029X010N; Advokay soil—029017N

593—Vindicator-Downeyville-Blacktop association

Map Unit Setting

Position on landscape: Hills
Elevation: 5,500 to 6,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Vindicator very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Downeyville very gravelly fine sandy loam, moist, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Blacktop very gravelly sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—8 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Gabbvally stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—2 percent

Vindicator Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Nevada ephedra, dalea, littleleaf horsebrush
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Downeyville Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Blacktop Soil

Position on landscape: Eroded side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges of hills; distinctive present vegetation—barren
Inclusion 2: Position on landscape—hills; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—north-facing hillsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion of minor extent: Position on landscape—drainageways; distinctive present vegetation—fourwing saltbush, horsebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 182)

Elements of Wildlife Habitat

Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes and levees: Severe—thin layer
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Vindicator soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Vindicator soil—029X021N; Downeyville soil—029X037N; Blacktop soil—029X033N

TABLE 182.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Vindicator	Downeyville	Blacktop	1	2	3
Galleta	HIJA	5-15	10-20	---	---	5-20	5-15
Indian ricegrass	ORHY	5-10	2-5	2-5	---	5-15	5-10
Needlegrass	STIPA	2-5	5-10	---	---	5-10	5-10
Bottlebrush squirreltail	SIHY	1-3	---	1-2	---	2-5	1-4
King desertgrass	BLKI	---	---	1-2	---	---	---
Dropseed	SPORO	---	---	---	---	---	1-5
Other perennial grasses	PPGG	5-10	5-10	1-5	---	5-10	5-20
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	2-5	---	5-10	4-10
Native annual forbs	AAFF	2-5	2-5	1-5	---	2-5	2-7
Spiny hopsage	GRSP	5-15	---	---	---	---	---
Anderson wolfberry	LYAN	5-15	5-10	---	---	---	---
Nevada dalea	DAPO2	5-10	---	5-10	---	---	---
Fremont dalea	DAFR	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	2-5	---	2-5	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	---	2-5	---
Nevada ephedra	EPNE	1-5	5-10	---	---	2-5	5-10
Spiny menodora	MESP2	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	10-15	---	5-15	---
Shadscale	ATCO	---	2-5	40-60	---	15-25	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	---	20-30
Other shrubs	SSSS	10-20	15-25	5-15	---	10-20	10-20
Site symbol		O29XO21N	O29XO37N	O29XO33N	---	O29XO22N	O29XO10N
Potential production (lb/acre):							
Favorable years		300	300	100	---	300	600
Normal years		200	200	50	---	200	400
Unfavorable years		100	100	25	---	100	200

600—Trailamp-Sylvaniam association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,800 to 8,200 feet
Climatic data (average annual):
Precipitation—about 14 inches
Air temperature—about 45 degrees F
Frost-free season—about 90 days

Composition

Trailamp very gravelly loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—45 percent
Sylvaniam gravelly loam, 30 to 50 percent slopes (Typic Calcixerolls - loamy-skeletal, carbonatic, frigid)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Hiridge very gravelly sandy loam, 15 to 50 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow—5 percent
Inclusion 2: Rock outcrop—4 percent
Inclusion 3: Ubehebe very gravelly loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—3 percent
Inclusion 4: Kiote very gravelly loam, 30 to 50 percent slopes (Argic Pachic Cryoborolls - loamy-skeletal, mixed)—3 percent

Trailamp Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, mountain big sagebrush, bitterbrush
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
2 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly fine sandy loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2, A-4, A-6
9 inches—weathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.6 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Sylvaniam Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, mountain big sagebrush, bitterbrush
Typical profile:
0 to 11 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-4
11 to 32 inches—very gravelly loam, very gravelly fine sandy loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-2
32 inches—unweathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Permeability: Moderate
Available water capacity: 3.5 to 4.0 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—6
Hazard of erosion: By water—severe; by wind—moderate
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—ridges, mountaintops; distinctive present vegetation—low sagebrush, bluegrass
Inclusion 2: Position on landscape—small peaks and ridges on mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—lower part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 4: Position on landscape—upper part of mountainsides; distinctive present vegetation—mountain big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 183)

Woodland

(Trailamp Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Mountain big sagebrush, desert bitterbrush, green ephedra, bottlebrush squirreltail, curlleaf mountainmahogany, currant, pine bluegrass, prairie junegrass
(Sylvaniam Soil)
Site index for common trees: Singleleaf pinyon—75
Most important native understory plants: Mountain big sagebrush, currant, snowberry, curlleaf mountainmahogany, Sandberg bluegrass, prairie junegrass, Wyoming big sagebrush, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Trailamp soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Sylvaniam soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Trailamp Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, low strength
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Sylvaniam Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—erodes easily, soil blowing
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Trailamp soil—VIIs, nonirrigated; Sylvaniam soil—VIe, nonirrigated
Woodland suitability group: Trailamp soil—1r; Sylvaniam soil—2r

TABLE 183.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Trailamp	Sylvaniam	1	2	3	4
Muttongrass	POFE	25-40	25-40	---	---	2-5	---
Bluegrass	POA++	10-20	10-20	3-5	---	10-20	3-8
Bottlebrush squirreltail	SIHY	5-10	5-10	---	---	5-15	---
Prairie junegrass	KOCR	5-10	5-10	---	---	---	---
Needlegrass	STIPA	2-5	2-5	5-10	---	5-15	5-10
Western wheatgrass	AGSM	---	---	5-10	---	---	---
Needleandthread	STCO4	---	---	---	---	2-5	---
Indian ricegrass	ORHY	---	---	---	---	2-5	---
Mountain brome	BRMA4	---	---	---	---	---	5-10
Slender wheatgrass	AGTR	---	---	---	---	---	3-8
Other perennial grasses	PPGG	5-10	5-10	10-15	---	5-10	10-20
Native annual grasses	AAGG	---	---	2-4	---	---	2-5
Perennial forbs	PPFF	5-15	5-15	8-12	---	5-15	10-15
Native annual forbs	AAFF	1-3	1-3	3-7	---	1-3	3-5
Mountain big sagebrush	ARTRV	10-20	10-20	---	---	---	10-20
Bitterbrush	PURSH	5-15	5-15	---	---	5-10	---
Snowberry	SYMPH	2-5	2-5	---	---	---	5-10
Curlleaf mountainmahogany	CELE3	2-5	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	1-3	1-3	---	---	2-5	---
Low sagebrush	ARAR8	---	---	20-30	---	---	---
Low rabbitbrush	CHVIH2	---	---	3-5	---	---	---
Horsebrush	TETRA3	---	---	2-5	---	---	---
Black sagebrush	ARARN	---	---	---	---	15-25	---
Green ephedra	EPVI	---	---	---	---	2-5	1-3
Serviceberry	AMELA	---	---	---	---	---	3-5
Other shrubs	SSSS	5-15	5-15	15-20	---	5-10	5-10
Singleleaf pinyon	PIMO	2-5	2-5	---	---	5-10	---
Utah juniper	JUOS	1-3	1-3	---	---	5-10	---
Site symbol		029X066N	029X066N	029X053N	---	029X069N	029X051N
Potential production (lb/acre):							
Favorable years		475	475	700	---	350	1,000
Normal years		375	375	400	---	275	700
Unfavorable years		200	200	300	---	150	400

601—Trailamp-Entero association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,800 to 7,800 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 45 degrees F
Frost-free season—about 110 days

Composition

Trailamp very gravelly loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—60 percent
Entero very gravelly loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Sylvaniam very gravelly loam, 30 to 50 percent slopes (Typic Calcixerolls - loamy-skeletal, carbonatic, frigid)—8 percent
Inclusion 2: Ubehebe very gravelly loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—7 percent

Trailamp Soil

Position on landscape: Upper side slopes of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, mountain big sagebrush, bitterbrush
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
2 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly fine sandy loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2, A-4, A-6
9 inches—weathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.6 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Entero Soil

Position on landscape: Mainly south-facing lower side slopes of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, bottlebrush squirreltail, galleta, desert bitterbrush
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion 2: Position on landscape—lower part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 184)

Woodland

(Trailamp Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Mountain big sagebrush, desert bitterbrush, green ephedra, bottlebrush squirreltail, curlleaf mountainmahogany, currant, pine bluegrass, prairie junegrass

Elements of Wildlife Habitat

Suitability of Trailamp soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Trailamp Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Trailamp soil—VIIs, nonirrigated; Entero soil—VIIs, nonirrigated
Site symbol: Entero soil—029X010N
Woodland suitability group: Trailamp soil—1r

TABLE 184.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Trailamp	Entero	1	2
Muttongrass	POFE	25-40	---	25-40	2-5
Bluegrass	POA++	10-20	---	10-20	10-20
Bottlebrush squirreltail	SIHY	5-10	1-4	5-10	5-15
Prairie junegrass	KOCR	5-10	---	5-10	---
Needlegrass	STIPA	2-5	5-10	2-5	5-15
Galleta	HIJA	---	5-15	---	---
Indian ricegrass	ORHY	---	5-10	---	2-5
Dropseed	SPORO	---	1-5	---	---
Other perennial grasses	PPGG	5-10	5-20	5-10	5-10
Native annual grasses	AAGG	---	1-5	---	---
Perennial forbs	PPFF	5-15	4-10	5-15	5-15
Native annual forbs	AAFF	1-3	2-7	1-3	1-3
Mountain big sagebrush	ARTRV	10-20	---	10-20	---
Bitterbrush	PURSH	5-15	---	5-15	5-10
Snowberry	SYMPH	2-5	---	2-5	---
Curlleaf mountainmahogany	CELE3	2-5	---	2-5	---
Douglas rabbitbrush	CHVI8	1-3	---	1-3	2-5
Wyoming big sagebrush	ARTRW*	---	20-30	---	---
Nevada ephedra	EPNE	---	5-10	---	---
Black sagebrush	ARARN	---	---	---	15-25
Green ephedra	EPVI	---	---	---	2-5
Other shrubs	SSSS	5-15	10-20	5-15	5-10
Singleleaf pinyon	PIMO	2-5	---	2-5	5-10
Utah juniper	JUOS	1-3	---	1-3	5-10
Site symbol		O29XO66N	O29XO10N	O29XO66N	O29XO69N
Potential production (lb/acre):					
Favorable years		475	600	475	350
Normal years		375	400	375	275
Unfavorable years		200	200	200	150

610—Ubehebe-Logring-Penelas association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,500 to 8,000 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 49 degrees F
Frost-free season—about 110 days

Composition

Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—35 percent
Logring very gravelly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—25 percent
Penelas very channery loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Kyler very cobbly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Zadvar very gravelly fine sandy loam, 4 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—5 percent
Inclusion 3: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Ubehebe Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Logring Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush
Typical profile:
0 to 7 inches—very gravelly loam; 10 to 15 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
7 to 14 inches—extremely cobbly loam, very cobbly fine sandy loam, very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
14 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Penelas Soil

Position on landscape: South-facing and lower side slopes of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, bottlebrush squirreltail, pine bluegrass
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of mountainsides; distinctive present vegetation—black sagebrush, Nevada ephedra, pine bluegrass
Inclusion 2: Position on landscape—mountain-valley fans; distinctive present vegetation—black sagebrush, bottlebrush squirreltail
Inclusion 3: Position on landscape—drainageways of mountain-valley fans; distinctive present vegetation—Wyoming big sagebrush, rubber rabbitbrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 185)

Woodland

(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush
(Logring Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, Nevada ephedra, bottlebrush squirreltail, desert bitterbrush, pine bluegrass, galleta

Elements of Wildlife Habitat

Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Logring soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 185.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Ubehebe	Logring	Penelas	1	2	3
Bluegrass	POA++	10-20	10-20	2-10	2-10	---	---
Bottlebrush squirreltail	SIHY	5-15	5-15	1-5	1-5	---	---
Needlegrass	STIPA	5-15	5-15	2-10	2-10	5-15	5-20
Muttongrass	POFE	2-5	2-5	---	---	---	---
Needleandthread	STCO4	2-5	2-5	---	---	---	---
Indian ricegrass	ORHY	2-5	2-5	5-10	5-10	5-10	---
Galleta	HIJA	---	---	5-15	5-15	5-20	---
Basin wildrye	ELCI2	---	---	---	---	---	10-20
Western wheatgrass	AGSM	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-10	5-10	10-15	10-15	10-15	10-20
Native annual grasses	AAGG	---	---	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-15	5-15	5-10	5-10	3-8	2-10
Native annual forbs	AAFF	1-3	1-3	1-5	1-5	2-5	1-5
Black sagebrush	ARARN	15-25	15-25	15-20	15-20	20-25	---
Bitterbrush	PURSH	5-10	5-10	---	---	---	1-5
Green ephedra	EPVI	2-5	2-5	---	---	---	1-5
Douglas rabbitbrush	CHVI8	2-5	2-5	---	---	---	---
Nevada ephedra	EPNE	---	---	5-10	5-10	2-5	---
Bud sagebrush	ARSP5	---	---	2-5	2-5	5-10	---
Winterfat	EULA5	---	---	2-5	2-5	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	5-20
Mexican cliffrose	COME5	---	---	---	---	---	1-5
Curlleaf mountainmahogany	CELE3	---	---	---	---	---	1-2
Other shrubs	SSSS	5-10	5-10	10-20	10-20	10-20	10-15
Singleleaf pinyon	PIMO	5-10	5-10	---	---	---	1-2
Utah juniper	JUOS	5-10	5-10	---	---	---	1-2
Common chokecherry	PRVI	---	---	---	---	---	2-4
Willow	SALIX	---	---	---	---	---	1-3
Site symbol		O29XO69N	O29XO69N	O29XO14N	O29XO14N	O29XO08N	O29XO05N
Potential production (lb/acre):							
Favorable years		350	350	500	500	700	900
Normal years		275	275	300	300	400	500
Unfavorable years		150	150	100	100	200	300

Embankments, dikes, and levees: Severe—thin layer

(Logring Soil)
Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage

(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Ubehebe soil—VIIs, nonirrigated; Logring soil—VIIs, nonirrigated; Penelas soil—VIIs, nonirrigated
Site symbol: Penelas soil—029X014N
Woodland suitability group: Ubehebe soil—1r; Logring soil—1r

611—Ubehebe-Trailamp association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,200 to 8,000 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 45 degrees F
Frost-free season—about 110 days

Composition

Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—50 percent
Trailamp very gravelly loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Logring very cobbly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—3 percent
Inclusion 2: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Gabbvally very gravelly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Armespan Variant very gravelly loam, 4 to 15 percent slopes (Typic Durixerolls - loamy-skeletal, mixed, mesic, shallow)—2 percent

Ubehebe Soil

Position on landscape: Lower part of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, Nevada ephedra, bluegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Trailamp Soil

Position on landscape: Upper part of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, mountain big sagebrush, bitterbrush
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
2 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly fine sandy loam; 5 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2, A-4, A-6
9 inches—weathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.6 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountains; distinctive present vegetation—singleleaf pinyon, black sagebrush
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, mountain big sagebrush
Inclusion 3: Position on landscape—lower part of mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 4: Position on landscape—fan remnants adjacent to mountains; distinctive present vegetation—singleleaf pinyon, Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 186)

Woodland

(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush
(Trailamp Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Mountain big sagebrush, desert bitterbrush, green ephedra, bottlebrush squirreltail, curlleaf mountainmahogany, currant, pine bluegrass, prairie junegrass

Elements of Wildlife Habitat

Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Trailamp soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Trailamp Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Ubehebe soil—VIIs, nonirrigated; Trailamp soil—VIIs, nonirrigated
Woodland suitability group: Ubehebe soil—1r; Trailamp soil—1r

TABLE 186.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Ubehebe	Trailamp	1	2	3	4
Bluegrass	POA++	10-20	10-20	10-20	---	---	10-20
Bottlebrush squirreltail	SIHY	5-15	5-10	5-15	---	1-4	1-5
Needlegrass	STIPA	5-15	2-5	5-15	---	5-10	5-10
Muttongrass	POFE	2-5	25-40	2-5	---	---	---
Needleandthread	STCO4	2-5	---	2-5	---	---	---
Indian ricegrass	ORHY	2-5	---	2-5	2-5	5-10	1-5
Prairie junegrass	KOCR	---	5-10	---	---	---	5-10
Basin wildrye	ELCI2	---	---	---	2-5	---	---
Galleta	HIJA	---	---	---	1-3	5-15	---
Dropseed	SPORO	---	---	---	---	1-5	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-20	5-15
Native annual grasses	AAGG	---	---	---	1-5	1-5	1-3
Perennial forbs	PPFF	5-15	5-15	5-15	5-10	4-10	5-10
Native annual forbs	AAFF	1-3	1-3	1-3	1-5	2-7	1-5
Black sagebrush	ARARN	15-25	---	15-25	---	---	---
Bitterbrush	PURSH	5-10	5-15	5-10	---	---	5-10
Green ephedra	EPVI	2-5	---	2-5	---	---	---
Douglas rabbitbrush	CHVI8	2-5	1-3	2-5	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	---	---	---	---
Snowberry	SYMPH	---	2-5	---	---	---	---
Curlleaf mountainmahogany	CELE3	---	2-5	---	---	---	1-5
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---
Nevada ephedra	EPNE	---	---	---	1-5	5-10	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	20-30	10-20
Serviceberry	AMELA	---	---	---	---	---	1-5
Green ephedra	ERVI	---	---	---	---	---	2-5
Other shrubs	SSSS	5-10	5-15	5-10	10-25	10-20	10-20
Singleleaf pinyon	PIMO	5-10	2-5	5-10	---	---	2-5
Utah juniper	JUOS	5-10	1-3	5-10	---	---	1-4
Site symbol		029X069N	029X066N	029X069N	029X009N	029X010N	029X065N
Potential production (lb/acre):							
Favorable years		350	475	350	700	600	425
Normal years		275	375	275	500	400	350
Unfavorable years		150	200	150	200	200	200

612—Ubehebe-Weepah association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,500 to 7,600 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 50 degrees F
Frost-free season—about 110 days

Composition

Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—50 percent
Weepah very gravelly loam, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Armoine extremely gravelly sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Kyler very gravelly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—5 percent
Inclusion 3: Rock outcrop—3 percent

Ubehebe Soil

Position on landscape: Upper part of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra, galleta, desert needlegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Weepah Soil

Position on landscape: West-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—siltstone
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, spiny menodora, ephedra, galleta, desert needlegrass
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 8 inches—very gravelly loam, extremely gravelly fine sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid

Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountains; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—hills, mountains; distinctive present vegetation—black sagebrush
Inclusion 3: Position on landscape—hills, mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 187)

Woodland

(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Weepah soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Weepah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Ubehebe soil—VIIs, nonirrigated; Weepah soil—VIIs, nonirrigated
Site symbol: Weepah soil—029X014N
Woodland suitability group: Ubehebe soil—1r

TABLE 187.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Ubehebe	Weepah	1	2	3
Bluegrass	POA++	10-20	2-10	2-10	2-10	---
Bottlebrush squirreltail	SIHY	5-15	1-5	1-5	1-5	---
Needlegrass	STIPA	5-15	2-10	2-10	2-10	---
Muttongrass	POFE	2-5	---	---	---	---
Needleandthread	STCO4	2-5	---	---	---	---
Indian ricegrass	ORHY	2-5	5-10	5-10	5-10	---
Galleta	HIJA	---	5-15	5-15	5-15	---
Other perennial grasses	PPGG	5-10	10-15	10-15	10-15	---
Native annual grasses	AAGG	---	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-15	5-10	5-10	5-10	---
Native annual forbs	AAFF	1-3	1-5	1-5	1-5	---
Black sagebrush	ARARN	15-25	15-20	15-20	15-20	---
Bitterbrush	PURSH	5-10	---	---	---	---
Green ephedra	EPVI	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	2-5	---	---	---	---
Nevada ephedra	EPNE	---	5-10	5-10	5-10	---
Bud sagebrush	ARSP5	---	2-5	2-5	2-5	---
Winterfat	EULA5	---	2-5	2-5	2-5	---
Other shrubs	SSSS	5-10	10-20	10-20	10-20	---
Singleleaf pinyon	PIMO	5-10	---	---	---	---
Utah juniper	JUOS	5-10	---	---	---	---
Site symbol		029X069N	029X014N	029X014N	029X014N	---
Potential production (lb/acre):						
Favorable years		350	500	500	500	---
Normal years		275	300	300	300	---
Unfavorable years		150	100	100	100	---

620—Cucamungo-Tulecan-Ubehebe association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,500 to 8,200 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 45 degrees F
Frost-free season—about 110 days

Composition

Cucamungo very gravelly sandy loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—35 percent
Tulecan very cobbly coarse sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—30 percent
Ubehebe very gravelly sandy loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Alcan gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Armoine very gravelly sandy loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—6 percent
Inclusion 3: Rock outcrop—2 percent

Cucamungo Soil

Position on landscape: Upper part of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, currant, mountain big sagebrush
Typical profile:
0 to 3 inches—very gravelly sandy loam; 5 to 15 percent cobbles and stones and 30 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Tulecan Soil

Position on landscape: Lower part of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush
Typical profile:
0 to 4 inches—very cobbly coarse sandy loam; 40 to 50 percent cobbles and stones and 30 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 15 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam, very cobbly sandy clay loam; 10 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Ubehebe Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, lower part of mountainsides; distinctive present vegetation—black sagebrush, pine bluegrass, bottlebrush squirreltail
Inclusion 2: Position on landscape—hills, lower part of mountainsides; distinctive present vegetation—black sagebrush, pine bluegrass
Inclusion 3: Position on landscape—mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community

(see table 188)

Woodland

(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush
(Tulecan Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, pine bluegrass, bottlebrush squirreltail, green ephedra, galleta
(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Tulecan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cucamungo Soil)
Suitability and limitations for the following uses:

TABLE 188.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cucamungo	Tulecan	Ubehebe	1	2	3
Muttongrass	POFE	25-40	2-5	2-5	---	---	---
Bluegrass	POA++	10-20	10-20	10-20	2-5	2-10	---
Bottlebrush squirreltail	SIHY	5-10	5-15	5-15	---	1-5	---
Prairie junegrass	KOCR	5-10	---	---	---	---	---
Needlegrass	STIPA	2-5	5-15	5-15	5-20	2-10	---
Indian ricegrass	ORHY	---	2-5	2-5	2-5	5-10	---
Galleta	HIJA	---	---	---	15-20	5-15	---
Purple threeawn	ARPU9	---	---	---	5-10	---	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	10-15	---
Native annual grasses	AAGG	---	---	---	---	1-5	---
Perennial forbs	PPFF	5-15	5-15	5-15	5-10	5-10	---
Native annual forbs	AAFF	1-3	1-3	1-3	1-2	1-5	---
Mountain big sagebrush	ARTRV	10-20	---	---	---	---	---
Bitterbrush	PURSH	5-15	5-10	5-10	5-10	---	---
Snowberry	SYMPH	2-5	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	---	---	---
Douglas rabbitbrush	CHVI8	1-3	2-5	2-5	---	---	---
Black sagebrush	ARARN	---	15-25	15-25	---	15-20	---
Green ephedra	EPVI	---	2-5	2-5	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	15-20	---	---
Nevada ephedra	EPNE	---	---	---	5-10	5-10	---
Fourwing saltbush	ATCA2	---	---	---	2-5	---	---
Bud sagebrush	ARSP5	---	---	---	---	2-5	---
Winterfat	EULA5	---	---	---	---	2-5	---
Other shrubs	SSSS	5-15	5-10	5-10	10-15	10-20	---
Singleleaf pinyon	PIMO	2-5	5-10	5-10	---	---	---
Utah juniper	JUOS	1-3	5-10	5-10	---	---	---
Site symbol		029X066N	029X069N	029X069N	029X029N	029X014N	---
Potential production (lb/acre):							
Favorable years		475	350	350	800	500	---
Normal years		375	275	275	600	300	---
Unfavorable years		200	150	150	400	100	---

Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

(Tulecan Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, large stones

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer, large stones

(Ubehebe Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, small stones, soil blowing

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Cucamungo soil—VIIs, nonirrigated; Tulecan soil—VIIs, nonirrigated; Ubehebe soil—VIIs, nonirrigated

Woodland suitability group: Cucamungo soil—2r; Tulecan soil—1r; Ubehebe soil—1r

622—Cucamungo-Alcan association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,000 to 7,800 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 45 degrees F
Frost-free season—about 110 days

Composition

Cucamungo very gravelly sandy loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—60 percent
Alcan very gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 50 to 75 percent slopes (Xeric Torriorthents - sandy, mixed, mesic, shallow)—8 percent
Inclusion 2: Xerollic Camborthids, 2 to 8 percent slopes (Xerollic Camborthids - coarse-loamy, mixed, mesic)—4 percent
Inclusion 3: Rock outcrop—2 percent
Inclusion 4: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Cucamungo Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, Utah juniper, mountain big sagebrush
Typical profile:
0 to 3 inches—very gravelly sandy loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Alcan Soil

Position on landscape: Lower part of north-facing shoulders of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, desert bitterbrush
Typical profile:
0 to 2 inches—very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 13 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
13 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low

Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—Wyoming big sagebrush, desert bitterbrush, ephedra
Inclusion 2: Position on landscape—alluvial fans adjacent to mountains; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra, galleta
Inclusion 3: Position on landscape—shoulders and side slopes of mountains; distinctive present vegetation—barren
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, basin big sagebrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 189)

Woodland

(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Alcan soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cucamungo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Alcan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Cucamungo soil—VIIs, nonirrigated; Alcan soil—VIIs, nonirrigated
Site symbol: Alcan soil—029X029N
Woodland suitability group: Cucamungo soil—2r

TABLE 189.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Cucamungo	Alcan	1	2	3	4
Muttongrass	POFE	25-40	---	---	---	---	---
Bluegrass	POA++	10-20	2-5	3-5	---	---	---
Bottlebrush squirreltail	SIHY	5-10	---	---	1-5	---	---
Prairie junegrass	KOCR	5-10	---	---	---	---	---
Needlegrass	STIPA	2-5	5-20	5-10	2-10	---	---
Galleta	HIJA	---	15-20	5-10	5-15	---	1-3
Purple threeawn	ARPU9	---	5-10	---	---	---	---
Indian ricegrass	ORHY	---	2-5	3-5	5-10	---	2-5
Beardless wheatgrass	AGIN	---	---	5-10	---	---	---
Dropseed	SPORO	---	---	---	1-5	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	10-20	10-20	---	5-10
Native annual grasses	AAGG	---	---	2-4	1-5	---	1-5
Perennial forbs	PPFF	5-15	5-10	4-12	5-10	---	5-10
Native annual forbs	AAFF	1-3	1-2	2-5	2-5	---	1-5
Mountain big sagebrush	ARTRV	10-20	---	10-25	---	---	---
Bitterbrush	PURSH	5-15	5-10	2-5	---	---	---
Snowberry	SYMPH	2-5	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	---	---	---
Douglas rabbitbrush	CHVI8	1-3	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	15-20	---	15-20	---	---
Nevada ephedra	EPNE	---	5-10	---	2-5	---	1-5
Fourwing saltbush	ATCA2	---	2-5	---	5-10	---	---
Green ephedra	EPVI	---	---	3-7	---	---	---
Winterfat	EULA5	---	---	---	2-5	---	---
Spiny hopsage	GRSP	---	---	---	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	5-15	10-15	10-20	10-25	---	10-25
Singleleaf pinyon	PIMO	2-5	---	---	---	---	---
Utah juniper	JUOS	1-3	---	---	---	---	---
Site symbol		029X066N	029X029N	029X030N	029X006N	---	029X009N
Potential production (lb/acre):							
Favorable years		475	800	1,000	800	---	700
Normal years		375	600	700	500	---	500
Unfavorable years		200	400	500	300	---	200

623—Cucamungo-Rock outcrop-Tulecan complex, 30 to 50 percent slopes

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,200 to 9,100 feet
Climatic data (average annual):
Precipitation—about 13 inches
Air temperature—about 45 degrees F
Frost-free season—about 110 days

Composition

Cucamungo very stony sandy loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—35 percent
Rock outcrop—30 percent
Tulecan very stony sandy loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Thike very stony sandy loam, 30 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Aridic Haploxerolls, 30 to 75 percent slopes (Aridic Haploxerolls - loamy-skeletal, mixed, frigid, shallow)—5 percent
Inclusion 3: Argic Cryoborolls, 15 to 50 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—3 percent

Cucamungo Soil

Position on landscape: Upper part of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, bluegrass, green ephedra
Typical profile:
0 to 3 inches—very stony sandy loam; 25 to 55 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—poor—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Peaks, shoulders, and side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Tulecan Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush
Typical profile:
0 to 4 inches—very stony sandy loam; 40 to 50 percent cobbles and stones and 30 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 15 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam, very cobbly sandy clay loam; 10 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch

Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—south- and west-facing mountainsides; distinctive present vegetation—Wyoming big sagebrush, bluegrass
Inclusion 2: Position on landscape—mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion 3: Position on landscape—upper part of ridges; distinctive present vegetation—low sagebrush, bluegrass

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 190)

Woodland

(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush
(Tulecan Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, pine bluegrass, bottlebrush squirreltail, green ephedra, galleta

Elements of Wildlife Habitat

Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Tulecan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Cucamungo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Tulecan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Cucamungo soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Tulecan soil—VIIs, nonirrigated
Woodland suitability group: Cucamungo soil—2r; Tulecan soil—1r

TABLE 190.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cucamungo	Rock outcrop	Tulecan	1	2	3
Muttongrass	POFE	25-40	---	2-5	---	25-40	---
Bluegrass	POA++	10-20	---	10-20	---	10-20	3-5
Bottlebrush squirreltail	SIHY	5-10	---	5-15	1-4	5-10	---
Prairie junegrass	KOCR	5-10	---	---	---	5-10	---
Needlegrass	STIPA	2-5	---	5-15	5-10	2-5	5-10
Needleandthread	STCO4	---	---	2-5	---	---	---
Indian ricegrass	ORHY	---	---	2-5	5-10	---	---
Galleta	HIJA	---	---	---	5-15	---	---
Dropseed	SPORO	---	---	---	1-5	---	---
Western wheatgrass	AGSM	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-10	---	5-10	5-20	5-10	10-15
Native annual grasses	AAGG	---	---	---	1-5	---	2-4
Perennial forbs	PPFF	5-15	---	5-15	4-10	5-15	8-12
Native annual forbs	AAFF	1-3	---	1-3	2-7	1-3	3-7
Mountain big sagebrush	ARTRV	10-20	---	---	---	10-20	---
Bitterbrush	PURSH	5-15	---	5-10	---	5-15	---
Snowberry	SYMPH	2-5	---	---	---	2-5	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	1-3	---	2-5	---	1-3	---
Black sagebrush	ARARN	---	---	15-25	---	---	---
Green ephedra	EPVI	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	20-30	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---	---
Low sagebrush	ARAR8	---	---	---	---	---	20-30
Low rabbitbrush	CHVIH2	---	---	---	---	---	3-5
Horsebrush	TETRA3	---	---	---	---	---	2-5
Other shrubs	SSSS	5-15	---	5-10	10-20	5-15	15-20
Singleleaf pinyon	PIMO	2-5	---	5-10	---	2-5	---
Utah juniper	JUOS	1-3	---	5-10	---	1-3	---
Site symbol		029X066N	---	029X069N	029X010N	029X066N	029X053N
Potential production (lb/acre):							
Favorable years		475	---	350	600	475	700
Normal years		375	---	275	400	375	400
Unfavorable years		200	---	150	200	200	300

624—Cucamungo-Alcan-Thike association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,800 to 8,100 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 45 degrees F
Frost-free season—about 100 days

Composition

Cucamungo very stony sandy loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—50 percent
Alcan very gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Thike very cobbly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Argixerolls, 8 to 15 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Argic Cryoborolls, 8 to 30 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—4 percent

Cucamungo Soil

Position on landscape: Upper side slopes of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, bitterbrush
Typical profile:
0 to 3 inches—very stony sandy loam; 25 to 55 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Alcan Soil

Position on landscape: Lower part of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, desert bitterbrush
Typical profile:
0 to 2 inches—very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 13 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
13 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Thike Soil

Position on landscape: Lower side slopes of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, needlegrass, galleta
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 8 inches—very cobbly loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam; 25 to 55 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
8 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans adjacent to mountains; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Inclusion 2: Position on landscape—ridges and side slopes of mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—ridges; distinctive present vegetation—low sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 191)

Woodland

(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Alcan soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Thike soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Cucamungo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Alcan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Thike Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, slope
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—large stones, depth to rock, slope
Roadfill: Poor—large stones, slope, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 191.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Cucamungo	Alcan	Thike	1	2	3
Muttongrass	POFE	25-40	---	---	---	---	---
Bluegrass	POA++	10-20	2-5	---	10-20	---	3-5
Bottlebrush squirreltail	SIHY	5-10	---	1-4	1-5	---	---
Prairie junegrass	KOCR	5-10	---	---	5-10	---	---
Needlegrass	STIPA	2-5	5-20	5-10	5-10	---	5-10
Galleta	HIJA	---	15-20	5-15	---	---	---
Purple threeawn	ARPU9	---	5-10	---	---	---	---
Indian ricegrass	ORHY	---	2-5	5-10	1-5	---	---
Dropseed	SPORO	---	---	1-5	---	---	---
Western wheatgrass	AGSM	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-10	5-10	5-20	5-15	---	10-15
Native annual grasses	AAGG	---	---	1-5	1-3	---	2-4
Perennial forbs	PPFF	5-15	5-10	4-10	5-10	---	8-12
Native annual forbs	AAFF	1-3	1-2	2-7	1-5	---	3-7
Mountain big sagebrush	ARTRV	10-20	---	---	---	---	---
Bitterbrush	PURSH	5-15	5-10	---	5-10	---	---
Snowberry	SYMPH	2-5	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	1-5	---	---
Douglas rabbitbrush	CHVI8	1-3	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	15-20	20-30	10-20	---	---
Nevada ephedra	EPNE	---	5-10	5-10	---	---	---
Fourwing saltbush	ATCA2	---	2-5	---	---	---	---
Serviceberry	AMELA	---	---	---	1-5	---	---
Green ephedra	ERVI	---	---	---	2-5	---	---
Low sagebrush	ARAR8	---	---	---	---	---	20-30
Low rabbitbrush	CHVIH2	---	---	---	---	---	3-5
Horsebrush	TETRA3	---	---	---	---	---	2-5
Other shrubs	SSSS	5-15	10-15	10-20	10-20	---	15-20
Singleleaf pinyon	PIMO	2-5	---	---	2-5	---	---
Utah juniper	JUOS	1-3	---	---	1-4	---	---
Site symbol		029X066N	029X029N	029X010N	029X065N	---	029X053N
Potential production (lb/acre):							
Favorable years		475	800	600	425	---	700
Normal years		375	600	400	350	---	400
Unfavorable years		200	400	200	200	---	300

Interpretive Groups

Capability classification: Cucamungo soil—VIIs, nonirrigated; Alcan soil—VIIs, nonirrigated; Thike soil—VIIs, nonirrigated

Site symbol: Alcan soil—029X029N; Thike soil—029X010N

Woodland suitability group: Cucamungo soil—2r

630—Hiridge-Kiote-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 8,000 to 9,000 feet
Climatic data (average annual):
Precipitation—about 14 inches
Air temperature—about 44 degrees F
Frost-free season—about 80 days

Composition

Hiridge very gravelly sandy loam, 15 to 50 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—50 percent
Kiote very gravelly loam, 30 to 50 percent slopes (Argic Pachic Cryoborolls - loamy-skeletal, mixed)—25 percent
Rock outcrop—10 percent
Contrasting inclusions as follows—
Inclusion 1: Sylvaniam very gravelly loam, 30 to 50 percent slopes (Typic Calcixerolls - loamy-skeletal, carbonatic, frigid)—9 percent
Inclusion 2: Trailamp very gravelly loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—6 percent

Hiridge Soil

Position on landscape: Mountaintops
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—convex
Dominant present vegetation: Low sagebrush, green ephedra, phlox
Typical profile:
0 to 4 inches—very gravelly sandy loam; 10 to 15 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 17 inches—very gravelly clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2
17 to 25 inches—weathered bedrock
25 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Kiote Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave
Dominant present vegetation: Mountain big sagebrush, snowberry, lupine, bottlebrush squirreltail
Typical profile:
0 to 10 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 60 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SM-SC, GM, GM-GC; estimated AASHTO classification - A-1, A-2
10 to 21 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
21 to 35 inches—very gravelly loam, very gravelly clay loam; 5 to 20 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
35 to 60 inches or more—extremely gravelly loam, extremely gravelly sandy clay loam, extremely gravelly coarse sandy loam; 5 to 15 percent cobbles and stones and 75 to 85 percent pebbles (by weight); massive; slightly hard, friable; neutral (pH 7.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GC, GP-GM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow

Available water capacity: 6.0 to 7.5 inches
Water supplying capacity: 12 inches
Runoff: Rapid
Hydrologic group: B
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Peaks and ridges of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion 2: Position on landscape—lower part of mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 192)

Elements of Wildlife Habitat

Suitability of Hiridge soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kiote soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Shrubs (nonirrigated)—good

Ratings for Selected Uses

(Hiridge Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Kiote Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—small stones, erodes easily
Shallow excavations: Severe—slope
Local roads and streets: Severe—slope
Roadfill: Poor—slope
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Slight

Interpretive Groups

Capability classification: Hiridge soil—VIIs, nonirrigated; Kiote soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Hiridge soil—029X053N; Kiote soil—029X051N

TABLE 192.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Hiridge	Kiote	Rock outcrop	1	2
Western wheatgrass	AGSM	5-10	---	---	---	---
Needlegrass	STIPA	5-10	5-10	---	2-5	2-5
Bluegrass	POA++	3-5	3-8	---	10-20	10-20
Mountain brome	BRMA4	---	5-10	---	---	---
Slender wheatgrass	AGTR	---	3-8	---	---	---
Muttongrass	POFE	---	---	---	25-40	25-40
Bottlebrush squirreltail	SIHY	---	---	---	5-10	5-10
Prairie junegrass	KOCR	---	---	---	5-10	5-10
Other perennial grasses	PPGG	10-15	10-20	---	5-10	5-10
Native annual grasses	AAGG	2-4	2-5	---	---	---
Perennial forbs	PPFF	8-12	10-15	---	5-15	5-15
Native annual forbs	AAFF	3-7	3-5	---	1-3	1-3
Low sagebrush	ARAR8	20-30	---	---	---	---
Low rabbitbrush	CHVIH2	3-5	---	---	---	---
Horsebrush	TETRA3	2-5	---	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	---	10-20	10-20
Snowberry	SYMPH	---	5-10	---	2-5	2-5
Serviceberry	AMELA	---	3-5	---	---	---
Green ephedra	EPVI	---	1-3	---	---	---
Bitterbrush	PURSH	---	---	---	5-15	5-15
Curlleaf mountainmahogany	CELE3	---	---	---	2-5	2-5
Douglas rabbitbrush	CHVI8	---	---	---	1-3	1-3
Other shrubs	SSSS	15-20	5-10	---	5-15	5-15
Singleleaf pinyon	PIMO	---	---	---	2-5	2-5
Utah juniper	JUOS	---	---	---	1-3	1-3
Site symbol		029X053N	029X051N	---	029X066N	029X066N
Potential production (lb/acre):						
Favorable years		700	1,000	---	475	475
Normal years		400	700	---	375	375
Unfavorable years		300	400	---	200	200

631—Hiridge-Squawtip-Bellehelen association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,800 to 8,200 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 45 degrees F
Frost-free season—about 100 days

Composition

Hiridge very gravelly sandy loam, 15 to 50 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—55 percent
Squawtip very stony loam, 50 to 75 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—20 percent
Bellehelen very stony loam, 50 to 75 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—8 percent
Inclusion 2: Argic Pachic Cryoborolls, 30 to 75 percent slopes (Argic Pachic Cryoborolls - loamy-skeletal, mixed)—2 percent

Hiridge Soil

Position on landscape: Mountaintops
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—convex
Dominant present vegetation: Low sagebrush, Sandberg bluegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 10 to 15 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 17 inches—very gravelly clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2
17 to 25 inches—weathered bedrock
25 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Squawtip Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, bluegrass
Typical profile:
0 to 10 inches—very stony loam; 30 to 50 percent cobbles and stones and 15 to 30 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
10 to 24 inches—very cobbly loam, very gravelly sandy clay loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2
24 inches—weathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 11 inches
Runoff: Very rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—2; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Bellehelen Soil

Position on landscape: South- and west-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra
Typical profile:
0 to 3 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
3 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks and ridges of mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—concave mountainsides; distinctive present vegetation—mountain big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 193)

Woodland

(Squawtip Soil)
Site index for common trees: Singleleaf pinyon—75
Most important native understory plants: Mountain big sagebrush, bluegrass, needlegrass, bitterbrush, Indian ricegrass
(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Hiridge soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Squawtip soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Coniferous plants (nonirrigated)—good
Shrubs (nonirrigated)—good
Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Hiridge Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Squawtip Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—large stones
Shallow excavations: Severe—slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones
(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope

TABLE 193.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Hiridge	Squawtip	Bellehelen	1	2
Western wheatgrass	AGSM	5-10	---	---	---	---
Needlegrass	STIPA	5-10	2-5	5-15	---	5-10
Bluegrass	POA++	3-5	10-20	10-20	---	3-8
Muttongrass	POFE	---	25-40	2-5	---	---
Bottlebrush squirreltail	SIHY	---	5-10	5-15	---	---
Prairie junegrass	KOCR	---	5-10	---	---	---
Needleandthread	STCO4	---	---	2-5	---	---
Indian ricegrass	ORHY	---	---	2-5	---	---
Mountain brome	BRMA4	---	---	---	---	5-10
Slender wheatgrass	AGTR	---	---	---	---	3-8
Other perennial grasses	PPGG	10-15	5-10	5-10	---	10-20
Native annual grasses	AAGG	2-4	---	---	---	2-5
Perennial forbs	PPFF	8-12	5-15	5-15	---	10-15
Native annual forbs	AAFF	3-7	1-3	1-3	---	3-5
Low sagebrush	ARAR8	20-30	---	---	---	---
Low rabbitbrush	CHVIH2	3-5	---	---	---	---
Horsebrush	TETRA3	2-5	---	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	---	---	10-20
Bitterbrush	PURSH	---	5-15	5-10	---	---
Snowberry	SYMPH	---	2-5	---	---	5-10
Curlleaf mountainmahogany	CELE3	---	2-5	---	---	---
Douglas rabbitbrush	CHVI8	---	1-3	2-5	---	---
Black sagebrush	ARARN	---	---	15-25	---	---
Green ephedra	EPVI	---	---	2-5	---	1-3
Serviceberry	AMELA	---	---	---	---	3-5
Other shrubs	SSSS	15-20	5-15	5-10	---	5-10
Singleleaf pinyon	PIMO	---	2-5	5-10	---	---
Utah juniper	JUOS	---	1-3	5-10	---	---
Site symbol		029X053N	029X066N	029X069N	---	029X051N
Potential production (lb/acre):						
Favorable years		700	475	350	---	1,000
Normal years		400	375	275	---	700
Unfavorable years		300	200	150	---	400

Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Hiridge soil—VIIs, nonirrigated; Squawtip soil—VIIs, nonirrigated; Bellehelen soil—VIIs, nonirrigated

Site symbol: Hiridge soil—029X053N

Woodland suitability group: Squawtip soil—2r; Bellehelen soil—1r

632—Hiridge-Ravenswood Variant-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 8,000 to 9,200 feet
Climatic data (average annual):
Precipitation—about 16 inches
Air temperature—about 45 degrees F
Frost-free season—about 70 days

Composition

Hiridge very gravelly sandy loam, 8 to 15 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—40 percent
Ravenswood Variant stony loam, 4 to 15 percent slopes (Typic Argixerolls - fine-loamy, mixed, frigid)—35 percent
Rock outcrop—10 percent
Contrasting inclusions as follows—
Inclusion 1: Ravenswood very stony loam, 15 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—8 percent
Inclusion 2: Kiote very gravelly loam, 8 to 30 percent slopes (Argic Pachic Cryoborolls - loamy-skeletal, mixed)—4 percent
Inclusion 3: Bellehelen very stony loam, 8 to 30 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—3 percent

Hiridge Soil

Position on landscape: Mountaintops
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—convex
Dominant present vegetation: Low sagebrush, bluegrass
0 to 4 inches—very gravelly sandy loam; 10 to 15 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 17 inches—very gravelly clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2
17 to 25 inches—weathered bedrock
25 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Ravenswood Variant Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave
Dominant present vegetation: Mountainmahogany
Typical profile:
0 to 9 inches—stony loam; 15 to 40 percent cobbles and stones and 10 to 30 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
9 to 16 inches—very cobbly loam, cobbly loam; 15 to 40 percent cobbles and stones and 15 to 35 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, CL; estimated AASHTO classification - A-6
16 to 23 inches—cobbly clay loam; 15 to 30 percent cobbles and stones and 10 to 25 percent pebbles (by weight); subangular blocky structure; hard, firm; neutral (pH 6.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 1); estimated Unified classification - CL; estimated AASHTO classification - A-6, A-7
23 inches—weathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 12 inches
Runoff: Medium
Hydrologic group: C

Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks, ridges, and rimrock of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—tops and side slopes of mountains; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion 2: Position on landscape—mountaintops, colluvial pockets; distinctive present vegetation—mountain big sagebrush
Inclusion 3: Position on landscape—lower side slopes of mountains; distinctive present vegetation—singleleaf pinyon, black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 194)

Elements of Wildlife Habitat

Suitability of Hiridge soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ravenswood Variant soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Shrubs (nonirrigated)—good

Ratings for Selected Uses

(Hiridge Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope, frost action
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ravenswood Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—large stones
Shallow excavations: Moderate—depth to rock, slope, large stones
Local roads and streets: Moderate—shrink-swell, slope, frost action
Roadfill: Poor—depth to rock, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Hiridge soil—VIIs, nonirrigated; Ravenswood Variant soil—IVs, irrigated, and VIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Hiridge soil—029X053N; Ravenswood Variant soil—029X027N

TABLE 194.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Hiridge	Ravenswood Variant	Rock outcrop	1	2	3
Western wheatgrass	AGSM	5-10	---	---	---	---	---
Needlegrass	STIPA	5-10	5-10	---	2-5	5-10	5-15
Bluegrass	POA++	3-5	5-10	---	10-20	3-8	10-20
Bluebunch wheatgrass	AGSP	---	5-10	---	---	---	---
Bottlebrush squirreltail	SIHY	---	2-5	---	5-10	---	5-15
Indian ricegrass	ORHY	---	2-5	---	---	---	2-5
Basin wildrye	ELCI2	---	1-5	---	---	---	---
Muttongrass	POFE	---	---	---	25-40	---	2-5
Prairie junegrass	KOCR	---	---	---	5-10	---	---
Mountain brome	BRMA4	---	---	---	---	5-10	---
Slender wheatgrass	AGTR	---	---	---	---	3-8	---
Needleandthread	STCO4	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	1-5	---	5-10	10-20	5-10
Native annual grasses	AAGG	2-4	---	---	---	2-5	---
Arrowleaf balsamroot	BASA2	---	2-5	---	---	---	---
White stoneseed	LIRU4	---	1-2	---	---	---	---
Lupine	LUPIN	---	1-2	---	---	---	---
Phlox	PHLOX	---	1-2	---	---	---	---
Other perennial forbs	PPFF	8-12	2-10	---	5-15	10-15	5-15
Native annual forbs	AAFF	3-7	---	---	1-3	3-5	1-3
Low sagebrush	ARAR8	20-30	---	---	---	---	---
Low rabbitbrush	CHVIH2	3-5	---	---	---	---	---
Horsebrush	TETRA3	2-5	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	---	45-60	---	2-5	---	---
Mountain big sagebrush	ARTRV	---	1-5	---	10-20	10-20	---
Snowberry	SYMPH	---	1-5	---	2-5	5-10	---
Douglas rabbitbrush	CHVI8	---	1-3	---	1-3	---	2-5
Bitterbrush	PURSH	---	---	---	5-15	---	5-10
Serviceberry	AMELA	---	---	---	---	3-5	---
Green ephedra	EPVI	---	---	---	---	1-3	2-5
Black sagebrush	ARARN	---	---	---	---	---	15-25
Other shrubs	SSSS	15-20	5-10	---	5-15	5-10	5-10
Singleleaf pinyon	PIMO	---	T-2	---	2-5	---	5-10
Utah juniper	JUOS	---	T-2	---	1-3	---	5-10
Site symbol		029X053N	029X027N	---	029X066N	029X051N	029X069N
Potential production (lb/acre):							
Favorable years		700	1,600	---	475	1,000	350
Normal years		400	1,200	---	375	700	275
Unfavorable years		300	800	---	200	400	150

633—Hiridge-Ravenswood-Cucamungo association

Map Unit Setting

Position on landscape: Mountains
Elevation: 8,600 to 9,300 feet
Climatic data (average annual):
Precipitation—about 14 inches
Air temperature—about 44 degrees F
Frost-free season—about 100 days

Composition

Hiridge very gravelly sandy loam, 15 to 50 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—45 percent
Ravenswood very stony loam, 15 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—20 percent
Cucamungo very stony sandy loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Squawtip very stony loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—7 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Kiote very gravelly loam, 30 to 50 percent slopes (Argic Pachic Cryoborolls - loamy-skeletal, mixed)—3 percent

Hiridge Soil

Position on landscape: Mountaintops
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—convex
Dominant present vegetation: Low sagebrush, bluegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 10 to 15 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 17 inches—very gravelly clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2
17 to 25 inches—weathered bedrock
25 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Ravenswood Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, antelope bitterbrush, bluegrass
Typical profile:
0 to 8 inches—very stony loam; 15 to 25 percent cobbles and stones and 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML; estimated AASHTO classification - A-4
8 to 13 inches—very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
13 to 32 inches—very gravelly clay, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; hard, firm; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
32 inches—unweathered bedrock
Range in depth to bedrock: 30 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 5 to 6 inches
Water supplying capacity: 11 inches

Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—severe; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Cucamungo Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—porphyritic latite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, bluegrass, mountain big sagebrush, antelope bitterbrush
Typical profile:
0 to 3 inches—very stony sandy loam; 25 to 55 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush
Inclusion 2: Position on landscape—small peaks and ridges on mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—colluvial pockets on mountainsides; distinctive present vegetation—mountain big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 195)

Woodland

(Ravenswood Soil)
Site index for common trees: Singleleaf pinyon—50; Utah juniper—50
Most important native understory plants: Mountain big sagebrush, Sandberg bluegrass, Thurber needlegrass
(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Hiridge soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ravenswood soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Hiridge Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ravenswood Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, erodes easily

TABLE 195.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Hiridge	Ravenswood	Cucamungo	1	2	3
Western wheatgrass	AGSM	5-10	---	---	---	---	---
Needlegrass	STIPA	5-10	2-5	2-5	2-5	---	5-10
Bluegrass	POA++	3-5	10-20	10-20	10-20	---	3-8
Muttongrass	POFE	---	25-40	25-40	25-40	---	---
Bottlebrush squirreltail	SIHY	---	5-10	5-10	5-10	---	---
Prairie junegrass	KOCR	---	5-10	5-10	5-10	---	---
Mountain brome	BRMA4	---	---	---	---	---	5-10
Slender wheatgrass	AGTR	---	---	---	---	---	3-8
Other perennial grasses	PPGG	10-15	5-10	5-10	5-10	---	10-20
Native annual grasses	AAGG	2-4	---	---	---	---	2-5
Perennial forbs	PPFF	8-12	5-15	5-15	5-15	---	10-15
Native annual forbs	AAFF	3-7	1-3	1-3	1-3	---	3-5
Low sagebrush	ARAR8	20-30	---	---	---	---	---
Low rabbitbrush	CHVIH2	3-5	---	---	---	---	---
Horsebrush	TETRA3	2-5	---	---	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	10-20	10-20	---	10-20
Bitterbrush	PURSH	---	5-15	5-15	5-15	---	---
Snowberry	SYMPH	---	2-5	2-5	2-5	---	5-10
Curlleaf mountainmahogany	CELE3	---	2-5	2-5	2-5	---	---
Douglas rabbitbrush	CHVI8	---	1-3	1-3	1-3	---	---
Serviceberry	AMELA	---	---	---	---	---	3-5
Green ephedra	EPVI	---	---	---	---	---	1-3
Other shrubs	SSSS	15-20	5-15	5-15	5-15	---	5-10
Singleleaf pinyon	PIMO	---	2-5	2-5	2-5	---	---
Utah juniper	JUOS	---	1-3	1-3	1-3	---	---
Site symbol		029X053N	029X066N	029X066N	029X066N	---	029X051N
Potential production (lb/acre):							
Favorable years		700	475	475	475	---	1,000
Normal years		400	375	375	375	---	700
Unfavorable years		300	200	200	200	---	400

Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—large stones

(Cucamungo Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, large stones

Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Hiridge soil—VIIs, nonirrigated; Ravenswood soil—VIIs, nonirrigated; Cucamungo soil—VIIs, nonirrigated
Site symbol: Hiridge soil—029X053N
Woodland suitability group: Ravenswood soil—1r; Cucamungo soil—2r

640—Logring-Kyler-Ubehebe association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,500 to 7,800 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Logring very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—45 percent
Kyler extremely cobbly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—20 percent
Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Sylvaniam very cobbly loam, 30 to 75 percent slopes (Typic Calcixerolls - loamy-skeletal, carbonatic, frigid)—7 percent
Inclusion 2: Rock outcrop—3 percent
Inclusion 3: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Eaglepass extremely cobbly loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—2 percent

Logring Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, pine bluegrass
Typical profile:
0 to 7 inches—very cobbly fine sandy loam; 20 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
7 to 14 inches—extremely cobbly loam, very cobbly fine sandy loam, very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
14 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Kyler Soil

Position on landscape: Lower part of mountains
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta, pine bluegrass
Typical profile:
0 to 3 inches—extremely cobbly loam; 40 to 50 percent cobbles and stones and 60 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—very cobbly loam, very gravelly loam; 25 to 40 percent cobbles and stones and 35 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-2, A-4
9 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Ubehebe Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, pine bluegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion 2: Position on landscape—side slopes and ridges of mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, basin big sagebrush
Inclusion 4: Position on landscape—upper part of mountainsides; distinctive present vegetation—littleleaf mountainmahogany

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 196)

Woodland

(Logring Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, Nevada ephedra, bottlebrush squirreltail, desert bitterbrush, pine bluegrass, galleta
(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Logring soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kyler soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Logring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock, slope

TABLE 196.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Logring	Kyler	Ubehebe	1	2	3	4
Bluegrass	POA++	10-20	2-10	10-20	10-20	---	---	---
Bottlebrush squirreltail	SIHY	5-15	1-5	5-15	5-10	---	---	---
Needlegrass	STIPA	5-15	2-10	5-15	2-5	---	---	---
Muttongrass	POFE	2-5	---	2-5	25-40	---	---	---
Needleandthread	STCO4	2-5	---	2-5	---	---	---	---
Indian ricegrass	ORHY	2-5	5-10	2-5	---	---	2-5	2-5
Galleta	HIJA	---	5-15	---	---	---	1-3	---
Prairie junegrass	KOCR	---	---	---	5-10	---	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	10-15	5-10	5-10	---	5-10	1-3
Native annual grasses	AAGG	---	1-5	---	---	---	1-5	1-3
Perennial forbs	PPFF	5-15	5-10	5-15	5-15	---	5-10	1-4
Native annual forbs	AAFF	1-3	1-5	1-3	1-3	---	1-5	1-3
Black sagebrush	ARARN	15-25	15-20	15-25	---	---	---	1-10
Bitterbrush	PURSH	5-10	---	5-10	5-15	---	---	---
Green ephedra	EPVI	2-5	---	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	2-5	---	2-5	1-3	---	---	---
Nevada ephedra	EPNE	---	5-10	---	---	---	1-5	---
Bud sagebrush	ARSP5	---	2-5	---	---	---	---	---
Winterfat	EULA5	---	2-5	---	---	---	---	---
Mountain big sagebrush	ARTRV	---	---	---	10-20	---	---	---
Snowberry	SYMPH	---	---	---	2-5	---	---	---
Curlleaf mountainmahogany	CELE3	---	---	---	2-5	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5	---
Littleleaf mountainmahogany	CELEI2	---	---	---	---	---	---	50-75
Nevada greasebush	GLNE	---	---	---	---	---	---	10-20
Wyoming big sagebrush	ARTRW*	---	---	---	---	---	---	1-5
Other shrubs	SSSS	5-10	10-20	5-10	5-15	---	10-25	5-15
Singleleaf pinyon	PIMO	5-10	---	5-10	2-5	---	---	---
Utah juniper	JUOS	5-10	---	5-10	1-3	---	---	---
Site symbol		029X069N	029X014N	029X069N	029X066N	---	029X009N	029X040N
Potential production (lb/acre):								
Favorable years		350	500	350	475	---	700	350
Normal years		275	300	275	375	---	500	250
Unfavorable years		150	100	150	200	---	200	150

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones

(Kyler Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones

(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Logring soil—VIIs, nonirrigated; Kyler soil—VIIs, nonirrigated; Ubehebe soil—VIIs, nonirrigated
Site symbol: Kyler soil—029X014N
Woodland suitability group: Logring soil—1r; Ubehebe soil—1r

641—Logring-Brier-Armespan Variant association

Map Unit Setting

Position on landscape: Mountains and adjacent alluvial fans
Elevation: 6,300 to 7,200 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 49 degrees F
Frost-free season—about 100 days

Composition

Logring very gravelly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, calcareous, mesic)—50 percent
Brier very gravelly sandy loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—20 percent
Armespan Variant gravelly fine sandy loam, 4 to 15 percent slopes (Typic Durixerolls - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Armespan very gravelly fine sandy loam, 4 to 15 percent slopes (Durixerollic Calciorthids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Xeric Torriorthents very cobbly loamy sand, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—3 percent

Logring Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, bottlebrush squirreltail, galleta
Typical profile:
0 to 7 inches—very gravelly loam; 10 to 15 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
7 to 14 inches—extremely cobbly loam, very cobbly fine sandy loam, very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
14 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Brier Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 15 inches—very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches

Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Armespan Variant Soil

Position on landscape: Fan remnants adjacent to mountains
Parent material: Mixed alluvium
Slope features: Length—long; shape—plane to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 30 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2, A-4
3 to 16 inches—very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
16 to 28 inches—indurated
28 to 60 inches or more—stratified very cobbly sandy loam to very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GW, SM; estimated AASHTO classification - A-1
Range in depth to hardpan: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the indurated layer—moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants adjacent to mountains; distinctive present vegetation—invaded singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 2: Position on landscape—lower part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush, basin big sagebrush
Inclusion 3: Position on landscape—drainageways at lower elevations; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush
Inclusion 4: Position on landscape—lower part of drainageways; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 197)

Woodland

(Logring Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, Nevada ephedra, bottlebrush squirreltail, desert bitterbrush, pine bluegrass, galleta
(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass
(Armespan Variant Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Mountain big sagebrush, Nevada ephedra, black sagebrush, bottlebrush squirreltail, desert bitterbrush, Wyoming big sagebrush

Elements of Wildlife Habitat

Suitability of Logring soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Armespan Variant soil for named elements:
Wild herbaceous plants (nonirrigated)—fair

TABLE 197.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Logring	Brier	Armespan Variant	1	2	3	4
Bluegrass	POA++	10-20	10-20	10-20	---	10-20	10-20	---
Bottlebrush squirreltail	SIHY	5-15	1-5	5-10	---	5-15	1-5	1-5
Needlegrass	STIPA	5-15	5-10	2-5	5-15	5-15	5-10	5-15
Muttongrass	POFE	2-5	---	25-40	---	2-5	---	---
Needleandthread	STCO4	2-5	---	---	---	2-5	---	---
Indian ricegrass	ORHY	2-5	1-5	---	5-10	2-5	1-5	5-15
Prairie junegrass	KOCR	---	5-10	5-10	---	---	5-10	---
Galleta	HIJA	---	---	---	5-20	---	---	5-25
Dropseed	SPORO	---	---	---	---	---	---	5-15
Other perennial grasses	PPGG	5-10	5-15	5-10	10-15	5-10	5-15	5-20
Native annual grasses	AAGG	---	1-3	---	1-5	---	1-3	1-5
Perennial forbs	PPFF	5-15	5-10	5-15	3-8	5-15	5-10	3-10
Native annual forbs	AAFF	1-3	1-5	1-3	2-5	1-3	1-5	2-5
Black sagebrush	ARARN	15-25	---	---	20-25	15-25	---	---
Bitterbrush	PURSH	5-10	5-10	5-15	---	5-10	5-10	---
Green ephedra	EPVI	2-5	---	---	---	2-5	---	---
Douglas rabbitbrush	CHVI8	2-5	---	1-3	---	2-5	---	---
Wyoming big sagebrush	ARTRW*	---	10-20	---	---	---	10-20	15-20
Serviceberry	AMELA	---	1-5	---	---	---	1-5	---
Curlleaf mountainmahogany	CELE3	---	1-5	2-5	---	---	1-5	---
Green ephedra	ERVI	---	2-5	---	---	---	2-5	---
Mountain big sagebrush	ARTRV	---	---	10-20	---	---	---	---
Snowberry	SYMPH	---	---	2-5	---	---	---	---
Bud sagebrush	ARSP5	---	---	---	5-10	---	---	5-10
Winterfat	EULA5	---	---	---	2-5	---	---	2-10
Nevada ephedra	EPNE	---	---	---	2-5	---	---	---
Spiny hopsage	GRSP	---	---	---	---	---	---	5-10
Other shrubs	SSSS	5-10	10-20	5-15	10-20	5-10	10-20	10-20
Singleleaf pinyon	PIMO	5-10	2-5	2-5	---	5-10	2-5	---
Utah juniper	JUOS	5-10	1-4	1-3	---	5-10	1-4	---
Site symbol		029X069N	029X065N	029X066N	029X008N	029X069N	029X065N	029X049N
Potential production (lb/acre):								
Favorable years		350	425	475	700	350	425	900
Normal years		275	350	375	400	275	350	600
Unfavorable years		150	200	200	200	150	200	300

Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Logring Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage

(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones

(Armespan Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan, slope
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Logring soil—VIIs nonirrigated; Brier soil—VIIs, nonirrigated; Armespan Variant soil—VIIs, nonirrigated
Woodland suitability group: Logring soil—1r; Brier soil—1r; Armespan Variant soil—1r

650—Gabbvally-Stewval-Vindicator association

Map Unit Setting

Position on landscape: Mountains
Elevation: 5,900 to 6,500 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 51 degrees F
Frost-free season—about 130 days

Composition

Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Stewval very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Vindicator very gravelly sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Bellehelen very gravelly loam, 30 to 75 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Downeyville very gravelly sandy loam, 25 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Gabbvally Soil

Position on landscape: Mainly north-facing side slopes of mountains, near rock outcroppings
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Stewval Soil

Position on landscape: Ridges and shoulders of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 5 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Vindicator Soil

Position on landscape: Mainly north- and west-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny hopsage, galleta, Indian ricegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
2 to 7 inches—very gravelly clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—mainly north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 2: Position on landscape—alluvial fans adjacent to mountains; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—mainly south-facing mountainsides; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, Wyoming big sagebrush, rubber rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 198)

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Vindicator soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Vindicator Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope

TABLE 198.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Gabbvally	Stewval	Vindicator	1	2	3	4
Galleta	HIJA	5-15	5-15	5-15	---	5-15	5-20	1-3
Needlegrass	STIPA	5-10	2-10	2-5	5-15	2-10	5-10	---
Indian ricegrass	ORHY	5-10	5-10	5-10	2-5	5-10	5-15	2-5
Bottlebrush squirreltail	SIHY	1-4	1-5	1-3	5-15	1-5	2-5	---
Dropseed	SPORO	1-5	---	---	---	1-5	---	---
Bluegrass	POA++	---	2-10	---	10-20	---	---	---
Muttongrass	POFE	---	---	---	2-5	---	---	---
Basin wildrye	ELCI2	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	10-15	5-10	5-10	10-20	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	5-10	5-15	5-10	5-10	5-10
Native annual forbs	AAFF	2-7	1-5	2-5	1-3	2-5	2-5	1-5
Wyoming big sagebrush	ARTRW*	20-30	---	---	---	15-20	---	---
Nevada ephedra	EPNE	5-10	5-10	1-5	---	2-5	2-5	1-5
Black sagebrush	ARARN	---	15-20	---	15-25	---	---	---
Bud sagebrush	ARSP5	---	2-5	2-5	---	---	2-5	---
Winterfat	EULA5	---	2-5	---	---	2-5	---	---
Spiny hopsage	GRSP	---	---	5-15	---	2-5	---	---
Anderson wolfberry	LYAN	---	---	5-15	---	---	---	---
Nevada dalea	DAPO2	---	---	5-10	---	---	---	---
Fremont dalea	DAFR	---	---	5-10	---	---	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---	---
Bitterbrush	PURSH	---	---	---	5-10	---	---	---
Green ephedra	EPVI	---	---	---	2-5	---	---	---
Douglas rabbitbrush	CHVI8	---	---	---	2-5	---	---	---
Fourwing saltbush	ATCA2	---	---	---	---	5-10	---	---
Shadscale	ATCO	---	---	---	---	---	15-25	---
Bailey greasewood	SAVEB	---	---	---	---	---	5-15	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	5-10	10-25	10-20	10-25
Singleleaf pinyon	PIMO	---	---	---	5-10	---	---	---
Utah juniper	JUOS	---	---	---	5-10	---	---	---
Site symbol		O29XO10N	O29XO14N	O29XO21N	O29XO69N	O29XO06N	O29XO22N	O29XO09N
Potential production (lb/acre):								
Favorable years		600	500	300	350	800	300	700
Normal years		400	300	200	275	500	200	500
Unfavorable years		200	100	100	150	300	100	200

Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated; Vindicator soil—VIIs, nonirrigated
Site symbol: Gabbvally soil—029X010N; Stewval soil—029X014N; Vindicator soil—029X021N

651—Gabbvally-Bellehelen-Stewval association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,500 to 7,800 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 49 degrees F
Frost-free season—about 110 days

Composition

Gabbvally very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Bellehelen very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—30 percent
Stewval very gravelly fine sandy loam, 15 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wahguyhe very gravelly sandy loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—5 percent
Inclusion 2: Weepah very gravelly loam, 8 to 30 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—4 percent
Inclusion 3: Rock outcrop—3 percent
Inclusion 4: Xerollic Durargids, 4 to 15 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—3 percent

Gabbvally Soil

Position on landscape: Mainly north-facing side slopes and near rock outcroppings on mountains and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, ephedra, desert needlegrass
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—6
Hazard of erosion: By water—moderate; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Bellehelen Soil

Position on landscape: North-facing and upper side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra
Typical profile:
0 to 3 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
3 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Stewval Soil

Position on landscape: Lower ridges and shoulders of hills
Parent material: Kind—residuum; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, Nevada ephedra, desert needlegrass
Typical profile:
0 to 1 inch—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded hillsides and mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—eroded hillsides and mountainsides; distinctive present vegetation—black sagebrush, Nevada ephedra
Inclusion 3: Position on landscape—bare spots and ridge breaks on hills and mountains; distinctive present vegetation—barren
Inclusion 4: Position on landscape—fan piedmonts adjacent to hills; distinctive present vegetation—singleleaf pinyon, black sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 199)

Woodland

(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope

TABLE 199.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Gabbvally	Bellebelen	Stewval	1	2	3	4
Galleta	HIJA	5-15	---	5-15	5-15	5-15	---	---
Needlegrass	STIPA	5-10	5-15	2-10	5-10	2-10	---	5-15
Indian ricegrass	ORHY	5-10	2-5	5-10	5-10	5-10	---	2-5
Bottlebrush squirreltail	SIHY	1-4	5-15	1-5	1-4	1-5	---	5-15
Dropseed	SPORO	1-5	---	---	1-5	---	---	---
Bluegrass	POA++	---	10-20	2-10	---	2-10	---	10-20
Muttongrass	POFE	---	2-5	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	5-10	10-15	5-20	10-15	---	5-10
Native annual grasses	AAGG	1-5	---	1-5	1-5	1-5	---	---
Perennial forbs	PPFF	4-10	5-15	5-10	4-10	5-10	---	5-15
Native annual forbs	AAFF	2-7	1-3	1-5	2-7	1-5	---	1-3
Wyoming big sagebrush	ARTRW*	20-30	---	---	20-30	---	---	---
Nevada ephedra	EPNE	5-10	---	5-10	5-10	5-10	---	---
Black sagebrush	ARARN	---	15-25	15-20	---	15-20	---	15-25
Bitterbrush	PURSH	---	5-10	---	---	---	---	5-10
Green ephedra	EPVI	---	2-5	---	---	---	---	2-5
Douglas rabbitbrush	CHVI8	---	2-5	---	---	---	---	2-5
Bud sagebrush	ARSP5	---	---	2-5	---	2-5	---	---
Winterfat	EULA5	---	---	2-5	---	2-5	---	---
Other shrubs	SSSS	10-20	5-10	10-20	10-20	10-20	---	5-10
Singleleaf pinyon	PIMO	---	5-10	---	---	---	---	5-10
Utah juniper	JUOS	---	5-10	---	---	---	---	5-10
Site symbol		029X010N	029X069N	029X014N	029X010N	029X014N	---	029X069N
Potential production (lb/acre):								
Favorable years		600	350	500	600	500	---	350
Normal years		400	275	300	400	300	---	275
Unfavorable years		200	150	100	200	100	---	150

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Bellehelen soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated

Site symbol: Gabbvally soil—029X010N; Stewval soil—029X014N

Woodland suitability group: Bellehelen soil—1r

652—Gabbvally-Wahguyhe-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,500 to 7,800 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—45 percent
Wahguyhe very gravelly sandy loam, 50 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very stony fine sandy loam, 15 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Downeyville very gravelly sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xeric Torriorthents, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Gabbvally Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra, desert needlegrass
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Wahguyhe Soil

Position on landscape: Eroded hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush
Typical profile:
0 to 8 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Rock Outcrop

Position on landscape: Peaks, ridges, and side slopes of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountains; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—lower part of hillsides; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—rubber rabbitbrush
Inclusion of minor extent: Position on landscape—mountains; distinctive present vegetation—singleleaf pinyon, black sagebrush
Inclusion of minor extent: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, spiny hopsage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 200)

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Gabbvally soil—029X010N; Wahguyhe soil—029X010N

TABLE 200.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gabbvally	Wahguyhe	Rock outcrop	1	2	3
Galleta	HIJA	5-15	5-15	---	5-15	5-20	1-3
Needlegrass	STIPA	5-10	5-10	---	2-10	5-10	---
Indian ricegrass	ORHY	5-10	5-10	---	5-10	5-15	2-5
Bottlebrush squirreltail	SIHY	1-4	1-4	---	1-5	2-5	---
Dropseed	SPORO	1-5	1-5	---	---	---	---
Bluegrass	POA++	---	---	---	2-10	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	5-20	---	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	4-10	---	5-10	5-10	5-10
Native annual forbs	AAFF	2-7	2-7	---	1-5	2-5	1-5
Wyoming big sagebrush	ARTRW*	20-30	20-30	---	---	---	---
Nevada ephedra	EPNE	5-10	5-10	---	5-10	2-5	1-5
Black sagebrush	ARARN	---	---	---	15-20	---	---
Bud sagebrush	ARSP5	---	---	---	2-5	2-5	---
Winterfat	EULA5	---	---	---	2-5	---	---
Shadscale	ATCO	---	---	---	---	15-25	---
Bailey greasewood	SAVEB	---	---	---	---	5-15	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	---	10-20	10-20	10-25
Site symbol		029X010N	029X010N	---	029X014N	029X022N	029X009N
Potential production (lb/acre):							
Favorable years		600	600	---	500	300	700
Normal years		400	400	---	300	200	500
Unfavorable years		200	200	---	100	100	200

653—Gabbvally-Brier-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,500 to 7,500 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 130 days

Composition

Gabbvally very stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Brier very cobbly loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—35 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very stony fine sandy loam, 30 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 2: Xeric Torriorthents, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Espint very cobbly fine sandy loam, 15 to 50 (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—2 percent

Gabbvally Soil

Position on landscape: Lower part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Brier Soil

Position on landscape: Upper part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Typical profile:
0 to 3 inches—very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate

Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Hills, mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of hillsides and mountainsides; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—tops of hills; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 201)

Woodland

(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—thin layer, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones, thin layer

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Brier soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Gabbvally soil—029X010N
Woodland suitability group: Brier soil—1r

TABLE 201.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gabbvally	Brier	Rock outcrop	1	2	3
Galleta	HIJA	5-15	---	---	5-15	1-3	5-15
Needlegrass	STIPA	5-10	5-10	---	2-10	---	5-10
Indian ricegrass	ORHY	5-10	1-5	---	5-10	2-5	5-10
Bottlebrush squirreltail	SIHY	1-4	1-5	---	1-5	---	1-4
Dropseed	SPORO	1-5	---	---	---	---	1-5
Bluegrass	POA++	---	10-20	---	2-10	---	---
Prairie junegrass	KOCR	---	5-10	---	---	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-20	5-15	---	10-15	5-10	5-20
Native annual grasses	AAGG	1-5	1-3	---	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	---	5-10	5-10	4-10
Native annual forbs	AAFF	2-7	1-5	---	1-5	1-5	2-7
Wyoming big sagebrush	ARTRW*	20-30	10-20	---	---	---	20-30
Nevada ephedra	EPNE	5-10	---	---	5-10	1-5	5-10
Bitterbrush	PURSH	---	5-10	---	---	---	---
Serviceberry	AMELA	---	1-5	---	---	---	---
Curlleaf mountainmahogany	CELE3	---	1-5	---	---	---	---
Green ephedra	ERVI	---	2-5	---	---	---	---
Black sagebrush	ARARN	---	---	---	15-20	---	---
Bud sagebrush	ARSP5	---	---	---	2-5	---	---
Winterfat	EULA5	---	---	---	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	---
Other shrubs	SSSS	10-20	10-20	---	10-20	10-25	10-20
Singleleaf pinyon	PIMO	---	2-5	---	---	---	---
Utah juniper	JUOS	---	1-4	---	---	---	---
Site symbol		029X010N	029X065N	---	029X014N	029X009N	029X010N
Potential production (lb/acre):							
Favorable years		600	425	---	500	700	600
Normal years		400	350	---	300	500	400
Unfavorable years		200	200	---	100	200	200

654—Gabbvally-Malmesa-Espint association

Map Unit Setting

Position on landscape: Hills
Elevation: 5,800 to 6,500 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 50 degrees F
Frost-free season—about 130 days

Composition

Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Malmesa very cobbly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Espint very cobbly fine sandy loam, 8 to 30 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—10 percent
Contrasting inclusions as follows—
Inclusion 1: Silverbow very cobbly sandy loam, 4 to 30 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—6 percent
Inclusion 2: Stewval very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Rock outcrop—4 percent

Gabbvally Soil

Position on landscape: Side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Malmesa Soil

Position on landscape: Summits and shoulders of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, spiny menodora, galleta
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Espint Soil

Position on landscape: Summits and shoulders of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 1 inch—very cobbly fine sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
1 to 7 inches—very gravelly clay, sandy clay, gravelly clay loam; 0 to 10 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL, CH, SC, GC; estimated AASHTO classification - A-7
7 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—tops and shoulders of lower hills; distinctive present vegetation—spiny menodora, shadscale, bud sagebrush
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—black sagebrush
Inclusion 3: Position on landscape—small peaks and ridges of hills; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 202)

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Espint soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones
(Espint Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 202.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gabbvally	Malmesa	Espint	1	2	3
Galleta	HIJA	5-15	5-15	5-15	5-10	5-15	---
Needlegrass	STIPA	5-10	5-10	5-10	---	2-10	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	5-10	---
Bottlebrush squirreltail	SIHY	1-4	1-4	1-4	---	1-5	---
Dropseed	SPORO	1-5	1-5	1-5	---	---	---
Bluegrass	POA++	---	---	---	---	2-10	---
Other perennial grasses	PPGG	5-20	5-20	5-20	5-10	10-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	4-10	4-10	4-10	5-10	5-10	---
Native annual forbs	AAFF	2-7	2-7	2-7	2-5	1-5	---
Wyoming big sagebrush	ARTRW*	20-30	20-30	20-30	---	---	---
Nevada ephedra	EPNE	5-10	5-10	5-10	5-10	5-10	---
Spiny menodora	MESP2	---	---	---	10-30	---	---
Bailey greasewood	SAVEB	---	---	---	5-15	---	---
Shadscale	ATCO	---	---	---	5-15	---	---
Bud sagebrush	ARSP5	---	---	---	5-10	2-5	---
Black sagebrush	ARARN	---	---	---	---	15-20	---
Winterfat	EULA5	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	---
Site symbol		029X010N	029X010N	029X010N	029X036N	029X014N	---
Potential production (lb/acre):							
Favorable years		600	600	600	400	500	---
Normal years		400	400	400	300	300	---
Unfavorable years		200	200	200	100	100	---

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Malmesa soil—VIIs, nonirrigated; Espint soil—VIIs, nonirrigated

Site symbol: Gabbvally soil—029X010N; Malmesa soil—029X010N; Espint soil—029X010N

655—Gabbvally-Brier-Wahguyhe association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,800 to 8,000 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 50 degrees F
Frost-free season—about 100 days

Composition

Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Brier very cobbly loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—30 percent
Wahguyhe very stony sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—8 percent
Inclusion 2: Stewval very stony sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Aridic Haploxerolls, 4 to 15 percent slopes (Aridic Haploxerolls - loamy-skeletal, mixed, mesic)—2 percent

Gabbvally Soil

Position on landscape: Hills, lower stable side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, ephedra, needleandthread, bottlebrush squirreltail
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Brier Soil

Position on landscape: Higher and north-facing slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, ephedra
Typical profile:
0 to 3 inches—very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight

Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Wahguyhe Soil

Position on landscape: Lower, eroded side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, needleandthread, rabbitbrush
Typical profile:
0 to 4 inches—very stony sandy loam; 25 to 30 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—shoulders of hills and mountains; distinctive present vegetation—black sagebrush, ephedra
Inclusion 3: Position on landscape—inset fans adjacent to hills; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush, needleandthread

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 203)

Woodland

(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines

TABLE 203.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gabbvally	Brier	Wahguyhe	1	2	3
Galleta	HIJA	5-15	---	5-15	---	5-15	---
Needlegrass	STIPA	5-10	5-10	5-10	---	2-10	5-10
Indian ricegrass	ORHY	5-10	1-5	5-10	---	5-10	1-5
Bottlebrush squirreltail	SIHY	1-4	1-5	1-4	---	1-5	1-5
Dropseed	SPORO	1-5	---	1-5	---	---	---
Bluegrass	POA++	---	10-20	---	---	2-10	10-20
Prairie junegrass	KOCR	---	5-10	---	---	---	5-10
Other perennial grasses	PPGG	5-20	5-15	5-20	---	10-15	5-15
Native annual grasses	AAGG	1-5	1-3	1-5	---	1-5	1-3
Perennial forbs	PPFF	4-10	5-10	4-10	---	5-10	5-10
Native annual forbs	AAFF	2-7	1-5	2-7	---	1-5	1-5
Wyoming big sagebrush	ARTRW*	20-30	10-20	20-30	---	---	10-20
Nevada ephedra	EPNE	5-10	---	5-10	---	5-10	---
Bitterbrush	PURSH	---	5-10	---	---	---	5-10
Serviceberry	AMELA	---	1-5	---	---	---	1-5
Curlleaf mountainmahogany	CELE3	---	1-5	---	---	---	1-5
Green ephedra	ERVI	---	2-5	---	---	---	2-5
Black sagebrush	ARARN	---	---	---	---	15-20	---
Bud sagebrush	ARSP5	---	---	---	---	2-5	---
Winterfat	EULA5	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20	10-20
Singleleaf pinyon	PIMO	---	2-5	---	---	---	2-5
Utah juniper	JUOS	---	1-4	---	---	---	1-4
Site symbol		029X010N	029X065N	029X010N	---	029X014N	029X065N
Potential production (lb/acre):							
Favorable years		600	425	600	---	500	425
Normal years		400	350	400	---	300	350
Unfavorable years		200	200	200	---	100	200

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Brier soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated
Site symbol: Gabbvally soil—029X010N; Wahguyhe soil—029X010N
Woodland suitability group: Brier soil—1r

656—Gabbvally-Beelem-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,500 to 7,500 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Gabbvally very stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—50 percent
Beelem very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy, mixed, (calcareous), mesic)—25 percent
Rock outcrop—10 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Haplargids very gravelly fine sandy loam, 30 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Lithic Torripsamments, 30 to 75 percent slopes (Lithic Torripsamments - mixed, mesic)—6 percent
Inclusion 3: Xeric Torriorthents, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Gabbvally Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Beelem Soil

Position on landscape: Eroded side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, ephedra
Typical profile:
0 to 1 inch—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
1 to 3 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
3 inches—unweathered bedrock
Range in depth to bedrock: 3 to 9 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.3 to 0.8 inch
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks and ridges on hills and mountains
Parent material: Eroded tuff
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—south-facing hillsides and mountainsides; distinctive present vegetation—spiny menodora, galleta
Inclusion 2: Position on landscape—hills, mountains; distinctive present vegetation—Wyoming big sagebrush, dalea, spiny hopsage
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 204)

Woodland

(Beelem Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Indian ricegrass, bottlebrush squirreltail, black sagebrush, Wyoming big sagebrush, Nevada ephedra, green ephedra

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Beelem soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Fair—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Beelem Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Beelem soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Gabbvally soil—029X010N
Woodland suitability group: Beelem soil—1r

TABLE 204.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gabbvally	Beelem	Rock outcrop	1	2	3
Galleta	HIJA	5-15	---	---	10-20	5-15	1-3
Needlegrass	STIPA	5-10	---	---	5-10	5-10	---
Indian ricegrass	ORHY	5-10	2-5	---	2-5	5-10	2-5
Bottlebrush squirreltail	SIHY	1-4	2-5	---	---	1-4	---
Dropseed	SPORO	1-5	---	---	---	1-5	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	2-10	---	5-10	5-20	5-10
Native annual grasses	AAGG	1-5	---	---	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	2-5	---	5-10	4-10	5-10
Native annual forbs	AAFF	2-7	---	---	2-5	2-7	1-5
Wyoming big sagebrush	ARTRW*	20-30	10-25	---	---	20-30	---
Nevada ephedra	EPNE	5-10	5-15	---	5-10	5-10	1-5
Black sagebrush	ARARN	---	20-35	---	---	---	---
Green ephedra	EPVI	---	5-10	---	---	---	---
Bud sagebrush	ARSP5	---	---	---	2-5	---	---
Spiny menodora	MESP2	---	---	---	10-25	---	---
Bailey greasewood	SAVEB	---	---	---	5-10	---	---
Anderson wolfberry	LYAN	---	---	---	5-10	---	---
Shadscale	ATCO	---	---	---	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	5-15	---	15-25	10-20	10-25
Utah juniper	JUOS	---	2-5	---	---	---	---
Singleleaf pinyon	PIMO	---	2-5	---	---	---	---
Site symbol		029X010N	029X081N	---	029X037N	029X010N	029X009N
Potential production (lb/acre):							
Favorable years		600	125	---	300	600	700
Normal years		400	75	---	200	400	500
Unfavorable years		200	25	---	100	200	200

658—Gabbvally-Downeyville-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,000 to 6,500 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 110 days

Composition

Gabbvally very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Downeyville very gravelly fine sandy loam, moist, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Rock outcrop—10 percent
Contrasting inclusions as follows—
Inclusion 1: Lithic Xeric Torriorthents very gravelly loamy sand, 15 to 30 percent slopes (Lithic Xeric Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Lithic Haplargids very cobbly loamy sand, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xeric Torriorthents very stony loamy sand, 2 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Gabbvally Soil

Position on landscape: North-facing side slopes and upper part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—6
Hazard of erosion: By water—moderate; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Downeyville Soil

Position on landscape: Lower part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Peaks, shoulders, and upper side slopes of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides, mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—south-facing hillsides and mountainsides; distinctive present vegetation—Morman needlegrass
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 205)

Elements of Wildlife Habitat

Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Gabbvally soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Gabbvally soil—029X010N; Downeyville soil—029X037N

TABLE 205.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Gabbvally	Downeyville	Rock outcrop	1	2	3
Galleta	HIJA	5-15	10-20	---	5-15	---	1-3
Needlegrass	STIPA	5-10	5-10	---	5-10	20-30	---
Indian ricegrass	ORHY	5-10	2-5	---	5-10	5-10	2-5
Bottlebrush squirreltail	SIHY	1-4	---	---	1-4	2-5	---
Dropseed	SPORO	1-5	---	---	1-5	---	---
Bluegrass	POA++	---	---	---	---	2-5	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	5-10	---	5-20	2-5	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	---	1-5
Perennial forbs	PPFF	4-10	5-10	---	4-10	5-10	5-10
Native annual forbs	AAFF	2-7	2-5	---	2-7	---	1-5
Wyoming big sagebrush	ARTRW*	20-30	---	---	20-30	---	---
Nevada ephedra	EPNE	5-10	5-10	---	5-10	---	1-5
Bud sagebrush	ARSP5	---	2-5	---	---	---	---
Spiny menodora	MESP2	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	---	---	---	---
Anderson wolfberry	LYAN	---	5-10	---	---	---	---
Shadscale	ATCO	---	2-5	---	---	5-15	---
Littleleaf horsebrush	TEGL	---	---	---	---	10-20	1-5
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	15-25	---	10-20	5-15	10-25
Site symbol		029X010N	029X037N	---	029X010N	027X017N	029X009N
Potential production (lb/acre):							
Favorable years		600	300	---	600	400	700
Normal years		400	200	---	400	200	500
Unfavorable years		200	100	---	200	100	200

660—Bellehelen-Brier-Stewval association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,200 to 7,800 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 49 degrees F
Frost-free season—about 110 days

Composition

Bellehelen very stony loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—35 percent
Brier very stony loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—30 percent
Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Gabbvally very stony loam, 15 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Argic Lithic Cryoborolls, 8 to 30 percent slopes (Argic Lithic Cryoborolls - loamy-skeletal, mixed)—3 percent
Inclusion 3: Veet very stony loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Rock outcrop—3 percent

Bellehelen Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, Sandberg bluegrass
Typical profile:
0 to 5 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
5 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Brier Soil

Position on landscape: North-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Wyoming big sagebrush, Sandberg bluegrass
Typical profile:
0 to 3 inches—very stony loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7

Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Stewval Soil

Position on landscape: South-facing mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta, Sandberg bluegrass
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—Wyoming big sagebrush, Sandberg bluegrass, galleta
Inclusion 2: Position on landscape—north-facing upper part of mountainsides; distinctive present vegetation—low sagebrush, Sandberg bluegrass
Inclusion 3: Position on landscape—mountain-valley fans; distinctive present vegetation—Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Position on landscape—side slopes of mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 206)

Woodland

(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass
(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—good
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope

TABLE 206.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Bellehelen	Brier	Stewval	1	2	3	4
Bluegrass	POA++	10-20	10-20	2-10	---	3-5	---	---
Bottlebrush squirreltail	SIHY	5-15	1-5	1-5	1-4	---	1-5	---
Needlegrass	STIPA	5-15	5-10	2-10	5-10	5-10	5-15	---
Muttongrass	POFE	2-5	---	---	---	---	---	---
Indian ricegrass	ORHY	2-5	1-5	5-10	5-10	---	5-15	---
Prairie junegrass	KOCR	---	5-10	---	---	---	---	---
Galleta	HIJA	---	---	5-15	5-15	---	5-25	---
Dropseed	SPORO	---	---	---	1-5	---	5-15	---
Western wheatgrass	AGSM	---	---	---	---	5-10	---	---
Other perennial grasses	PPGG	5-10	5-15	10-15	5-20	10-15	5-20	---
Native annual grasses	AAGG	---	1-3	1-5	1-5	2-4	1-5	---
Perennial forbs	PPFF	5-15	5-10	5-10	4-10	8-12	3-10	---
Native annual forbs	AAFF	1-3	1-5	1-5	2-7	3-7	2-5	---
Black sagebrush	ARARN	15-25	---	15-20	---	---	---	---
Bitterbrush	PURSH	5-10	5-10	---	---	---	---	---
Green ephedra	EPVI	2-5	---	---	---	---	---	---
Douglas rabbitbrush	CHVI8	2-5	---	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	10-20	---	20-30	---	15-20	---
Serviceberry	AMELA	---	1-5	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	---	1-5	---	---	---	---	---
Green ephedra	ERVI	---	2-5	---	---	---	---	---
Nevada ephedra	EPNE	---	---	5-10	5-10	---	---	---
Bud sagebrush	ARSP5	---	---	2-5	---	---	5-10	---
Winterfat	EULA5	---	---	2-5	---	---	2-10	---
Low sagebrush	ARAR8	---	---	---	---	20-30	---	---
Low rabbitbrush	CHVIH2	---	---	---	---	3-5	---	---
Horsebrush	TETRA3	---	---	---	---	2-5	---	---
Spiny hopsage	GRSP	---	---	---	---	---	5-10	---
Other shrubs	SSSS	5-10	10-20	10-20	10-20	15-20	10-20	---
Singleleaf pinyon	PIMO	5-10	2-5	---	---	---	---	---
Utah juniper	JUOS	5-10	1-4	---	---	---	---	---
Site symbol		029X069N	029X065N	029X014N	029X010N	029X053N	029X049N	---
Potential production (lb/acre):								
Favorable years		350	425	500	600	700	900	---
Normal years		275	350	300	400	400	600	---
Unfavorable years		150	200	100	200	300	300	---

Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Bellehelen soil—VIIs, nonirrigated; Brier soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated
Site symbol: Stewval soil—029X014N
Woodland suitability group: Bellehelen soil—1r; Brier soil—1r

661—Bellehelen-Stewval association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,600 to 7,000 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 50 degrees F
Frost-free season—about 110 days

Composition

Bellehelen very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—60 percent
Stewval very stony fine sandy loam, 8 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Wahguyhe very cobbly sandy loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—8 percent
Inclusion 2: Rock outcrop—7 percent

Bellehelen Soil

Position on landscape: Higher, mainly north-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra
Typical profile:
0 to 3 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
3 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Stewval Soil

Position on landscape: Lower, mainly south-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, Nevada ephedra, green ephedra, desert needlegrass
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—lower eroded side slopes of hills and mountains; distinctive present vegetation—Wyoming big sagebrush, green ephedra, rabbitbrush

Inclusion 2: Position on landscape—small peaks and ridges on side slopes of hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 207)

Woodland

(Bellehelen Soil)

Site index for common trees: Singleleaf pinyon—35; Utah juniper—35

Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Bellehelen Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Stewval Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Bellehelen soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated

Site symbol: Stewval soil—029X014N

Woodland suitability group: Bellehelen soil—1r

TABLE 207.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Bellehelen	Stewval	1	2
Needlegrass	STIPA	5-15	2-10	5-10	---
Indian ricegrass	ORPHY	2-15	5-10	5-10	---
Bottlebrush squirreltail	SIHY	5-15	1-5	1-4	---
Bluegrass	POA++	10-20	2-10	---	---
Muttongrass	POFE	2-5	---	---	---
Needleandthread	STCO4	2-5	---	---	---
Galleta	HIJA	---	5-15	5-15	---
Dropseed	SPORO	---	---	1-5	---
Other perennial grasses	PPGG	5-10	10-15	5-20	---
Native annual grasses	AAGG	---	1-5	1-5	---
Perennial forbs	PPFF	5-15	5-10	4-10	---
Native annual forbs	AAFF	1-3	1-5	2-7	---
Black sagebrush	ARARN	15-25	15-20	---	---
Bitterbrush	PURSH	5-10	---	---	---
Green ephedra	EPVI	2-5	---	---	---
Douglas rabbitbrush	CHVI8	2-5	---	---	---
Nevada ephedra	EPNE	---	5-10	5-10	---
Bud sagebrush	ARSP5	---	2-5	---	---
Winterfat	EULA5	---	2-5	---	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---
Other shrubs	SSSS	5-10	10-20	10-20	---
Singleleaf pinyon	PIMO	5-10	---	---	---
Utah juniper	JUOS	5-10	---	---	---
Site symbol		029X069N	029X014N	029X010N	---
Potential production (lb/acre):					
Favorable years		350	500	600	---
Normal years		275	300	400	---
Unfavorable years		150	100	200	---

680—Malmesa-Stewval-Gabbvally association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 6,300 to 6,800 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Malmesa very cobbly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—55 percent
Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Gabbvally very stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very gravelly sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Typic Torriorthents, 15 to 75 percent slopes (Typic Torriorthents)—5 percent
Inclusion 3: Rock outcrop—3 percent
Inclusion 4: Veet very gravelly sandy loam, 4 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—2 percent

Malmesa Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Stewval Soil

Position on landscape: Side slopes of mesas and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderate
Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-1
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—south-facing side slopes of mesas and hills; distinctive present vegetation—shadscale, galleta, bud sagebrush
Inclusion 2: Position on landscape—side slopes of mesas and hills; distinctive present vegetation—galleta, Indian ricegrass, spiny hopsage
Inclusion 3: Position on landscape—rimrock and small peaks and ridges on mesas and hills; distinctive present vegetation—barren
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, spiny hopsage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 208)

Elements of Wildlife Habitat

Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—cemented pan, depth to rock
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones
(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Gabbvally Soil)
Suitability and limitations for the following uses:

TABLE 208.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Malmesa	Stewval	Gabbvally	1	2	3	4
Galleta	HIJA	5-15	5-15	5-15	5-20	5-15	---	5-25
Needlegrass	STIPA	5-10	2-10	5-10	5-10	2-5	---	5-15
Indian ricegrass	ORHY	5-10	5-10	5-10	5-15	5-10	---	5-15
Bottlebrush squirreltail	SIHY	1-4	1-5	1-4	2-5	1-3	---	1-5
Dropseed	SPORO	1-5	---	1-5	---	---	---	5-15
Bluegrass	POA++	---	2-10	---	---	---	---	---
Other perennial grasses	PPGG	5-20	10-15	5-20	5-10	5-10	---	5-20
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	---	1-5
Perennial forbs	PPFF	4-10	5-10	4-10	5-10	5-10	---	3-10
Native annual forbs	AAFF	2-7	1-5	2-7	2-5	2-5	---	2-5
Wyoming big sagebrush	ARTRW*	20-30	---	20-30	---	---	---	15-20
Nevada ephedra	EPNE	5-10	5-10	5-10	2-5	1-5	---	---
Black sagebrush	ARARN	---	15-20	---	---	---	---	---
Bud sagebrush	ARSP5	---	2-5	---	2-5	2-5	---	5-10
Winterfat	EULA5	---	2-5	---	---	---	---	2-10
Shadscale	ATCO	---	---	---	15-25	---	---	---
Bailey greasewood	SAVEB	---	---	---	5-15	---	---	---
Spiny hopsage	GRSP	---	---	---	---	5-15	---	5-10
Anderson wolfberry	LYAN	---	---	---	---	5-15	---	---
Nevada dalea	DAPO2	---	---	---	---	5-10	---	---
Fremont dalea	DAFR	---	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	---	10-20
Site symbol		029X010N	029X014N	029X010N	029X022N	029X021N	---	029X049N
Potential production (lb/acre):								
Favorable years		600	500	600	300	300	---	900
Normal years		400	300	400	200	200	---	600
Unfavorable years		200	100	200	100	100	---	300

Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Malmesa soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated
Site symbol: Malmesa soil—029X010N; Stewval soil—029X014N; Gabbvally soil—029X010N

681—Malmesa-Wahguyhe-Bellehelen association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 6,800 to 7,600 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 50 degrees F
Frost-free season—about 130 days

Composition

Malmesa very cobbly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—45 percent
Wahguyhe very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—25 percent
Bellehelen very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Gabbvally very gravelly fine sandy loam, 4 to 15 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Wahguyhe very cobbly sandy loam, 50 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—3 percent

Malmesa Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, galleta, desert needlegrass
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to hardpan: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Wahguyhe Soil

Position on landscape: Side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, desert needlegrass
Typical profile:
0 to 8 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid

Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Bellehelen Soil

Position on landscape: Higher, mainly north-facing side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra
Typical profile:
0 to 3 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
3 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—tops of mesas; distinctive present vegetation—Wyoming big sagebrush, ephedra, desert needlegrass, galleta
Inclusion 2: Position on landscape—mesas, hillsides; distinctive present vegetation—barren
Inclusion 3: Position on landscape—hillsides; distinctive present vegetation—Wyoming big sagebrush, desert needlegrass, ephedra

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 209)

Woodland

(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope

TABLE 209.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Malmesa	Wahguyhe	Bellehelen	1	2	3
Galleta	HIJA	5-15	5-15	---	5-15	---	5-15
Needlegrass	STIPA	5-10	5-10	5-15	5-10	---	5-10
Indian ricegrass	ORHY	5-10	5-10	2-5	5-10	---	5-10
Bottlebrush squirreltail	SIHY	1-4	1-4	5-15	1-4	---	1-4
Dropseed	SPORO	1-5	1-5	---	1-5	---	1-5
Bluegrass	POA++	---	---	10-20	---	---	---
Muttongrass	POFE	---	---	2-5	---	---	---
Needleandthread	STCO4	---	---	2-5	---	---	---
Other perennial grasses	PPGG	5-20	5-20	5-10	5-20	---	5-20
Native annual grasses	AAGG	1-5	1-5	---	1-5	---	1-5
Perennial forbs	PPFF	4-10	4-10	5-15	4-10	---	4-10
Native annual forbs	AAFF	2-7	2-7	1-3	2-7	---	2-7
Wyoming big sagebrush	ARTRW*	20-30	20-30	---	20-30	---	20-30
Nevada ephedra	EPNE	5-10	5-10	---	5-10	---	5-10
Black sagebrush	ARARN	---	---	15-25	---	---	---
Bitterbrush	PURSH	---	---	5-10	---	---	---
Green ephedra	EPVI	---	---	2-5	---	---	---
Douglas rabbitbrush	CHV18	---	---	2-5	---	---	---
Other shrubs	SSSS	10-20	10-20	5-10	10-20	---	10-20
Singleleaf pinyon	PIMO	---	---	5-10	---	---	---
Utah juniper	JUOS	---	---	5-10	---	---	---
Site symbol		029X010N	029X010N	029X069N	029X010N	---	029X010N
Potential production (lb/acre):							
Favorable years		600	600	350	600	---	600
Normal years		400	400	275	400	---	400
Unfavorable years		200	200	150	200	---	200

Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

(Bellehelen Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Malmesa soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated; Bellehelen soil—VIIs, nonirrigated

Site symbol: Malmesa soil—029X010N; Wahguyhe soil—029X010N

Woodland suitability group: Bellehelen soil—1r

682—Malmesa-Gabbvally-Brier association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,600 to 7,300 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Malmesa very cobbly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Brier very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—6 percent
Inclusion 2: Stewval very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent

Malmesa Soil

Position on landscape: Summits of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, bluegrass
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, bluegrass
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Brier Soil

Position on landscape: Upper, north-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Wyoming big sagebrush
Typical profile:
0 to 3 inches—very stony loam; 30 to 50 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very gravelly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks, ridges, and rimrock on hills and mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—side slopes of hills and mountains; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 210)

Woodland

(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope

TABLE 210.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Malmesa	Gabbvally	Brier	1	2
Galleta	HIJA	5-15	5-15	---	---	5-15
Needlegrass	STIPA	5-10	5-10	5-10	---	2-10
Indian ricegrass	ORHY	5-10	5-10	1-5	---	5-10
Bottlebrush squirreltail	SIHY	1-4	1-4	1-5	---	1-5
Dropseed	SPORO	1-5	1-5	---	---	---
Bluegrass	POA++	---	---	10-20	---	2-10
Prairie junegrass	KOCR	---	---	5-10	---	---
Other perennial grasses	PPGG	5-20	5-20	5-15	---	10-15
Native annual grasses	AAGG	1-5	1-5	1-3	---	1-5
Perennial forbs	PPFF	4-10	4-10	5-10	---	5-10
Native annual forbs	AAFF	2-7	2-7	1-5	---	1-5
Wyoming big sagebrush	ARTRW*	20-30	20-30	10-20	---	---
Nevada ephedra	EPNE	5-10	5-10	---	---	5-10
Bitterbrush	PURSH	---	---	5-10	---	---
Serviceberry	AMELA	---	---	1-5	---	---
Curlleaf mountainmahogany	CELE3	---	---	1-5	---	---
Green ephedra	ERVI	---	---	2-5	---	---
Black sagebrush	ARARN	---	---	---	---	15-20
Bud sagebrush	ARSP5	---	---	---	---	2-5
Winterfat	EULA5	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	---	10-20
Singleleaf pinyon	PIMO	---	---	2-5	---	---
Utah juniper	JUOS	---	---	1-4	---	---
Site symbol		029X010N	029X010N	029X065N	---	029X014N
Potential production (lb/acre):						
Favorable years		600	600	425	---	500
Normal years		400	400	350	---	300
Unfavorable years		200	200	200	---	100

Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Malmesa soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Brier soil—VIIs, nonirrigated
Site symbol: Malmesa soil—029X010N; Gabbvally soil—029X010N
Woodland suitability group: Brier soil—1r

683—Malmesa-Gabbvally-Wahguyhe association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 6,800 to 7,900 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 100 days

Composition

Malmesa very cobbly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Wahguyhe very stony sandy loam, 50 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Stewval very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Rock outcrop—7 percent
Inclusion 3: Brier very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—1 percent

Malmesa Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, Sandberg bluegrass, bottlebrush squirreltail
Typical profile:
0 to 3 inches—very cobbly fine sandy loam; 30 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
3 to 11 inches—very cobbly clay loam, very gravelly clay loam; 15 to 40 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
11 to 15 inches—extremely cobbly loam, very gravelly sandy loam, very cobbly sandy loam; 15 to 45 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
15 to 16 inches—indurated
16 inches—unweathered bedrock
Range in depth to indurated layer: 14 to 20 inches
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, green ephedra, bottlebrush squirreltail
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Wahguyhe Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush
Typical profile:
0 to 8 inches—very stony sandy loam; 25 to 30 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of side slopes of mesas; distinctive present vegetation—black sagebrush
Inclusion 2: Position on landscape—small peaks, ridges, and rimrock on mesas and hills; distinctive present vegetation—barren
Inclusion 3: Position on landscape—summits of side slopes of mesas; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 211)

Elements of Wildlife Habitat

Suitability of Malmesa soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Malmesa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 211.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Malmesa	Gabbvally	Wahguyhe	1	2	3
Galleta	HIJA	5-15	5-15	5-15	5-15	---	---
Needlegrass	STIPA	5-10	5-10	5-10	2-10	---	5-10
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	---	1-5
Bottlebrush squirreltail	SIHY	1-4	1-4	1-4	1-5	---	1-5
Dropseed	SPORO	1-5	1-5	1-5	---	---	---
Bluegrass	POA++	---	---	---	2-10	---	10-20
Prairie junegrass	KOCR	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-20	5-20	5-20	10-15	---	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	1-3
Perennial forbs	PPFF	4-10	4-10	4-10	5-10	---	5-10
Native annual forbs	AAFF	2-7	2-7	2-7	1-5	---	1-5
Wyoming big sagebrush	ARTRW*	20-30	20-30	20-30	---	---	10-20
Nevada ephedra	EPNE	5-10	5-10	5-10	5-10	---	---
Black sagebrush	ARARN	---	---	---	15-20	---	---
Bud sagebrush	ARSP5	---	---	---	2-5	---	---
Winterfat	EULA5	---	---	---	2-5	---	---
Bitterbrush	PURSH	---	---	---	---	---	5-10
Serviceberry	AMELA	---	---	---	---	---	1-5
Curlleaf mountainmahogany	CELE3	---	---	---	---	---	1-5
Green ephedra	ERVI	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	---	10-20
Singleleaf pinyon	PIMO	---	---	---	---	---	2-5
Utah juniper	JUOS	---	---	---	---	---	1-4
Site symbol		029X010N	029X010N	029X010N	029X014N	---	029X065N
Potential production (lb/acre):							
Favorable years		600	600	600	500	---	425
Normal years		400	400	400	300	---	350
Unfavorable years		200	200	200	100	---	200

Embankments, dikes, and levees: Severe—seepage, thin layer

Interpretive Groups

Capability classification: Malmesa soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated

Site symbol: Malmesa soil—029X010N; Gabbvally soil—029X010N; Wahguyhe soil—029X010N

690—Entero-Penelas-Rodad association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,300 to 6,900 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 50 degrees F
Frost-free season—about 110 days

Composition

Entero very gravelly loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Penelas very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Rodad very gravelly loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Haplargids, 8 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—7 percent
Inclusion 2: Ubehebe very gravelly loam, 30 to 75 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent

Entero Soil

Position on landscape: Higher, mainly north-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, bluegrass
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Penelas Soil

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, bluegrass, galleta
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8

Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rodad Soil

Position on landscape: South-facing, lower side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, ephedra, galleta
Typical profile:
0 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam; very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—south-facing mountainsides; distinctive present vegetation—spiny hopsage, littleleaf horsebrush
Inclusion 2: Position on landscape—north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 212)

Elements of Wildlife Habitat

Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 212.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Entero	Penelas	Rodad	1	2	3
Galleta	HIJA	5-15	5-15	5-20	5-15	---	1-3
Needlegrass	STIPA	5-10	2-10	5-10	2-5	5-15	---
Indian ricegrass	ORHY	5-10	5-10	5-15	5-10	2-5	2-5
Bottlebrush squirreltail	SIHY	1-4	1-5	2-5	1-3	5-15	---
Dropseed	SPORO	1-5	---	---	---	---	---
Bluegrass	POA++	---	2-10	---	---	10-20	---
Muttongrass	POFE	---	---	---	---	2-5	---
Needleandthread	STCO4	---	---	---	---	2-5	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-20	10-15	5-10	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	1-5
Perennial forbs	PPFF	4-10	5-10	5-10	5-10	5-15	5-10
Native annual forbs	AAFF	2-7	1-5	2-5	2-5	1-3	1-5
Wyoming big sagebrush	ARTRW*	20-30	---	---	---	---	---
Nevada ephedra	EPNE	5-10	5-10	2-5	1-5	---	1-5
Black sagebrush	ARARN	---	15-20	---	---	15-25	---
Bud sagebrush	ARSP5	---	2-5	2-5	2-5	---	---
Winterfat	EULA5	---	2-5	---	---	---	---
Shadscale	ATCO	---	---	15-25	---	---	---
Bailey greasewood	SAVEB	---	---	5-15	---	---	---
Spiny hopsage	GRSP	---	---	---	5-15	---	---
Anderson wolfberry	LYAN	---	---	---	5-15	---	---
Nevada dalea	DAPO2	---	---	---	5-10	---	---
Fremont dalea	DAFR	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---
Bitterbrush	PURSH	---	---	---	---	5-10	---
Green ephedra	EPVI	---	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	5-10	10-25
Singleleaf pinyon	PIMO	---	---	---	---	5-10	---
Utah juniper	JUOS	---	---	---	---	5-10	---
Site symbol		029X010N	029X014N	029X022N	029X021N	029X069N	029X009N
Potential production (lb/acre):							
Favorable years		600	500	300	300	350	700
Normal years		400	300	200	200	275	500
Unfavorable years		200	100	100	100	150	200

Interpretive Groups

Capability classification: Entero soil—VIIs, nonirrigated; Penelas soil—VIIs, nonirrigated; Rodad soil—VIIs, nonirrigated

Site symbol: Entero soil—029X010N; Penelas soil—029X014N; Rodad soil—029X022N

691—Entero-Ubehebe-Penelas association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,500 to 7,400 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 48 degrees F
Frost-free season—about 110 days

Composition

Entero very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Ubehebe very gravelly sandy loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—25 percent
Penelas very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Kyler very gravelly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—7 percent
Inclusion 2: Xerollic Haplargids, 15 to 50 percent slopes (Xerollic Haplargids - loamy, mixed, mesic, shallow)—5 percent
Inclusion 3: Trailamp very gravelly loam, 30 to 75 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—3 percent

Entero Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, bluegrass
Typical profile:
0 to 2 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam, extremely gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Ubehebe Soil

Position on landscape: North-facing mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, black sagebrush, bluegrass
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Penelas Soil

Position on landscape: South-facing mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, bluegrass
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountains; distinctive present vegetation—black sagebrush, galleta, bluegrass
Inclusion 2: Position on landscape—north-facing mountainsides; distinctive present vegetation—Wyoming big sagebrush, desert bitterbrush
Inclusion 3: Position on landscape—north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 213)

Woodland

(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope

TABLE 213.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Entero	Ubehebe	Penelas	1	2	3
Galleta	HIJA	5-15	---	5-15	5-15	15-20	---
Needlegrass	STIPA	5-10	5-15	2-10	2-10	5-20	2-5
Indian ricegrass	ORHY	5-10	2-5	5-10	5-10	2-5	---
Bottlebrush squirreltail	SIHY	1-4	5-15	1-5	1-5	---	5-10
Dropseed	SPORO	1-5	---	---	---	---	---
Bluegrass	POA++	---	10-20	2-10	2-10	2-5	10-20
Muttongrass	POFE	---	2-5	---	---	---	25-40
Needleandthread	STCO4	---	2-5	---	---	---	---
Purple threeawn	ARPU9	---	---	---	---	5-10	---
Prairie junegrass	KOCR	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-20	5-10	10-15	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	---	1-5	1-5	---	---
Perennial forbs	PPFF	4-10	5-15	5-10	5-10	5-10	5-15
Native annual forbs	AAFF	2-7	1-3	1-5	1-5	1-2	1-3
Wyoming big sagebrush	ARTRW*	20-30	---	---	---	15-20	---
Nevada ephedra	EPNE	5-10	---	5-10	5-10	5-10	---
Black sagebrush	ARARN	---	15-25	15-20	15-20	---	---
Bitterbrush	PURSH	---	5-10	---	---	5-10	5-15
Green ephedra	EPVI	---	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	---	2-5	---	---	---	1-3
Bud sagebrush	ARSP5	---	---	2-5	2-5	---	---
Winterfat	EULA5	---	---	2-5	2-5	---	---
Fourwing saltbush	ATCA2	---	---	---	---	2-5	---
Mountain big sagebrush	ARTRV	---	---	---	---	---	10-20
Snowberry	SYMPH	---	---	---	---	---	2-5
Curlleaf mountainmahogany	CELE3	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	5-10	10-20	10-20	10-15	5-15
Singleleaf pinyon	PIMO	---	5-10	---	---	---	2-5
Utah juniper	JUOS	---	5-10	---	---	---	1-3
Site symbol		029X010N	029X069N	029X014N	029X014N	029X029N	029X066N
Potential production (lb/acre):							
Favorable years		600	350	500	500	800	475
Normal years		400	275	300	300	600	375
Unfavorable years		200	150	100	100	400	200

Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

(Penelas Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, small stones, depth to rock

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Entero soil—VIIs, nonirrigated; Ubehebe soil—VIIs, nonirrigated; Penelas soil—VIIs, nonirrigated

Site symbol: Entero soil—029X010N; Penelas soil—029X014N

Woodland suitability group: Ubehebe soil—1r

692—Entero-Penelas-Slatery association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,100 to 6,800 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Entero very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Penelas very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—30 percent
Slatery very gravelly loam, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeroic Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Xeric Torriorthents, 8 to 30 percent slopes (Xeric Torriorthents - shallow)—4 percent
Inclusion 3: Kyler very gravelly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—2 percent
Inclusion 4: Rock outcrop—2 percent

Entero Soil

Position on landscape: Higher, mainly north-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, bluegrass
Typical profile:
0 to 2 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam, extremely gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Penelas Soil

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, bluegrass, galleta
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
potential frost action: Moderate

Slatery Soil

Position on landscape: Lower, south-facing side slopes of mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 2: Position on landscape—eroded hillsides and mountainsides; distinctive present vegetation—Wyoming big sagebrush, galleta, bluegrass
Inclusion 3: Position on landscape—mountainsides; distinctive present vegetation—black sagebrush, galleta
Inclusion 4: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 214)

Elements of Wildlife Habitat

Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Slatery Soil)
Suitability and limitations for the following uses:

TABLE 214.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Entero	Penelas	Slatery	1	2	3	4
Galleta	HIJA	5-15	5-15	10-20	1-3	5-15	5-15	---
Needlegrass	STIPA	5-10	2-10	5-10	---	5-10	2-10	---
Indian ricegrass	ORHY	5-10	5-10	2-5	2-5	5-10	5-10	---
Bottlebrush squirreltail	SIHY	1-4	1-5	---	---	1-4	1-5	---
Dropseed	SPORO	1-5	---	---	---	1-5	---	---
Bluegrass	POA++	---	2-10	---	---	---	2-10	---
Basin wildrye	ELCI2	---	---	---	2-5	---	---	---
Other perennial grasses	PPGG	5-20	10-15	5-10	5-10	5-20	10-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	4-10	5-10	5-10	5-10	4-10	5-10	---
Native annual forbs	AAFF	2-7	1-5	2-5	1-5	2-7	1-5	---
Wyoming big sagebrush	ARTRW*	20-30	---	---	---	20-30	---	---
Nevada ephedra	EPNE	5-10	5-10	5-10	1-5	5-10	5-10	---
Black sagebrush	ARARN	---	15-20	---	---	---	15-20	---
Bud sagebrush	ARSP5	---	2-5	2-5	---	---	2-5	---
Winterfat	EULA5	---	2-5	---	---	---	2-5	---
Spiny menodora	MESP2	---	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	---	5-10	---	---	---	---
Anderson wolfberry	LYAN	---	---	5-10	---	---	---	---
Shadscale	ATCO	---	---	2-5	---	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---	---
Other shrubs	SSSS	10-20	10-20	15-25	10-25	10-20	10-20	---
Site symbol		029X010N	029X014N	029X037N	029X009N	029X010N	029X014N	---
Potential production (lb/acre):								
Favorable years		600	500	300	700	600	500	---
Normal years		400	300	200	500	400	300	---
Unfavorable years		200	100	100	200	200	100	---

Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Entero soil—VIIs, nonirrigated; Penelas soil—VIIs, nonirrigated; Slatery soil—VIIs, nonirrigated
Site symbol: Entero soil—029X010N; Penelas soil—029X014N; Slatery soil—029X037N

693—Entero-Rodad association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,000 to 6,800 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Entero very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic shallow)—60 percent
Rodad very gravelly loam, moist 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 30 to 75 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 2: Veet very gravelly sandy loam, 4 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Kyler very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—3 percent

Entero Soil

Position on landscape: Higher, mainly north-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, rabbitbrush
Typical profile:
0 to 2 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam, extremely gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rodad Soil

Position on landscape: South-facing, lower side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, Nevada ephedra, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam; very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight

Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—concave pockets on hillsides and mountainsides; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 2: Position on landscape—inset fans adjacent to hills and mountains; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 3: Position on landscape—hills, mountains; distinctive present vegetation—black sagebrush, green ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 215)

Elements of Wildlife Habitat

Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Entero soil—VIIs, nonirrigated; Rodad soil—VIIs, nonirrigated
Site symbol: Entero soil—029X010N; Rodad soil—029X037N

TABLE 215.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Entero	Rodad	1	2	3
Galleta	HIJA	5-15	10-20	5-15	5-25	5-15
Needlegrass	STIPA	5-10	5-10	5-10	5-15	2-10
Indian ricegrass	ORHY	5-10	2-5	5-10	5-15	5-10
Bottlebrush squirreltail	SIHY	1-4	---	1-4	1-5	1-5
Dropseed	SPORO	1-5	---	1-5	5-15	---
Bluegrass	POA++	---	---	---	---	2-10
Other perennial grasses	PPGG	5-20	5-10	5-20	5-20	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	4-10	5-10	4-10	3-10	5-10
Native annual forbs	AAFF	2-7	2-5	2-7	2-5	1-5
Wyoming big sagebrush	ARTRW*	20-30	---	20-30	15-20	---
Nevada ephedra	EPNE	5-10	5-10	5-10	---	5-10
Bud sagebrush	ARSP5	---	2-5	---	5-10	2-5
Spiny menodora	MESP2	---	10-25	---	---	---
Bailey greasewood	SAVEB	---	5-10	---	---	---
Anderson wolfberry	LYAN	---	5-10	---	---	---
Shadscale	ATCO	---	2-5	---	---	---
Spiny hopsage	GRSP	---	---	---	5-10	---
Winterfat	EULA5	---	---	---	2-10	2-5
Black sagebrush	ARARN	---	---	---	---	15-20
Other shrubs	SSSS	10-20	15-25	10-20	10-20	10-20
Site symbol		029X010N	029X037N	029X010N	029X049N	029X014N
Potential production (lb/acre):						
Favorable years		600	300	600	900	500
Normal years		400	200	400	600	300
Unfavorable years		200	100	200	300	100

700—Armoine-Blappert-Advokay association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,000 to 6,500 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Armoine very stony loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Blappert very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—30 percent
Advokay gravelly coarse sandy loam, 15 to 30 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—4 percent
Inclusion 2: Tulecan very stony sandy loam, 15 to 75 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Armoine Soil

Position on landscape: Upper side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, bottlebrush squirreltail
Typical profile:
0 to 5 inches—very stony loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Blappert Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 12 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
12 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Advokay Soil

Position on landscape: South-facing, lower side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass, bud sagebrush
Typical profile:
0 to 3 inches—gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 7 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2
7 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded areas on mountains and hills; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—mainly north-facing mountains and hills; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush,
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 216)

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Blappert soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Advokay soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty,large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blappert Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Advokay Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Blappert soil—VIIs, nonirrigated; Advokay soil—VIIs, nonirrigated
Site symbol: Armoine soil—029X014N; Blappert soil—029X037N; Advokay soil—029X017N

TABLE 216.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Armoine	Blappert	Advokay	1	2	3
Galleta	HIJA	5-15	10-20	10-25	5-15	---	1-3
Indian ricegrass	ORHY	5-10	2-5	5-10	5-10	2-5	2-5
Needlegrass	STIPA	2-10	5-10	2-5	5-10	5-15	---
Bluegrass	POA++	2-10	---	---	---	10-20	---
Bottlebrush squirreltail	SIHY	1-5	---	2-5	1-4	5-15	---
Dropseed	SPORO	---	---	---	1-5	---	---
Muttongrass	POFE	---	---	---	---	2-5	---
Needleandthread	STCO4	---	---	---	---	2-5	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	5-10	5-15	5-20	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---	1-5
Perennial forbs	PPFF	5-10	5-10	4-10	4-10	5-15	5-10
Native annual forbs	AAFF	1-5	2-5	1-5	2-7	1-3	1-5
Black sagebrush	ARARN	15-20	---	---	---	15-25	---
Nevada ephedra	EPNE	5-10	5-10	1-5	5-10	---	1-5
Bud sagebrush	ARSP5	2-5	2-5	5-10	---	---	---
Winterfat	EULA5	2-5	---	5-10	---	---	---
Spiny menodora	MESP2	---	10-25	---	---	---	---
Bailey greasewood	SAVEB	---	5-10	5-10	---	---	---
Anderson wolfberry	LYAN	---	5-10	---	---	---	---
Shadscale	ATCO	---	2-5	10-25	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	20-30	---	---
Bitterbrush	PURSH	---	---	---	---	5-10	---
Green ephedra	EPVI	---	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	15-25	10-20	10-20	5-10	10-25
Joshua-tree	YUBR	---	---	1-2	---	---	---
Singleleaf pinyon	PIMO	---	---	---	---	5-10	---
Utah juniper	JUOS	---	---	---	---	5-10	---
Site symbol		029X014N	029X037N	029X017N	029X010N	029X069N	029X009N
Potential production (lb/acre):							
Favorable years		500	300	350	600	350	700
Normal years		300	200	250	400	275	500
Unfavorable years		100	100	100	200	150	200

701—Armoine-Tulecan association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,000 to 7,600 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 51 degrees F
Frost-free season—about 120 days

Composition

Armoine very gravelly sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Tulecan very cobbly coarse sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Pumel very stony fine sandy loam, 30 to 75 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—5 percent
Inclusion 2: Lomoine extremely stony sandy loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—5 percent
Inclusion 3: Ubehebe very gravelly loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 4: Rock outcrop—1 percent

Armoine Soil

Position on landscape: Lower side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta, bottlebrush squirreltail
Typical profile:
0 to 5 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Tulecan Soil

Position on landscape: Upper part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 4 inches—very cobbly coarse sandy loam; 40 to 50 percent cobbles and stones and 30 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 15 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam, very cobbly sandy clay loam; 10 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of hillsides; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 2: Position on landscape—lower part of hillsides; distinctive present vegetation—black sagebrush, Nevada ephedra, galleta
Inclusion 3: Position on landscape—upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, black sagebrush
Inclusion 4: Position on landscape—ridges and crests on hills and mountains; distinctive present vegetation—barren
Inclusion of minor extent: Position on landscape—hillsides and mountains near California state line; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion of minor extent: Position on landscape—hillsides near California state line; distinctive present vegetation—singleleaf pinyon

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 217)

Woodland

(Tulecan Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, pine bluegrass, bottlebrush squirreltail, green ephedra, galleta

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Tulecan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Poor—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage
(Tulecan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Tulecan soil—VIIs, nonirrigated
Site symbol: Armoine soil—029X014N
Woodland suitability group: Tulecan soil—1r

TABLE 217.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Armoine	Tulecan	1	2	3	4
Galleta	HIJA	5-15	---	5-20	5-15	---	---
Indian ricegrass	ORHY	5-10	2-5	5-15	5-10	2-5	---
Needlegrass	STIPA	2-10	5-15	5-10	2-10	5-15	---
Bluegrass	POA++	2-10	10-20	---	2-10	10-20	---
Bottlebrush squirreltail	SIHY	1-5	5-15	2-5	1-5	5-15	---
Muttongrass	POFE	---	2-5	---	---	2-5	---
Needleandthread	STCO4	---	2-5	---	---	2-5	---
Other perennial grasses	PPGG	10-15	5-10	5-10	0-15	5-10	---
Native annual grasses	AAGG	1-5	---	1-5	1-5	---	---
Perennial forbs	PPFF	5-10	5-15	5-10	5-10	5-15	---
Native annual forbs	AAFF	1-5	1-3	2-5	1-5	1-3	---
Black sagebrush	ARARN	15-20	15-25	---	15-20	15-25	---
Nevada ephedra	EPNE	5-10	---	2-5	5-10	---	---
Bud sagebrush	ARSP5	2-5	---	2-5	2-5	---	---
Winterfat	EULA5	2-5	---	---	2-5	---	---
Bitterbrush	PURSH	---	5-10	---	---	5-10	---
Green ephedra	EPVI	---	2-5	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	2-5	---	---	2-5	---
Shadscale	ATCO	---	---	15-25	---	---	---
Bailey greasewood	SAVEB	---	---	5-15	---	---	---
Other shrubs	SSSS	10-20	5-10	10-20	10-20	5-10	---
Singleleaf pinyon	PIMO	---	5-10	---	---	5-10	---
Utah juniper	JUOS	---	5-10	---	---	5-10	---
Site symbol		O29XO14N	O29XO69N	O29XO22N	O29XO14N	O29XO69N	---
Potential production (lb/acre):							
Favorable years		500	350	300	500	350	---
Normal years		300	275	200	300	275	---
Unfavorable years		100	150	100	100	150	---

702—Armoine-Blappert-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 51 degrees F
Frost-free season—about 130 days

Composition

Armoine very gravelly sandy loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Blappert very gravelly sandy loam, 30 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Pumel very gravelly sandy loam, 30 to 75 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 2: Slatery very gravelly loam, 30 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 3: Thike very cobbly sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Armoine Soil

Position on landscape: Upper part of mountains and hills, north-facing side slopes
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, pine bluegrass
Typical profile:
0 to 5 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Blappert Soil

Position on landscape: Lower part or south-facing side slopes on hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, desert needlegrass
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 12 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
12 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7

Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges on hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded, south-facing hillsides and mountainsides; distinctive present vegetation—sparse shadscale, crested needlegrass
Inclusion 2: Position on landscape—lower part of hillsides and mountainsides; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—hillsides and mountainsides, mainly north aspects and below rock outcroppings; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 218)

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Suitability of Blappert soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blappert Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Blappert soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Armoine soil—029X014N; Blappert soil—029X037N

TABLE 218.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Armoine	Blappert	Rock outcrop	1	2	3
Galleta	HIJA	5-15	10-20	---	5-20	10-20	5-15
Indian ricegrass	ORHY	5-10	2-5	---	5-15	2-5	5-10
Needlegrass	STIPA	2-10	5-10	---	5-10	5-10	5-10
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	---	---	2-5	---	1-4
Dropseed	SPORO	---	---	---	---	---	1-5
Other perennial grasses	PPGG	10-15	5-10	---	5-10	5-10	5-20
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	5-10	4-10
Native annual forbs	AAFF	1-5	2-5	---	2-5	2-5	2-7
Black sagebrush	ARARN	15-20	---	---	---	---	---
Nevada ephedra	EPNE	5-10	5-10	---	2-5	5-10	5-10
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	2-5	---
Winterfat	EULA5	2-5	---	---	---	---	---
Spiny menodora	MESP2	---	10-25	---	---	10-25	---
Bailey greasewood	SAVEB	---	5-10	---	5-15	5-10	---
Anderson wolfberry	LYAN	---	5-10	---	---	5-10	---
Shadscale	ATCO	---	2-5	---	15-25	2-5	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	---	20-30
Other shrubs	SSSS	10-20	15-25	---	10-20	15-25	10-20
Site symbol		O29XO14N	O29XO37N	---	O29XO22N	O29XO37N	O29XO10N
Potential production (lb/acre):							
Favorable years		500	300	---	300	300	600
Normal years		300	200	---	200	200	400
Unfavorable years		100	100	---	100	100	200

703—Armoine-Pumel-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,400 to 7,000 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 51 degrees F
Frost-free season—about 120 days

Composition

Armoine very stony sandy loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—45 percent
Pumel very gravelly sandy loam, 30 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—25 percent
Rock outcrop—20 percent
Contrasting inclusions as follows—
Inclusion 1: Lathrop very gravelly sandy loam, 4 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—4 percent
Inclusion 2: Zadvar very gravelly sandy loam, 4 to 15 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—3 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Armoine Soil

Position on landscape: Upper side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 5 inches—very stony loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Pumel Soil

Position on landscape: Lower part of hills and mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, desert needlegrass
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, GP-GM, SM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges on hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—south-facing fan remnants and alluvial fans adjacent to hills and mountains; distinctive present vegetation—shadscale, spiny menodora, galleta
Inclusion 2: Position on landscape—fan remnants and alluvial fans adjacent to hills and mountains; distinctive present vegetation—black sagebrush, galleta
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 219)

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pumel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Pumel soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Armoine soil—029X014N; Pumel soil—029X022N

TABLE 219.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Armoine	Pumel	Rock outcrop	1	2	3
Galleta	HIJA	5-15	5-20	---	5-10	5-20	1-3
Indian ricegrass	ORHY	5-10	5-15	---	5-20	5-10	2-5
Needlegrass	STIPA	2-10	5-10	---	---	5-15	---
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	---	---	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	5-10	---	5-10	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	3-8	5-10
Native annual forbs	AAFF	1-5	2-5	---	2-5	2-5	1-5
Black sagebrush	ARARN	15-20	---	---	---	20-25	---
Nevada ephedra	EPNE	5-10	2-5	---	5-10	2-5	1-5
Bud sagebrush	ARSP5	2-5	2-5	---	5-10	5-10	---
Winterfat	EULA5	2-5	---	---	---	2-5	---
Shadscale	ATCO	---	15-25	---	5-15	---	---
Bailey greasewood	SAVEB	---	5-15	---	5-15	---	---
Spiny menodora	MESP2	---	---	---	10-30	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	---	10-20	10-20	10-25
Site symbol		029X014N	029X022N	---	029X036N	029X008N	029X009N
Potential production (lb/acre):							
Favorable years		500	300	---	400	700	700
Normal years		300	200	---	300	400	500
Unfavorable years		100	100	---	100	200	200

704—Armoine-Rock outcrop-Tulecan complex, 30 to 50 percent slopes

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 6,800 to 7,800 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 49 degrees F
Frost-free season—about 110 days

Composition

Armoine very stony sandy loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Rock outcrop—30 percent
Tulecan very stony sandy loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 30 to 75 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—7 percent
Inclusion 2: Aridic Argixerolls, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Pumel very stony sandy loam, 30 to 75 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—3 percent

Armoine Soil

Position on landscape: Upper side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta, bluegrass
Typical profile:
0 to 5 inches—very stony sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks and ridges on mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Tulecan Soil

Position on landscape: Upper part of hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, bluegrass, galleta
Typical profile:
0 to 4 inches—very stony sandy loam; 40 to 50 percent cobbles and stones and 30 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 15 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam, very cobbly sandy clay loam; 10 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate

Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded mountainsides; distinctive present vegetation—black sagebrush, bluegrass, galleta
Inclusion 2: Position on landscape—mainly north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Inclusion 3: Position on landscape—mainly south-facing mountainsides; distinctive present vegetation—shadscale, galleta, desert needlegrass

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 220)

Woodland

(Tulecan Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, pine bluegrass, bottlebrush squirreltail, green ephedra, galleta

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Tulecan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Tulecan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Tulecan soil—VIIs, nonirrigated
Site symbol: Armoine soil—029X014N
Woodland suitability group: Tulecan soil—1r

TABLE 220.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Armoine	Rock outcrop	Tulecan	1	2	3
Galleta	HIJA	5-15	---	---	5-15	---	5-20
Indian ricegrass	ORHY	5-10	---	2-5	5-10	1-5	5-15
Needlegrass	STIPA	2-10	---	5-15	2-10	5-10	5-10
Bluegrass	POA++	2-10	---	10-20	2-10	10-20	---
Bottlebrush squirreltail	SIHY	1-5	---	5-15	1-5	1-5	2-5
Muttongrass	POFE	---	---	2-5	---	---	---
Needleandthread	STCO4	---	---	2-5	---	---	---
Prairie junegrass	KOCR	---	---	---	---	5-10	---
Other perennial grasses	PPGG	10-15	---	5-10	10-15	5-15	5-10
Native annual grasses	AAGG	1-5	---	---	1-5	1-3	1-5
Perennial forbs	PPFF	5-10	---	5-15	5-10	5-10	5-10
Native annual forbs	AAFF	1-5	---	1-3	1-5	1-5	2-5
Black sagebrush	ARARN	15-20	---	15-25	15-20	---	---
Nevada ephedra	EPNE	5-10	---	---	5-10	---	2-5
Bud sagebrush	ARSP5	2-5	---	---	2-5	---	2-5
Winterfat	EULA5	2-5	---	---	2-5	---	---
Bitterbrush	PURSH	---	---	5-10	---	5-10	---
Green ephedra	EPVI	---	---	2-5	---	---	---
Douglas rabbitbrush	CHVI8	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	10-20	---
Serviceberry	AMELA	---	---	---	---	1-5	---
Curlleaf mountainmahogany	CELE3	---	---	---	---	1-5	---
Green ephedra	ERVI	---	---	---	---	2-5	---
Shadscale	ATCO	---	---	---	---	---	15-25
Bailey greasewood	SAVEB	---	---	---	---	---	5-15
Other shrubs	SSSS	10-20	---	5-10	10-20	10-20	10-20
Singleleaf pinyon	PIMO	---	---	5-10	---	2-5	---
Utah juniper	JUOS	---	---	5-10	---	1-4	---
Site symbol		029X014N	---	029X069N	029X014N	029X065N	029X022N
Potential production (lb/acre):							
Favorable years		500	---	350	500	425	300
Normal years		300	---	275	300	350	200
Unfavorable years		100	---	150	100	200	100

705—Armoine-Penelas association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,200 to 7,000 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 120 days

Composition

Armoine very gravelly sandy loam, 8 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—60 percent
Penelas very channery loam, 8 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—5 percent
Inclusion 2: Tulecan very gravelly sandy loam, 15 to 30 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Veet very gravelly sandy loam, 8 to 30 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Ubehebe very gravelly loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—3 percent

Armoine Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Penelas Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—crests and shoulders on side slopes of mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—north-facing upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, galleta, rubber rabbitbrush
Inclusion 4: Position on landscape—north-facing upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 221)

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—depth to rock, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Penelas soil—VIIs, nonirrigated
Site symbol: Armoine soil—029X014N; Penelas soil—029X014N

TABLE 221.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Armoine	Penelas	1	2	3	4
Galleta	HIJA	5-15	5-15	---	---	5-25	---
Indian ricegrass	ORHY	5-10	5-10	---	2-5	5-15	2-5
Needlegrass	STIPA	2-10	2-10	---	5-15	5-15	5-15
Bluegrass	POA++	2-10	2-10	---	10-20	---	10-20
Bottlebrush squirreltail	SIHY	1-5	1-5	---	5-15	1-5	5-15
Muttongrass	POFE	---	---	---	2-5	---	2-5
Needleandthread	STCO4	---	---	---	2-5	---	2-5
Dropseed	SPORO	---	---	---	---	5-15	---
Other perennial grasses	PPGG	10-15	10-15	---	5-10	5-20	5-10
Native annual grasses	AAGG	1-5	1-5	---	---	1-5	---
Perennial forbs	PPFF	5-10	5-10	---	5-15	3-10	5-15
Native annual forbs	AAFF	1-5	1-5	---	1-3	2-5	1-3
Black sagebrush	ARARN	15-20	15-20	---	15-25	---	15-25
Nevada ephedra	EPNE	5-10	5-10	---	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	---	---	5-10	---
Winterfat	EULA5	2-5	2-5	---	---	2-10	---
Bitterbrush	PURSH	---	---	---	5-10	---	5-10
Green ephedra	EPVI	---	---	---	2-5	---	2-5
Douglas rabbitbrush	CHVI8	---	---	---	2-5	---	2-5
Wyoming big sagebrush	ARTRW*	---	---	---	---	15-20	---
Spiny hopsage	GRSP	---	---	---	---	5-10	---
Other shrubs	SSSS	10-20	10-20	---	5-10	10-20	5-10
Singleleaf pinyon	PIMO	---	---	---	5-10	---	5-10
Utah juniper	JUOS	---	---	---	5-10	---	5-10
Site symbol		029X014N	029X014N	---	029X069N	029X049N	029X069N
Potential production (lb/acre):							
Favorable years		500	500	---	350	900	350
Normal years		300	300	---	275	600	275
Unfavorable years		100	100	---	150	300	150

706—Armoine-Itme-Lathrop association

Map Unit Setting

Position on landscape: Hills, fan piedmonts
Elevation: 6,300 to 6,700 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Armoine very gravelly sandy loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Itme very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Lathrop very gravelly sandy loam, 4 to 8 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Itme very gravelly sand, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Pumel very gravelly sandy loam, 8 to 15 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—4 percent

Armoine Soil

Position on landscape: Hillsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, rabbitbrush, galleta, horsebrush, Wyoming big sagebrush
Typical profile:
0 to 5 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny hopsage, fourwing saltbush, Bailey greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—very gravelly sand; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SP; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP, SP-SM; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A

Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, Nevada ephedra, Bailey greasewood, bud sagebrush, Indian ricegrass
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, SP-SM, GP, SP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—washes; distinctive present vegetation—burrobrush, fourwing saltbush
Inclusion 2: Position on landscape—inset fans, washes; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—hillsides; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 222)

Elements of Wildlife Habitat

Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Armoine Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Lathrop Soil)
Suitability and limitations for the following uses:

TABLE 222.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Armoine	Itme	Lathrop	1	2	3
Galleta	HIJA	5-15	5-20	5-10	---	5-15	5-20
Indian ricegrass	ORHY	5-10	5-20	5-20	5-10	5-10	5-15
Needlegrass	STIPA	2-10	---	---	---	2-10	5-10
Bluegrass	POA++	2-10	---	---	---	---	---
Bottlebrush squirreltail	SIHY	1-5	---	---	---	1-5	2-5
Dropseed	SPORO	---	---	---	---	1-5	---
Other perennial grasses	PPGG	10-15	5-15	5-10	5-10	10-20	5-10
Native annual grasses	AAGG	1-5	2-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	2-6	5-10	5-10
Native annual forbs	AAFF	1-5	1-5	2-5	1-5	2-5	2-5
Black sagebrush	ARARN	15-20	---	---	---	---	---
Nevada ephedra	EPNE	5-10	2-5	5-10	2-5	2-5	2-5
Bud sagebrush	ARSP5	2-5	5-15	5-10	---	---	2-5
Winterfat	EULA5	2-5	---	---	---	2-5	---
Spiny hopsage	GRSP	---	10-20	---	---	2-5	---
Anderson wolfberry	LYAN	---	5-15	---	---	---	---
Fremont dalea	DAFR	---	2-10	---	---	---	---
Nevada dalea	DAPO2	---	2-10	---	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	2-5	---	---
Spiny menodora	MESP2	---	---	10-30	---	---	---
Bailey greasewood	SAVEB	---	---	5-15	2-10	---	5-15
Shadscale	ATCO	---	---	5-15	---	---	15-25
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	5-10	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	15-20	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25	10-20
Joshua-tree	YUBR	---	0-2	---	---	---	---
Site symbol		029X014N	029X016N	029X036N	029X041N	029X006N	029X022N
Potential production (lb/acre):							
Favorable years		500	400	400	500	800	300
Normal years		300	300	300	300	500	200
Unfavorable years		100	200	100	100	300	100

Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones

Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Armoine soil—VIIs, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated; Lathrop soil—VIIs, nonirrigated
Site symbol: Armoine soil—029X014N; Itme soil—029X016N; Lathrop soil—029X036N

710—Tokoper-Blacktop association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 5,400 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Tokoper very cobbly sandy loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—60 percent
Blacktop very stony fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Downeyville very stony fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Rock outcrop—7 percent

Tokoper Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, galleta
Typical profile:
0 to 2 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 30 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 8 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-4
8 to 10 inches—very gravelly loam, extremely gravelly loam, very gravelly sandy loam; 25 to 40 percent cobbles and stones and 60 to 80 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
10 to 11 inches—indurated
11 inches—unweathered bedrock
Range in depth to indurated layer: 8 to 14 inches
Range in depth to bedrock: 8 to 15 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.24; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Side slopes of mesas and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Bailey greasewood
Typical profile:
0 to 4 inches—very stony fine sandy loam; 25 to 45 percent cobbles and stones and 40 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of mesas; distinctive present vegetation—shadscale, bud sagebrush, galleta

Inclusion 2: Position on landscape—small peaks and ridges on mesas, hills; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 223)

Elements of Wildlife Habitat

Suitability of Tokoper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tokoper Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, large stones

TABLE 223.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Tokoper	Blacktop	1	2
Galleta	HIJA	5-15	---	5-20	---
Indian ricegrass	ORHY	5-10	2-5	5-15	---
Needlegrass	STIPA	5-10	---	5-10	---
King desertgrass	BLKI	---	1-2	---	---
Bottlebrush squirreltail	SIHY	---	1-2	2-5	---
Other perennial grasses	PPGG	10-15	1-5	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	2-5	5-10	---
Native annual forbs	AAFF	2-5	1-5	2-5	---
Shadscale	ATCO	15-20	40-60	15-25	---
Nevada ephedra	EPNE	5-10	---	2-5	---
Anderson wolfberry	LYAN	5-10	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	---
Nevada dalea	DAPO2	2-5	5-10	---	---
Bailey greasewood	SAVEB	---	10-15	5-15	---
Cooper wolfberry	LYCO2	---	2-5	---	---
Other shrubs	SSSS	10-20	5-15	10-20	---
Site symbol		029X031N	029X033N	029X022N	---
Potential production (lb/acre):					
Favorable years		400	100	300	---
Normal years		250	50	200	---
Unfavorable years		150	25	100	---

Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Tokoper soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated
Site symbol: Tokoper soil—029X031N; Blacktop soil—029X033N

711—Tokoper-Ardivey association

Map Unit Setting

Position on landscape: Rock pediments, hills, fan piedmonts
Elevation: 5,300 to 5,700 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Tokoper very cobbly sandy loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—60 percent
Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Haplargids, 2 to 8 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Rock outcrop—2 percent

Tokoper Soil

Position on landscape: Rock pediment remnants, hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Indian ricegrass
Typical profile:
0 to 2 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 30 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 8 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-4
8 to 10 inches—very gravelly loam, extremely gravelly loam, very gravelly sandy loam; 25 to 40 percent cobbles and stones and 60 to 80 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
10 to 11 inches—indurated
11 inches—unweathered bedrock
Range in depth to indurated layer: 8 to 14 inches
Range in depth to bedrock: 8 to 15 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.24; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan piedmont remnants adjacent to rock pediments and hills
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants adjacent to hills; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush, shadscale
Inclusion 3: Position on landscape—random outcrops on hills and pediments; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 224)

Elements of Wildlife Habitat

Suitability of Tokoper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tokoper Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Severe—excess fines
Gravel: Severe—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Tokoper soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated
Site symbol: Tokoper soil—029X031N; Ardivey soil—029X036N

TABLE 224.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Tokoper	Ardivey	1	2	3
Galleta	HIJA	5-15	5-10	10-25	---	---
Indian ricegrass	ORHY	5-10	5-20	5-10	5-10	---
Needlegrass	STIPA	5-10	---	2-5	---	---
Bottlebrush squirreltail	SIHY	---	---	2-5	---	---
Other perennial grasses	PPGG	10-15	5-10	5-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	---
Perennial forbs	PPFF	5-10	5-10	4-10	2-6	---
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	---
Shadscale	ATCO	15-20	5-15	10-25	---	---
Nevada ephedra	EPNE	5-10	5-10	1-5	2-5	---
Anderson wolfberry	LYAN	5-10	---	---	---	---
Bud sagebrush	ARSP5	2-5	5-10	5-10	---	---
Nevada dalea	DAPO2	2-5	---	---	---	---
Spiny menodora	MESP2	---	10-30	---	---	---
Bailey greasewood	SAVEB	---	5-15	5-10	2-10	---
Winterfat	EULA5	---	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	---
Joshua-tree	YUBR	---	---	1-2	---	---
Site symbol		029X031N	029X036N	029X017N	029X041N	---
Potential production (lb/acre):						
Favorable years		400	400	350	500	---
Normal years		250	300	250	300	---
Unfavorable years		150	100	100	100	---

712—Tokoper-Stewval association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 5,700 to 6,300 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Tokoper very cobbly sandy loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—45 percent
Stewval very stony fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Malmesa very cobbly fine sandy loam, 2 to 4 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, 15 to 75 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Rock outcrop—2 percent

Tokoper Soil

Position on landscape: Summits of mesas and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Galleta, shadscale, Indian ricegrass
Typical profile:
0 to 2 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 30 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 8 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-4
8 to 10 inches—very gravelly loam, extremely gravelly loam, very gravelly sandy loam; 25 to 40 percent cobbles and stones and 60 to 80 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
10 to 11 inches—indurated
11 inches—unweathered bedrock
Range in depth to indurated layer: 8 to 14 inches
Range in depth to bedrock: 8 to 15 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.24; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stewval Soil

Position on landscape: Side slopes of mesas and hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 1 inch—very stony fine sandy loam; 25 to 30 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
1 to 7 inches—extremely gravelly loam, very gravelly clay loam, very gravelly loam; 0 to 25 percent cobbles and stones and 55 to 85 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
7 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate

Available water capacity: 1.0 to 1.3 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of mesas; distinctive present vegetation—Wyoming big sagebrush, galleta
Inclusion 2: Position on landscape—hillsides; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—rabbitbrush, burrobrush, Wyoming big sagebrush
Inclusion 4: Position on landscape—mesas, hills; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 225)

Elements of Wildlife Habitat

Suitability of Tokoper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stewval soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tokoper Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Improbable source—thin layer
(Stewval Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Tokoper soil—VIIs, nonirrigated; Stewval soil—VIIs, nonirrigated
Site symbol: Tokoper soil—029X031N; Stewval soil—029X014N

TABLE 225.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Tokoper	Stewval	1	2	3	4
Galleta	HIJA	5-15	5-15	5-15	5-20	1-3	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-15	2-5	---
Needlegrass	STIPA	5-10	2-10	5-10	5-10	---	---
Bottlebrush squirreltail	SIHY	---	1-5	1-4	2-5	---	---
Dropseed	SPORO	---	---	1-5	---	---	---
Basin wildrye	ELCI2	---	---	---	---	2-5	---
Other perennial grasses	PPGG	10-15	10-15	5-20	5-10	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	5-10	4-10	5-10	5-10	---
Native annual forbs	AAFF	2-5	1-5	2-7	2-5	1-5	---
Shadscale	ATCO	15-20	---	---	15-25	---	---
Nevada ephedra	EPNE	5-10	5-10	5-10	2-5	1-5	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	---	---
Nevada dalea	DAPO2	2-5	---	---	---	---	---
Black sagebrush	ARARN	---	15-20	---	---	---	---
Winterfat	EULA5	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---	---	---
Bailey greasewood	SAVEB	---	---	---	5-15	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	---	1-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25	---
Site symbol		029X031N	029X014N	029X010N	029X022N	029X009N	---
Potential production (lb/acre):							
Favorable years		400	500	600	300	700	---
Normal years		250	300	400	200	500	---
Unfavorable years		150	100	200	100	200	---

713—Tokoper-Upspring-Rock outcrop association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 4,200 to 5,400 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 56 degrees F
Frost-free season—about 180 days

Composition

Tokoper very cobbly sandy loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Upspring very cobbly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—30 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Blacktop very cobbly sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—8 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—7 percent

Tokoper Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, Anderson wolfberry, desert needlegrass, galleta
Typical profile:
0 to 2 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 30 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 8 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-4
8 to 10 inches—very gravelly loam, extremely gravelly loam, very gravelly sandy loam; 25 to 40 percent cobbles and stones and 60 to 80 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
10 to 11 inches—indurated
11 inches—unweathered bedrock
Range in depth to indurated layer: 8 to 14 inches
Range in depth to bedrock: 8 to 15 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.24; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Upspring Soil

Position on landscape: Side slopes of hills and mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Creosotebush, white bursage, shadscale
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 60 percent cobbles and stones and 35 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - -A-1, A-2
2 to 12 inches—very gravelly fine sandy loam, extremely gravelly fine sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
12 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Summits of plateaus and hills
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides; distinctive present vegetation—shadscale
Inclusion 2: Position on landscape—hillsides, summits of mesas; distinctive present vegetation—shadscale, ephedra, Anderson wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 226)

Elements of Wildlife Habitat

Suitability of Tokoper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Upspring soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tokoper Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock, cemented pan
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Upspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—thin layer
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—seepage, thin layer

Interpretive Groups

Capability classification: Tokoper soil—VIIs, nonirrigated; Upspring soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Tokoper soil—029X031N; Upspring soil—030X044N

TABLE 226.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Tokoper	Upspring	Rock outcrop	1	2
Galleta	HIJA	5-15	---	---	---	5-20
Indian ricegrass	ORHY	5-10	1-5	---	2-5	5-15
Needlegrass	STIPA	5-10	3-5	---	---	5-10
Bottlebrush squirreltail	SIHY	---	1-2	---	1-2	2-5
King desertgrass	BLKI	---	---	---	1-2	---
Other perennial grasses	PPGG	10-15	2-5	---	1-5	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	5-7	---	2-5	5-10
Native annual forbs	AAFF	2-5	3-6	---	1-5	2-5
Shadscale	ATCO	15-20	20-40	---	40-60	15-25
Nevada ephedra	EPNE	5-10	5-10	---	---	2-5
Anderson wolfberry	LYAN	5-10	5-10	---	---	---
Bud sagebrush	ARSP5	2-5	---	---	2-5	2-5
Nevada dalea	DAPO2	2-5	---	---	5-10	---
White bursage	FRDU2	---	2-5	---	---	---
Spiny menodora	MESP2	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	---	10-15	5-15
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	---	5-15	10-20
Site symbol		029X031N	030X044N	---	029X033N	029X022N
Potential production (lb/acre):						
Favorable years		400	250	---	100	300
Normal years		250	150	---	50	200
Unfavorable years		150	50	---	25	100

715—Tokoper-Downeyville-Pintwater association

Map Unit Setting

Position on landscape: Mesas, hills
Elevation: 4,600 to 5,600 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Tokoper very cobbly sandy loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—30 percent
Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—30 percent
Pintwater very stony fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—7 percent
Inclusion 2: Blacktop very cobbly sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 3: Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Tokoper Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, Anderson wolfberry, desert needlegrass, galleta
Typical profile:
0 to 2 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 30 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1, A-2
2 to 8 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-4
8 to 10 inches—very gravelly loam, extremely gravelly loam, very gravelly sandy loam; 25 to 40 percent cobbles and stones and 60 to 80 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
10 to 11 inches—indurated
11 inches—unweathered bedrock
Range in depth to indurated layer: 8 to 14 inches
Range in depth to bedrock: 8 to 15 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.24; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Downeyville Soil

Position on landscape: Side slopes of hills and mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Anderson wolfberry, bud sagebrush, galleta, Nevada ephedra, desert needlegrass
Typical profile:
0 to 4 inches—very cobbly fine sandy loam; 30 to 50 percent cobbles and stones and 35 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 9 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
9 inches—unweathered bedrock

Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pintwater Soil

Position on landscape: Eroded side slopes of hills
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Anderson wolfberry, desert needlegrass
Typical profile:
0 to 3 inches—very stony fine sandy loam; 25 to 35 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
3 to 11 inches—very gravelly fine sandy loam, very stony fine sandy loam, extremely cobbly sandy loam; 30 to 45 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
11 inches—unweathered bedrock
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—mesas, hills; distinctive present vegetation—barren
Inclusion 2: Position on landscape—hillsides below rimrock; distinctive present vegetation—shadscale
Inclusion 3: Position on landscape—inset fans between hills and mesas; distinctive present vegetation—shadscale, Nevada ephedra, Anderson wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 227)

Elements of Wildlife Habitat

Suitability of Tokoper soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Downeyville soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pintwater soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Tokoper Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, cemented pan
Local roads and streets: Severe—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Downeyville Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pintwater Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones

TABLE 227.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tokoper	Downeyville	Pintwater	1	2	3
Galleta	HIJA	5-15	5-20	5-20	---	---	10-25
Indian ricegrass	ORHY	5-10	5-15	5-15	---	2-5	5-10
Needlegrass	STIPA	5-10	5-10	5-10	---	---	2-5
Bottlebrush squirreltail	SIHY	---	2-5	2-5	---	1-2	2-5
King desertgrass	BLKI	---	---	---	---	1-2	---
Other perennial grasses	PPGG	10-15	5-10	5-10	---	1-5	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	---	2-5	4-10
Native annual forbs	AAFF	2-5	2-5	2-5	---	1-5	1-5
Shadscale	ATCO	15-20	15-25	15-25	---	40-60	10-25
Nevada ephedra	EPNE	5-10	2-5	2-5	---	---	1-5
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Nevada dalea	DAPO2	2-5	---	---	---	5-10	---
Bailey greasewood	SAVEB	---	5-15	5-15	---	10-15	5-10
Bud sagebrush	ARSP5	---	2-5	2-5	---	2-5	5-10
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---
Winterfat	EULA5	---	---	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	10-20	---	5-15	10-20
Joshua-tree	YUBR	---	---	---	---	---	1-2
Site symbol		029X031N	029X022N	029X022N	---	029X033N	029X017N
Potential production (lb/acre):							
Favorable years		400	300	300	---	100	350
Normal years		250	200	200	---	50	250
Unfavorable years		150	100	100	---	25	100

Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Rangeland seeding: Depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Excess fines—excess fines
Embankments, dikes, and levees: Severe—seepage, large stones, thin layer

Interpretive Groups

Capability classification: Tokoper soil—VIIs, nonirrigated; Downeyville soil—VIIs, nonirrigated; Pintwater soil—VIIs, nonirrigated
Site symbol: Tokoper soil—029X031N; Downeyville soil—029X022N; Pintwater soil—029X022N

720—Penelas-Weepah association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,000 to 7,200 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 51 degrees F
Frost-free season—about 110 days

Composition

Penelas very channery loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Weepah very gravelly loam, 30 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Ubehebe very gravelly loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Typic Haplargids, 15 to 50 percent slopes (Typic Haplargids - clayey-skeletal, montmorillonitic, mesic, shallow)—3 percent
Inclusion 3: Rock outcrop—3
Inclusion 4: Theriot very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—1 percent

Penelas Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—shale
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Weepah Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—limestone
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 8 inches—very gravelly loam, extremely gravelly fine sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mainly north-facing upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush

Inclusion 2: Position on landscape—mainly south-facing hillsides and mountainsides; distinctive present vegetation—spiny menodora, spiny hopsage, galleta

Inclusion 3: Position on landscape—small peaks and ridges on mountains and hills; distinctive present vegetation—barren

Inclusion 4: Position on landscape—lower part of hillsides; distinctive present vegetation—shadscale, bud sagebrush, galleta

Inclusion of minor extent: Position on landscape—mountainsides; distinctive present vegetation—Wyoming big sagebrush, bottlebrush squirreltail

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 228)

Elements of Wildlife Habitat

Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Weepah soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Penelas Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Weepah Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Penelas soil—VIIs, nonirrigated; Weepah soil—VIIs, nonirrigated

Site symbol: Penelas soil—029X014N; Weepah soil—029X014N

TABLE 228.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Penelas	Weepah	1	2	3	4
Galleta	HIJA	5-15	5-15	---	5-15	---	5-20
Needlegrass	STIPA	5-10	5-10	5-15	5-10	---	5-10
Indian ricegrass	ORHY	5-10	5-10	2-5	5-10	---	5-15
Bottlebrush squirreltail	SIHY	1-4	1-4	5-15	1-4	---	2-5
Dropseed	SPORO	1-5	1-5	---	1-5	---	---
Bluegrass	POA++	---	---	10-20	---	---	---
Muttongrass	POFE	---	---	2-5	---	---	---
Needleandthread	STCO4	---	---	2-5	---	---	---
Other perennial grasses	PPGG	10-15	10-15	5-10	10-15	---	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	---	1-5
Perennial forbs	PPFF	5-10	5-10	5-15	5-10	---	5-10
Native annual forbs	AAFF	1-5	1-5	1-3	1-5	---	2-5
Black sagebrush	ARARN	15-20	15-20	15-25	15-20	---	---
Nevada ephedra	AEPNE	5-10	5-10	---	5-10	---	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	---	2-5
Winterfat	EULA5	2-5	2-5	---	2-5	---	---
Bitterbrush	PURSH	---	---	5-10	---	---	---
Green ephedra	EPVI	---	---	2-5	---	---	---
Douglas rabbitbrush	CHVI8	---	---	2-5	---	---	---
Shadscale	ATCO	---	---	---	---	---	15-25
Bailey greasewood	SAVEB	---	---	---	---	---	5-15
Other shrubs	SSSS	10-20	10-20	5-10	10-20	---	10-20
Singleleaf pinyon	PIMO	---	---	5-10	---	---	---
Utah juniper	JUOS	---	---	5-10	---	---	---
Site symbol		029X014N	029X014N	029X069N	029X014N	---	029X022N
Potential production (lb/acre):							
Favorable years		500	500	350	500	---	300
Normal years		300	300	275	300	---	200
Unfavorable years		100	100	150	100	---	100

721—Penelas-Ubehebe-Entero association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,000 to 7,600 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 50 degrees F
Frost-free season—about 100 days

Composition

Penelas very channery loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—25 percent
Entero very gravelly loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Logring very cobbly fine sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—7 percent
Inclusion 2: Kyler extremely gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—6 percent
Inclusion 3: Rock outcrop—2 percent

Penelas Soil

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta, bottlebrush squirreltail
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
potential frost action: Moderate

Ubehebe Soil

Position on landscape: North-facing upper part of mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, bottlebrush squirreltail, galleta
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Entero Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, rabbitbrush, galleta, bottlebrush squirreltail
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of hills and mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 2: Position on landscape—hillsides, mountainsides; distinctive present vegetation—black sagebrush, Nevada ephedra, galleta
Inclusion 3: Position on landscape—ridges, crests, and steep side slopes of hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 229)

Woodland

(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope

TABLE 229.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Penelas	Ubehebe	Entero	1	2	3
Galleta	HIJA	5-15	---	5-15	---	5-15	---
Indian ricegrass	ORHY	5-10	2-5	5-10	2-5	5-10	---
Needlegrass	STIPA	2-10	5-15	5-10	5-15	2-10	---
Bluegrass	POA++	2-10	10-20	---	10-20	2-10	---
Bottlebrush squirreltail	SIHY	1-5	5-15	1-4	5-15	1-5	---
Muttongrass	POFE	---	2-5	---	2-5	---	---
Needleandthread	STCO4	---	2-5	---	2-5	---	---
Dropseed	SPORO	---	---	1-5	---	---	---
Other perennial grasses	PPGG	10-15	5-10	5-20	5-10	10-15	---
Native annual grasses	AAGG	1-5	---	1-5	---	1-5	---
Perennial forbs	PPFF	5-10	5-15	4-10	5-15	5-10	---
Native annual forbs	AAFF	1-5	1-3	2-7	1-3	1-5	---
Black sagebrush	ARARN	15-20	15-25	---	15-25	15-20	---
Nevada ephedra	EPNE	5-10	---	5-10	---	5-10	---
Bud sagebrush	ARSP5	2-5	---	---	---	2-5	---
Winterfat	EULA5	2-5	---	---	---	2-5	---
Bitterbrush	PURSH	---	5-10	---	5-10	---	---
Green ephedra	EPVI	---	2-5	---	2-5	---	---
Douglas rabbitbrush	CHVI8	---	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---	---	---
Other shrubs	SSSS	10-20	5-10	10-20	5-10	10-20	---
Singleleaf pinyon	PIMO	---	5-10	---	5-10	---	---
Utah juniper	JUOS	---	5-10	---	5-10	---	---
Site symbol		029X014N	029X069N	029X010N	029X069N	029X014N	---
Potential production (lb/acre):							
Favorable years		500	350	600	350	500	---
Normal years		300	275	400	275	300	---
Unfavorable years		100	150	200	150	100	---

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Entero Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Penelas soil—VIIs, nonirrigated; Ubehebe soil—VIIs, nonirrigated; Entero soil—VIIs, nonirrigated

Site symbol: Penelas soil—029X014N; Entero soil—029X010N

Woodland suitability group: Ubehebe soil—1r

723—Penelas-Slatery-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,500 to 6,400 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 51 degrees F
Frost-free season—about 110 days

Composition

Penelas very channery loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—45 percent
Slatery very gravelly loam, 30 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—35 percent
Rock outcrop—10 percent
Contrasting inclusions as follows—
Inclusion 1: Entero very gravelly loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 2: Ubehebe very gravelly loam, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—3 percent
Inclusion 3: Blappert very gravelly sandy loam, 15 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—3 percent

Penelas Soil

Position on landscape: North-facing upper part of hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GC, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
potential frost action: Moderate

Slatery Soil

Position on landscape: Lower, south-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid

Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—hillsides and mountainsides, mainly north aspects and near rock outcroppings; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—north-facing, upper side slopes of hills and mountains; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 3: Position on landscape—hills, mountains; distinctive present vegetation—spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 230)

Elements of Wildlife Habitat

Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Penelas soil—VIIs, nonirrigated; Slatery soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Penelas soil—029X014N; Slatery soil—029X037N

TABLE 230.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Penelas	Slatery	Rock outcrop	1	2	3
Galleta	HIJA	5-15	10-20	---	5-15	---	10-20
Indian ricegrass	ORHY	5-10	2-5	---	5-10	2-5	2-5
Needlegrass	STIPA	2-10	5-10	---	5-10	5-15	5-10
Bluegrass	POA++	2-10	---	---	---	10-20	---
Bottlebrush squirreltail	SIHY	1-5	---	---	1-4	5-15	---
Dropseed	SPORO	---	---	---	1-5	---	---
Muttongrass	POFE	---	---	---	---	2-5	---
Other perennial grasses	PPGG	10-15	5-10	---	5-20	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	---	1-5
Perennial forbs	PPFF	5-10	5-10	---	4-10	5-15	5-10
Native annual forbs	AAFF	1-5	2-5	---	2-7	1-3	2-5
Black sagebrush	ARARN	15-20	---	---	---	15-25	---
Nevada ephedra	EPNE	5-10	5-10	---	5-10	---	5-10
Bud sagebrush	ARSP5	2-5	2-5	---	---	---	2-5
Winterfat	EULA5	2-5	---	---	---	---	---
Spiny menodora	MESP2	---	10-25	---	---	---	10-25
Bailey greasewood	SAVEB	---	5-10	---	---	---	5-10
Anderson wolfberry	LYAN	---	5-10	---	---	---	5-10
Shadscale	ATCO	---	2-5	---	---	---	2-5
Wyoming big sagebrush	ARTRW*	---	---	---	20-30	---	---
Bitterbrush	PURSH	---	---	---	---	5-10	---
Green ephedra	EPVI	---	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	15-25	---	10-20	5-10	15-25
Singleleaf pinyon	PIMO	---	---	---	---	5-10	---
Utah juniper	JUOS	---	---	---	---	5-10	---
Site symbol		029X014N	029X037N	---	029X010N	029X069N	029X037N
Potential production (lb/acre):							
Favorable years		500	300	---	600	350	300
Normal years		300	200	---	400	275	200
Unfavorable years		100	100	---	200	150	100

724—Penelas-Entero-Weepah association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,800 to 7,400 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 51 degrees F
Frost-free season—about 110 days

Composition

Penelas very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Entero very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—30 percent
Weepah very gravelly loam, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Slatery very gravelly loam, 15 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 2: Kyler very cobbly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—5 percent
Inclusion 3: Ubehebe very gravelly loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent

Penelas Soil

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, green ephedra, galleta, rabbitbrush, desert needlegrass
Typical profile:
0 to 3 inches—very channery loam; 0 to 5 percent cobbles and stones and 50 to 75 percent channers (by weight); platy structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—extremely shaly silty clay loam, extremely shaly clay loam; 0 to 5 percent cobbles and stones and 75 to 90 percent shale channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GP-GC; estimated AASHTO classification - A-2
9 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
potential frost action: Moderate

Entero Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, rabbitbrush, desert needlegrass
Typical profile:
0 to 2 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam, clay loam, extremely gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7

Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Weepah Soil

Position on landscape: Eroded areas on mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra, rabbitbrush
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-2, A-4
2 to 8 inches—very gravelly loam, extremely gravelly fine sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); subangular blocky structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mainly north-facing hillsides and mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush
Inclusion 2: Position on landscape—mainly south-facing hillsides and mountainsides; distinctive present vegetation—spiny menodora, Nevada ephedra, desert needlegrass
Inclusion 3: Position on landscape—hills, mountains; distinctive present vegetation—black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 231)

Elements of Wildlife Habitat

Suitability of Penelas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Weepah soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Penelas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—low strength, slope
Roadfill: Poor—depth to rock, low strength, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Weepah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 231.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Penelas	Entero	Weepah	1	2	3
Galleta	HIJA	5-15	5-15	5-15	---	10-20	5-15
Indian ricegrass	ORHY	5-10	5-10	5-10	2-5	2-5	5-10
Needlegrass	STIPA	2-10	5-10	2-10	5-15	5-10	2-10
Bluegrass	POA++	2-10	---	2-10	10-20	---	2-10
Bottlebrush squirreltail	SIHY	1-5	1-4	1-5	5-15	---	1-5
Dropseed	SPORO	---	1-5	---	---	---	---
Muttongrass	POFE	---	---	---	2-5	---	---
Other perennial grasses	PPGG	10-15	5-20	10-15	5-10	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	5-10	5-15	5-10	5-10
Native annual forbs	AAFF	1-5	2-7	1-5	1-3	2-5	1-5
Black sagebrush	ARARN	15-20	---	15-20	15-25	---	15-20
Nevada ephedra	EPNE	5-10	5-10	5-10	---	5-10	5-10
Bud sagebrush	ARSP5	2-5	---	2-5	---	2-5	2-5
Winterfat	EULA5	2-5	---	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---	---
Spiny menodora	MESP2	---	---	---	---	10-25	---
Bailey greasewood	SAVEB	---	---	---	---	5-10	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---
Shadscale	ATCO	---	---	---	---	2-5	---
Bitterbrush	PURSH	---	---	---	5-10	---	---
Green ephedra	EPVI	---	---	---	2-5	---	---
Douglas rabbitbrush	CHVI8	---	---	---	2-5	---	---
Other shrubs	SSSS	10-20	10-20	10-20	5-10	15-25	10-20
Singleleaf pinyon	PIMO	---	---	---	5-10	---	---
Utah juniper	JUOS	---	---	---	5-10	---	---
Site symbol		029X014N	029X010N	029X014N	029X069N	029X037N	029X014N
Potential production (lb/acre):							
Favorable years		500	600	500	350	300	500
Normal years		300	400	300	275	200	300
Unfavorable years		100	200	100	150	100	100

Interpretive Groups

Capability classification: Penelas soil—VIIs, nonirrigated; Entero soil—VIIs, nonirrigated; Weepah soil—VIIs, nonirrigated

Site symbol: Penelas soil—029X014N; Entero soil—029X010N; Weepah soil—029X014N

730—Koyen-Stumble-Penoyer association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts, flood plains
Elevation: 4,900 to 5,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Koyen fine sandy loam, 0 to 4 percent slopes (Typic Camborthids - coarse-loamy, mixed, mesic))—35 percent
Stumble loamy sand, 0 to 4 percent slopes (Typic Torripsamments - mixed, mesic)—30 percent
Penoyer silt loam, 0 to 2 percent slopes (Typic Torriorthents - coarse-silty, mixed (calcareous), mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Geer sandy loam, 0 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—9 percent
Inclusion 2: Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic—6 percent

Koyen Soil

Position on landscape: Fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Littleleaf horsebrush, fourwing saltbush, Nevada dalea, sping hopsage
Typical profile:
0 to 4 inches—fine sandy loam; 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 5); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 15 inches—sandy loam; 5 to 15 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
15 to 35 inches—stratified loam to gravelly loamy sand; 15 to 25 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
35 to 60 inches or more—gravelly loamy sand, very gravelly loamy sand; 45 to 55 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM, SP-SM, SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 5.5 to 6.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.32; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stumble Soil

Position on landscape: Fan skirts
Parent material: Eolian material over alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Winterfat, fourwing saltbush, bud sagebrush
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Penoyer Soil

Position on landscape: Flood plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Indian ricegrass, Douglas rabbitbrush, bud sagebrush, shadscale
Typical profile:
0 to 4 inches—silt loam; platy structure; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML; estimated AASHTO classification - A-4
4 to 60 inches or more—silt loam; massive; soft, very friable; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—March to August
Permeability: Moderate
Available water capacity: 11 to 12 inches
Water supplying capacity: 6 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.55; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—winterfat, bud sagebrush, fourwing saltbush
Inclusion 2: Position on landscape—alluvial flats; distinctive present vegetation—shadscale, black greasewood

Major Uses

Current uses: Rangeland, wildlife habitat
Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 232)

Elements of Wildlife Habitat

Suitability of Koyen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Penoyer soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Koyen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—thin layer
(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Penoyer Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, too crusty
Shallow excavations: Moderate—flooding
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping

Interpretive Groups

Capability classification: Koyen soil—IIe, irrigated, and VIIc, nonirrigated; Stumble soil—IVs, irrigated, and VIIs, nonirrigated; Penoyer soil—IIw, irrigated, and VIIw, nonirrigated
Site symbol: Koyen soil—029X046N; Stumble soil—029X012N; Penoyer soil—029X020N

TABLE 232.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Koyen	Stumble	Penoyer	1	2
Galleta	HIJA	5-20	2-5	5-20	5-20	---
Indian ricegrass	ORHY	5-10	20-30	5-15	5-15	---
Dropseed	SPORO	5-15	5-25	---	---	---
Needlegrass	STIPA	2-5	2-5	2-10	2-10	---
Bottlebrush squirreltail	SIHY	---	---	1-5	1-5	---
Alkali sacaton	SPAI	---	---	---	---	10-15
Basin wildrye	ELCI2	---	---	---	---	5-10
Inland saltgrass	DIST	---	---	---	---	1-5
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-15
Native annual grasses	AAGG	1-5	2-5	1-5	1-5	2-5
Perennial forbs	PPFF	5-7	5-10	5-10	5-10	5-10
Native annual forbs	AAFF	2-4	2-5	1-5	1-5	2-5
Fourwing saltbush	ATCA2	10-15	15-25	2-10	2-10	2-5
Winterfat	EULA5	5-20	5-20	20-30	20-30	---
Bud sagebrush	ARSP5	5-10	5-10	10-15	10-15	---
Spiny hopsage	GRSP	2-8	1-5	---	---	---
Anderson wolfberry	LYAN	1-5	---	---	---	5-10
Nevada ephedra	EPNE	---	---	1-5	1-5	---
Shadscale	ATCO	---	---	---	---	15-30
Black greasewood	SAVE4	---	---	---	---	5-15
Cooper wolfberry	LYCO2	---	---	---	---	5-10
Rubber rabbitbrush	CHNA2	---	---	---	---	2-5
Basin big sagebrush	ARTRT*	---	---	---	---	2-5
Other shrubs	SSSS	10-25	10-20	10-15	10-15	10-20
Site symbol		029X046N	029X012N	029X020N	029X020N	029X024N
Potential production (lb/acre):						
Favorable years		450	500	400	400	800
Normal years		350	350	250	250	350
Unfavorable years		175	200	100	100	150

741—Tulecan-Ubehebe-Armoine association

Map Unit Setting

Position on landscape: Mountains
Elevation: 5,800 to 7,800 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 49 degrees F
Frost-free season—about 100 days

Composition

Tulecan very cobbly coarse sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—40 percent
Ubehebe very gravelly sandy loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—25 percent
Armoine very gravelly sandy loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Penelas very channery loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Rock outcrop—5 percent
Inclusion 3: Xeric Torriorthents very gravelly sandy loam, 8 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Tulecan Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, Nevada ephedra
Typical profile:
0 to 4 inches—very cobbly coarse sandy loam; 40 to 50 percent cobbles and stones and 30 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
4 to 15 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam, very cobbly sandy clay loam; 10 to 30 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.02; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Ubehebe Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, Nevada ephedra
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid

Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Armoine Soil

Position on landscape: Lower part of mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, Nevada ephedra
Typical profile:
0 to 5 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
5 to 15 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SM; estimated AASHTO classification - A-2
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.2 to 1.7 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—lower side slopes of mountains; distinctive present vegetation—black sagebrush, Nevada ephedra
Inclusion 2: Position on landscape—small peaks and ridges on mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 233)

Woodland

(Tulecan Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, pine bluegrass, bottlebrush squirreltail, green ephedra, galleta
(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Tulecan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Armoine soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Tulecan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 233.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Tulecan	Ubehebe	Armoine	1	2	3
Bluegrass	POA++	10-20	10-20	2-10	2-10	---	---
Bottlebrush squirreltail	SIHY	5-15	5-15	1-5	1-5	---	1-5
Needlegrass	STIPA	5-15	5-15	2-10	2-10	---	5-15
Muttongrass	POFE	2-5	2-5	---	---	---	---
Needleandthread	STCO4	2-5	2-5	---	---	---	---
Indian ricegrass	ORHY	2-5	2-5	5-10	5-10	---	5-15
Galleta	HIJA	---	---	5-15	5-15	---	5-25
Dropseed	SPORO	---	---	---	---	---	5-15
Other perennial grasses	PPGG	5-10	5-10	10-15	10-15	---	5-20
Native annual grasses	AAGG	---	---	1-5	1-5	---	1-5
Perennial forbs	PPFF	5-15	5-15	5-10	5-10	---	3-10
Native annual forbs	AAFF	1-3	1-3	1-5	1-5	---	2-5
Black sagebrush	ARARN	15-25	15-25	15-20	15-20	---	---
Bitterbrush	PURSH	5-10	5-10	---	---	---	---
Green ephedra	EPVI	2-5	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	2-5	2-5	---	---	---	---
Nevada ephedra	EPNE	---	---	5-10	5-10	---	---
Bud sagebrush	ARSP5	---	---	2-5	2-5	---	5-10
Winterfat	EULA5	---	---	2-5	2-5	---	2-10
Wyoming big sagebrush	ARTRW*	---	---	---	---	---	15-20
Spiny hopsage	GRSP	---	---	---	---	---	5-10
Other shrubs	SSSS	5-10	5-10	10-20	10-20	---	10-20
Singleleaf pinyon	PIMO	5-10	5-10	---	---	---	---
Utah juniper	JUOS	5-10	5-10	---	---	---	---
Site symbol		029X069N	029X069N	029X014N	029X014N	---	029X049N
Potential production (lb/acre):							
Favorable years		350	350	500	500	---	900
Normal years		275	275	300	300	---	600
Unfavorable years		150	150	100	100	---	300

Embankments, dikes, and levees: Severe—thin layer

(Armoine Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, small stones

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—slope

Roadfill: Poor—depth to rock

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—seepage, thin layer

Interpretive Groups

Capability classification: Tulecan soil—VIIs, nonirrigated; Ubehebe soil—VIIs, nonirrigated; Armoine soil—VIIs, nonirrigated

Site symbol: Armoine soil—029X014N

Woodland suitability group: Tulecan soil—1r; Ubehebe soil—1r

760—Lazan-Rock outcrop-Cucamungo association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,500 to 8,200 feet
Climatic data (average annual):
Precipitation—about 13 inches
Air temperature—about 45 degrees F
Frost-free season—about 90 days

Composition

Lazan very gravelly coarse sand, 30 to 75 percent slopes (Typic Xerorthents - sandy-skeletal, mixed, mesic, shallow)—35 percent
Rock outcrop—30 percent
Cucamungo very stony sandy loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Thike very cobbly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Alcan very gravelly sandy loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—7 percent

Lazan Soil

Position on landscape: Erosion balloons on mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, green ephedra, black sagebrush
Typical profile:
0 to 2 inches—very gravelly coarse sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, SP-SM; estimated AASHTO classification - A-1
2 to 6 inches—very gravelly loamy coarse sand, very gravelly coarse sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
6 inches—weathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 8 inches
Runoff: Very rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Ridges and steep side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Cucamungo Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, Utah juniper, mountain big sagebrush, desert bitterbrush, currant
Typical profile:
0 to 3 inches—very stony sandy loam; 25 to 55 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8

Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of mountainsides; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 2: Position on landscape—mountainsides; distinctive present vegetation—Wyoming big sagebrush, desert bitterbrush, galleta

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 234)

Woodland

(Lazan Soil)
Site index for common trees: Singleleaf pinyon—38
Most important native understory plants: Indian ricegrass, desert needlegrass, Wyoming big sagebrush, mountain big sagebrush, antelope bitterbrush, green ephedra, rabbitbrush
(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Lazan soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Lazan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, too sandy, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Cucamungo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Lazan soil—VIIs, nonirrigated; Cucamungo soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Woodland suitability group: Lazan soil—1r; Cucamungo soil—2r

TABLE 234.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given. "T" means trace]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Lazan	Rock outcrop	Cucamungo	1	2
Needlegrass	STIPA	20-40	---	2-5	5-10	5-20
Indian ricegrass	ORHY	5-10	---	---	5-10	2-5
Muttongrass	POFE	---	---	25-40	---	---
Bluegrass	POA++	---	---	10-20	---	2-5
Bottlebrush squirreltail	SIHY	---	---	5-10	1-4	---
Prairie junegrass	KOCR	---	---	5-10	---	---
Galleta	HIJA	---	---	---	5-15	15-20
Dropseed	SPORO	---	---	---	1-5	---
Purple threeawn	ARPU9	---	---	---	---	5-10
Other perennial grasses	PPGG	5-10	---	5-10	5-20	5-10
Native annual grasses	AAGG	---	---	---	1-5	---
Perennial forbs	PPFF	2-5	---	5-15	4-10	5-10
Native annual forbs	AAFF	---	---	1-3	2-7	1-2
Bitterbrush	PURSH	15-25	---	5-15	---	5-10
Wyoming big sagebrush	ARTRW*	10-20	---	---	20-30	15-20
Rabbitbrush	CHRYS9	2-5	---	---	---	---
Mountain big sagebrush	ARTRV	---	---	10-20	---	---
Snowberry	SYMPH	---	---	2-5	---	---
Curlleaf mountainmahogany	CELE3	---	---	2-5	---	---
Douglas rabbitbrush	CHVI8	---	---	1-3	---	---
Nevada ephedra	EPNE	---	---	---	5-10	5-10
Fourwing saltbush	ATCA2	---	---	---	---	2-5
Other shrubs	SSSS	5-10	---	5-15	10-20	10-15
Singleleaf pinyon	PIMO	2-5	---	2-5	---	---
Utah juniper	JUOS	T-2	---	1-3	---	---
Site symbol		026X061N	---	029X066N	029X010N	029X029N
Potential production (lb/acre):						
Favorable years		200	---	475	600	800
Normal years		150	---	375	400	600
Unfavorable years		100	---	200	200	400

761—Lazan-Squawtip association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,800 to 8,500 feet
Climatic data (average annual):
Precipitation—about 13 inches
Air temperature—about 45 degrees F
Frost-free season—about 90 days

Composition

Lazan very gravelly coarse sand, 30 to 75 percent slopes (Typic Xerorthents - sandy-skeletal, mixed, mesic, shallow)—50 percent
Squawtip very stony loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Ravenswood very stony sandy loam, 30 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—5 percent
Inclusion 2: Hiridge very cobbly sandy loam, 8 to 30 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—4 percent
Inclusion 3: Kiote very cobbly sandy loam, 30 to 50 percent slopes (Argic Pachic Cryoborolls - loamy-skeletal, mixed)—3 percent
Inclusion 4: Stewval very gravelly sandy loam, 15 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent

Lazan Soil

Position on landscape: Eroded areas of mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, green ephedra
Typical profile:
0 to 2 inches—very gravelly coarse sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, SP-SM; estimated AASHTO classification - A-1
2 to 6 inches—very gravelly loamy coarse sand, very gravelly coarse sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM; estimated AASHTO classification - A-1
6 inches—weathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 8 inches
Runoff: Very rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—5
Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Squawtip Soil

Position on landscape: Stable areas of mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush
Typical profile:
0 to 10 inches—very stony loam; 30 to 50 percent cobbles and stones and 15 to 30 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
10 to 24 inches—very cobbly loam, very gravelly sandy clay loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2
24 inches—weathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—2; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush, mountainmahogany
Inclusion 2: Position on landscape—crests and ridges of mountains; distinctive present vegetation—low sagebrush, rabbitbrush
Inclusion 3: Position on landscape—upper part of mountainsides; distinctive present vegetation—mountain big sagebrush, rabbitbrush, green ephedra
Inclusion 4: Position on landscape—lower part of mountainsides; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 235)

Woodland

(Lazan Soil)
Site index for common trees: Singleleaf pinyon—38
Most important native understory plants: Indian ricegrass, desert needlegrass, Wyoming big sagebrush, mountain big sagebrush, antelope bitterbrush, green ephedra, rabbitbrush
(Squawtip Soil)
Site index for common trees: Singleleaf pinyon—75
Most important native understory plants: Mountain big sagebrush, bluegrass, needlegrass, bitterbrush, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Lazan soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Squawtip soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Coniferous plants (nonirrigated)—good
Shrubs (nonirrigated)—good

Ratings for Selected Uses

(Lazan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, too sandy, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage
(Squawtip Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—large stones
Shallow excavations: Severe—slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Lazan soil—VIIs, nonirrigated; Squawtip soil—VIIs, nonirrigated
Woodland suitability group: Lazan soil—1r; Squawtip soil—2r

TABLE 235.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community. "T" means trace]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Lazan	Squawtip	1	2	3	4
Needlegrass	STIPA	20-40	2-5	2-5	5-10	5-10	2-10
Indian ricegrass	ORHY	5-10	---	---	---	---	5-10
Muttongrass	POFE	---	25-40	25-40	---	---	---
Bluegrass	POA++	---	10-20	10-20	3-5	3-8	2-10
Bottlebrush squirreltail	SIHY	---	5-10	5-10	---	---	1-5
Prairie junegrass	KOCR	---	5-10	5-10	---	---	---
Western wheatgrass	AGSM	---	---	---	5-10	---	---
Mountain brome	BRMA4	---	---	---	---	5-10	---
Slender wheatgrass	AGTR	---	---	---	---	3-8	---
Galleta	HIJA	---	---	---	---	---	5-15
Other perennial grasses	PPGG	5-10	5-10	5-10	10-15	10-20	10-15
Native annual grasses	AAGG	---	---	---	2-4	2-5	1-5
Perennial forbs	PPFF	2-5	5-15	5-15	8-12	10-15	5-10
Native annual forbs	AAFF	---	1-3	1-3	3-7	3-5	1-5
Bitterbrush	PURSH	15-25	5-15	5-15	---	---	---
Wyoming big sagebrush	ARTRW*	10-20	---	---	---	---	---
Rabbitbrush	CHRYS9	2-5	---	---	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	10-20	---	10-20	---
Snowberry	SYMPH	---	2-5	2-5	---	5-10	---
Curlleaf mountainmahogany	CELE3	---	2-5	2-5	---	---	---
Douglas rabbitbrush	CHVI8	---	1-3	1-3	---	---	---
Low sagebrush	ARAR8	---	---	---	20-30	---	---
Low rabbitrbush	CHVIH2	---	---	---	3-5	---	---
Horsebrush	TETRA3	---	---	---	2-5	---	---
Serviceberry	AMELA	---	---	---	---	3-5	---
Green ephedra	EPVI	---	---	---	---	1-3	---
Black sagebrush	ARARN	---	---	---	---	---	15-20
Nevada ephedra	EPNE	---	---	---	---	---	5-10
Bud sagebrush	ARSP5	---	---	---	---	---	2-5
Winterfat	EULA5	---	---	---	---	---	2-5
Other shrubs	SSSS	5-10	5-15	5-15	15-20	5-10	10-20
Singleleaf pinyon	PIMO	2-5	2-5	2-5	---	---	---
Utah juniper	JUOS	T-2	1-3	1-3	---	---	---
Site symbol		O26XO61N	O29XO66N	O29XO66N	O29XO53N	O29XO51N	O29XO14N
Potential production (lb/acre):							
Favorable years		200	475	475	700	1,000	500
Normal years		150	375	375	400	700	300
Unfavorable years		100	200	200	300	400	100

770—Alcan-Cucamungo association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,500 to 7,500 feet
Climatic data (average annual):
Precipitation—about 14 inches
Air temperature—about 45 degrees F
Frost-free season—about 110 days

Composition

Alcan very gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Alcan very gravelly coarse sandy loam, 50 to 75 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Cucamungo very gravelly sandy loam, 30 to 75 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xerollic Haplargids very cobbly sandy loam, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Blappert very gravelly coarse sandy loam, 30 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Veet very gravelly sandy loam, 8 to 15 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Lazan very gravelly coarse sandy loam, 50 to 75 percent slopes (Typic Xerorthents - sandy-skeletal, mixed, mesic, shallow)—2 percent

Alcan, Steep, Soil

Position on landscape: Mountainsides, hills
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, desert bitterbrush, galleta
Typical profile:
0 to 2 inches—very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 13 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
13 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Alcan, Very Steep, Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, desert bitterbrush, galleta
Typical profile:
0 to 2 inches—very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 13 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
13 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 8 inches
Runoff: Very rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Cucamungo Soil

Position on landscape: Upper part of mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountain big sagebrush, desert bitterbrush
Typical profile:
0 to 3 inches—very gravelly sandy loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of mountainsides and hillsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—south-facing mountainsides and hillsides; distinctive present vegetation—shadscale, spiny menodora
Inclusion 3: Position on landscape—fan piedmonts and stream terraces adjacent to mountains and hills; distinctive present vegetation—Wyoming big sagebrush
Inclusion 4: Position on landscape—mountainsides; distinctive present vegetation—sparse singleleaf pinyon

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 236)

Woodland

(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Alcan, steep, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Alcan, very steep, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Alcan, Steep, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Alcan, Very Steep, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines

TABLE 236.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community. "T" means trace]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Alcan, steep	Alcan, very steep	Cucamungo	1	2	3	4
Galleta	HIJA	15-20	15-20	---	5-15	10-20	5-25	---
Needlegrass	STIPA	5-20	5-20	2-5	5-10	5-10	5-15	20-40
Purple threeawn	ARPU9	5-10	5-10	---	---	---	---	---
Bluegrass	POA++	2-5	2-5	10-20	---	---	---	---
Indian ricegrass	ORHY	2-5	2-5	---	5-10	2-5	5-15	5-10
Muttongrass	POFE	---	---	25-40	---	---	---	---
Bottlebrush squirreltail	SIHY	---	---	5-10	1-4	---	1-5	---
Prairie junegrass	KOCR	---	---	5-10	---	---	---	---
Dropseed	SPORO	---	---	---	1-5	---	5-15	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-20	5-10	5-20	5-10
Native annual grasses	AAGG	---	---	---	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	5-10	5-15	4-10	5-10	3-10	2-5
Native annual forbs	AAFF	1-2	1-2	1-3	2-7	2-5	2-5	---
Wyoming big sagebrush	ARTRW*	15-20	15-20	---	20-30	---	15-20	10-20
Bitterbrush	PURSH	5-10	5-10	5-15	---	---	---	15-25
Nevada ephedra	EPNE	5-10	5-10	---	5-10	5-10	---	---
Fourwing saltbush	ATCA2	2-5	2-5	---	---	---	---	---
Mountain big sagebrush	ARTRV	---	---	10-20	---	---	---	---
Snowberry	SYMPH	---	---	2-5	---	---	---	---
Curlleaf mountainmahogany	CELE3	---	---	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	---	---	1-3	---	---	---	---
Bud sagebrush	ARSP5	---	---	---	---	2-5	5-10	---
Spiny menodora	MESP2	---	---	---	---	10-25	---	---
Bailey greasewood	SAVEB	---	---	---	---	5-10	---	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---	---
Shadscale	ATCO	---	---	---	---	2-5	---	---
Spiny hopsage	GRSP	---	---	---	---	---	5-10	---
Winterfat	EULA5	---	---	---	---	---	2-10	---
Rabbitbrush	CHRYS9	---	---	---	---	---	---	2-5
Other shrubs	SSSS	10-15	10-15	5-15	10-20	15-25	10-20	5-10
Singleleaf pinyon	PIMO	---	---	2-5	---	---	---	2-5
Utah juniper	JUOS	---	---	1-3	---	---	---	T-2
Site symbol		029X029N	029X029N	029X066N	029X010N	029X037N	029X049N	26X061N
Potential production (lb/acre):								
Favorable years		800	800	475	600	300	900	200
Normal years		600	600	375	400	200	600	150
Unfavorable years		400	400	200	200	100	300	100

Embankments, dikes, and levees: Severe—thin layer

(Cucamungo Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, small stones, depth to rock

Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines

Gravel: Improbable source—excess fines

Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Alcan, steep, soil—VIIs, nonirrigated; Alcan, very steep, soil—VIIs, nonirrigated; Cucamungo soil—VIIs, nonirrigated

Site symbol: Alcan, steep, soil—029X029N; Alcan, very steep, soil—029X029N

Woodland suitability group: Cucamungo soil—2r

780—Lyda-Ardivey-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,300 to 5,900 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Lyda very gravelly fine sandy loam, moist, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Zadvar very gravelly loamy sand, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—3 percent
Inclusion 3: Xeric Torriorthents, 2 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Lyda Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, spiny menodora
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B

Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, GP, GP-GM, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December to August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, spiny menodora
Inclusion 2: Position on landscape—upper part of fan piedmont remnants; distinctive present vegetation—black sagebrush, galleta
Inclusion 3: Position on landscape—drainageways at higher elevations; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 237)

Elements of Wildlife Habitat

Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lyda Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—large stones, seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Lyda soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

TABLE 237.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Lyda	Ardivey	Izo	1	2	3
Indian ricegrass	ORHY	5-20	5-20	5-10	5-20	5-10	2-5
Galleta	HIJA	5-10	5-10	---	5-10	5-20	1-3
Needlegrass	STIPA	---	---	---	---	5-15	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	2-6	5-10	3-8	5-10
Native annual forbs	AAFF	2-5	2-5	1-5	2-5	2-5	1-5
Spiny menodora	MESP2	10-30	10-30	---	10-30	---	---
Bailey greasewood	SAVEB	5-15	5-15	2-10	5-15	---	---
Shadscale	ATCO	5-15	5-15	---	5-15	---	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10	---
Nevada ephedra	EPNE	5-10	5-10	2-5	5-10	2-5	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---	2-5
Fourwing saltbush	ATCA2	---	---	5-15	---	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---	1-5
Cooper wolfberry	LYCO2	---	---	2-5	---	---	---
Black sagebrush	ARARN	---	---	---	---	20-25	---
Winterfat	EULA5	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-25
Site symbol		029X036N	029X036N	029X041N	029X036N	029X008N	029X009N
Potential production (lb/acre):							
Favorable years		400	400	500	400	700	700
Normal years		300	300	300	300	400	500
Unfavorable years		100	100	100	100	200	200

Site symbol: Lyda soil—029X036N; Ardivey soil—029X036N; Izo soil—029X041N

781—Lyda-Itme-Lathrop association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,200 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Lyda very gravelly fine sandy loam, 4 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Itme gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Lathrop very gravelly sandy loam, 4 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Itme very stony loamy sand, occasionally flooded, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Wardenot very gravelly sandy loam, moist, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent

Lyda Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, Nevada ephedra, Anderson wolfberry
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Spiny hopsage, fourwing saltbush, Nevada ephedra, horsebrush
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Sping menodora, Nevada ephedra, Anderson wolfberry, galleta
Typical profile:
0 to 5 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1
30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—washes; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 2: Position on landscape—fan-remnant side slopes, inset fans; distinctive present vegetation—spiny menodora, Anderson wolfberry

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 238)

Elements of Wildlife Habitat

Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Lyda Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones

TABLE 238.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Lyda	Itme	Lathrop	1	2
Indian ricegrass	ORHY	5-20	5-20	5-20	5-10	5-20
Galleta	HIJA	5-10	5-20	5-10	---	5-10
Other perennial grasses	PPGG	5-10	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	2-5	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	2-6	5-10
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	2-5
Spiny menodora	MESP2	10-30	---	10-30	---	10-30
Bailey greasewood	SAVEB	5-15	---	5-15	2-10	5-15
Shadscale	ATCO	5-15	---	5-15	---	5-15
Bud sagebrush	ARSP5	5-10	5-15	5-10	---	5-10
Nevada ephedra	EPNE	5-10	2-5	5-10	2-5	5-10
Spiny hopsage	GRSP	---	10-20	---	---	---
Anderson wolfberry	LYAN	---	5-15	---	---	---
Fremont dalea	DAFR	---	2-10	---	---	---
Nevada dalea	DAPO2	---	2-10	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	0-2	---	---	---
Site symbol		029X036N	029X016N	029X036N	029X041N	029X036N
Potential production (lb/acre):						
Favorable years		400	400	400	500	400
Normal years		300	300	300	300	300
Unfavorable years		100	200	100	100	100

Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Lyda soil—VIIs, nonirrigated; Itme soil—VIIs, nonirrigated; Lathrop soil—VIIs, nonirrigated

Site symbol: Lyda soil—029X036N; Itme soil—029X016N; Lathrop soil—029X036N

790—Handpah-Zadvar-Lyda association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 6,100 to 6,500 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Handpah gravelly fine sandy loam, 4 to 15 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—40 percent
Zadvar very gravelly sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—25 percent
Lyda very gravelly fine sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Xerollic Camborthids, 8 to 30 percent slopes (Xerollic Camborthids - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 3: Espint very gravelly loam, 4 to 30 percent slopes (Xerollic Haplargids - clayey, montmorillonitic, mesic, shallow)—2 percent

Handpah Soil

Position on landscape: Side slopes and summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, bluegrass
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2
3 to 10 inches—gravelly clay loam, gravelly loam, gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC; estimated AASHTO classification - A-6
10 to 18 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; slightly hard to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
18 to 24 inches—indurated
24 to 40 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Zadvar Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 5 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6
12 to 22 inches—cemented
22 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle, firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified

classification - GM, GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Lyda Soil

Position on landscape: Summits of fan piedmont remnants at lower elevations
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, galleta
Typical profile:
0 to 4 inches—very gravelly fine sandy loam; 5 to 20 percent cobbles and stones and 45 to 70 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 12 inches—very gravelly clay loam, very gravelly sandy clay loam; 10 to 25 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; hard, firm; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
12 to 14 inches—indurated
14 to 40 inches—cemented
Range in depth to indurated layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 2: Position on landscape—fan remnant side slopes; distinctive present vegetation—Wyoming big sagebrush, needlegrass
Inclusion 3: Position on landscape—rock pediment remnants adjacent to fan piedmonts; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 239)

Elements of Wildlife Habitat

Suitability of Handpah soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Zadvar soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Lyda soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Handpah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, soil blowing
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Zadvar Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Lyda Soil)
Suitability and limitations for the following uses:

TABLE 239.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Handpah	Zadvar	Lyda	1	2	3
Galleta	HIJA	5-15	5-20	5-10	1-3	5-15	5-15
Indian ricegrass	ORHY	5-10	5-10	5-20	2-5	5-10	5-10
Needlegrass	STIPA	2-10	5-15	---	---	2-10	5-10
Bottlebrush squirreltail	SIHY	1-5	---	---	---	1-5	1-4
Dropseed	SPORO	1-5	---	---	---	1-5	1-5
Basin wildrye	ELCI2	---	---	---	2-5	---	---
Other perennial grasses	PPGG	10-20	10-15	5-10	5-10	10-20	5-20
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	3-8	5-10	5-10	5-10	4-10
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	2-5	2-7
Wyoming big sagebrush	ARTRW*	15-20	---	---	---	15-20	20-30
Fourwing saltbush	ATCA2	5-10	---	---	---	5-10	---
Nevada ephedra	EPNE	2-5	2-5	5-10	1-5	2-5	5-10
Winterfat	EULAS	2-5	2-5	---	---	2-5	---
Spiny hopsage	GRSP	2-5	---	---	---	2-5	---
Black sagebrush	ARARN	---	20-25	---	---	---	---
Bud sagebrush	ARSP5	---	5-10	5-10	---	---	---
Spiny menodora	MESP2	---	---	10-30	---	---	---
Bailey greasewood	SAVEB	---	---	5-15	---	---	---
Shadscale	ATCO	---	---	5-15	---	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---
Other shrubs	SSSS	10-25	10-20	10-20	10-25	10-25	10-20
Site symbol		O29XO06N	O29XO08N	O29XO36N	O29XO09N	O29XO06N	O29XO10N
Potential production (lb/acre):							
Favorable years		800	700	400	700	800	600
Normal years		500	400	300	500	500	400
Unfavorable years		300	200	100	200	300	200

Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Handpah soil—VIIs, nonirrigated; Zadvar soil—VIIs, nonirrigated; Lyda soil—VIIs, nonirrigated
Site symbol: Handpah soil—029X006N; Zadvar soil—029X008N; Lyda soil—029X036N

791—Handpah-Veet association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 6,100 to 6,500 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Handpah gravelly fine sandy loam, 2 to 8 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—65 percent
Veet very gravelly sandy loam, 4 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents. 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Stewval very gravelly sandy loam, 15 to 30 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Zadvar very gravelly sandy loam, 4 to 15 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—4 percent

Handpah Soil

Pcsition on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2
3 to 10 inches—gravelly clay loam, gravelly loam, gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC; estimated AASHTO classification - A-6
10 to 18 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; slightly hard to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
18 to 24 inches—indurated
24 to 40 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Soil

Position on landscape: Inset fans and side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, needleandthread
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush
Inclusion 2: Position on landscape—rock pediments adjacent to fan piedmonts; distinctive present vegetation—black sagebrush, galleta
Inclusion 3: Position on landscape—fan piedmont remnants; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 240)

Elements of Wildlife Habitat

Suitability of Handpah soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Handpah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, soil blowing
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Handpah soil—VIIs, nonirrigated; Veet soil—VIIs, nonirrigated
Site symbol: Handpah soil—029X006N; Veet soil—029X049N

TABLE 240.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Handpah	Veet	1	2	3
Galleta	HIJA	5-15	5-25	1-3	5-15	5-20
Indian ricegrass	ORHY	5-10	5-15	2-5	5-10	5-10
Needlegrass	STIPA	2-10	5-15	---	2-10	5-15
Bottlebrush squirreltail	SIHY	1-5	1-5	---	1-5	---
Dropseed	SPORO	1-5	5-15	---	---	---
Basin wildrye	ELCI2	---	---	2-5	---	---
Bluegrass	POA++	---	---	---	2-10	---
Other perennial grasses	PPGG	10-20	5-20	5-10	10-15	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	3-10	5-10	5-10	3-8
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	2-5
Wyoming big sagebrush	ARTRW*	15-20	15-20	---	---	---
Fourwing saltbush	ATCA2	5-10	---	---	---	---
Nevada ephedra	EPNE	2-5	---	1-5	5-10	2-5
Winterfat	EULA5	2-5	2-10	---	2-5	2-5
Spiny hopsage	GRSP	2-5	5-10	---	---	---
Bud sagebrush	ARSP5	---	5-10	---	2-5	5-10
Basin big sagebrush	ARTRT*	---	---	10-20	---	---
Rubber rabbitbrush	CHNA2	---	---	2-5	---	---
Littleleaf horsebrush	TEGL	---	---	1-5	---	---
Black sagebrush	ARARN	---	---	---	15-20	20-25
Other shrubs	SSSS	10-25	10-20	10-25	10-20	10-20
Site symbol		029X006N	029X049N	029X009N	029X014N	029X008N
Potential production (lb/acre):						
Favorable years		800	900	700	500	700
Normal years		500	600	500	300	400
Unfavorable years		300	300	200	100	200

792—Handpah-Breko-Veet association

Map Unit Setting

Position on landscape: Fan piedmonts, alluvial fans
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Handpah very cobbly sandy loam, 8 to 15 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—45 percent
Breko gravelly sandy loam, 4 to 15 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Veet very gravelly sandy loam, 4 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Wardenot very gravelly loamy sand, moist, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Durixerollic Haplargids - 8 to 30 percent slopes (Durixerollic Haplargids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Xerollic Durargids, 2 to 8 percent slopes (Xerollic Durargids - fine, montmorillonitic, mesic, shallow)—2 percent

Handpah Soil

Position on landscape: Upper part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 3 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
3 to 10 inches—gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC; estimated AASHTO classification - A-6
10 to 18 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); massive; slightly hard to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
18 to 24 inches—indurated
24 to 40 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Breko Soil

Position on landscape: Alluvial fans, shoulders of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 6 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); platy structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
6 to 24 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
24 to 60 inches or more—extremely gravelly sandy loam, extremely gravelly coarse sandy loam; 75 to 90 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic

(SAR of less than 2); estimated Unified classification - GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, spiny hopsage, galleta, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways, inset fans; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush
Inclusion 2: Position on landscape—lower part of fan piedmonts; distinctive present vegetation—shadscale, galleta
Inclusion 3: Position on landscape—fan-remnant side slopes; distinctive present vegetation—Wyoming big sagebrush
Inclusion 4: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—black sagebrush
Inclusion of minor extent: Position on landscape—hills, rock pediments; distinctive present vegetation—Wyoming big sagebrush, desert bitterbrush, bottlebrush squirreltail

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 241)

Elements of Wildlife Habitat

Suitability of Handpah soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Breko soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Handpah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Breko Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing

TABLE 241.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Handpah	Breko	Veet	1	2	3	4
Galleta	HIJA	5-15	5-15	5-25	1-3	5-10	5-15	5-20
Indian ricegrass	ORHY	5-10	5-10	5-15	2-5	5-20	5-10	5-10
Needlegrass	STIPA	2-10	2-10	5-15	---	---	2-10	5-15
Bottlebrush squirreltail	SIHY	1-5	1-5	1-5	---	---	1-5	---
Dropseed	SPORO	1-5	1-5	5-15	---	---	1-5	---
Basin wildrye	ELCI2	---	---	---	2-5	---	---	---
Other perennial grasses	PPGG	10-20	10-20	5-20	5-10	5-10	10-20	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	3-10	5-10	5-10	5-10	3-8
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	2-5	2-5	2-5
Wyoming big sagebrush	ARTRW*	15-20	15-20	15-20	---	---	15-20	---
Fourwing saltbush	ATCA2	5-10	5-10	---	---	---	5-10	---
Nevada ephedra	EPNE	2-5	2-5	---	1-5	5-10	2-5	2-5
Winterfat	EULA5	2-5	2-5	2-10	---	---	2-5	2-5
Spiny hopsage	GRSP	2-5	2-5	5-10	---	---	2-5	---
Bud sagebrush	ARSP5	---	---	5-10	---	5-10	---	5-10
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---	---
Spiny menodora	MESP2	---	---	---	---	10-30	---	---
Bailey greasewood	SAVEB	---	---	---	---	5-15	---	---
Shadscale	ATCO	---	---	---	---	5-15	---	---
Black sagebrush	ARARN	---	---	---	---	---	---	20-25
Other shrubs	SSSS	10-25	10-2	10-20	10-25	10-20	10-25	10-20
Site symbol		029X006N	029X006N	029X049N	029X009N	029X036N	029X006N	029X008N
Potential production (lb/acre):								
Favorable years		800	800	900	700	400	800	700
Normal years		500	500	600	500	300	500	400
Unfavorable years		300	300	300	200	100	300	200

Shallow excavations: Moderate—slope
Local roads and streets: Moderate—frost action, slope, shrink-swell
Roadfill: Good
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Veet Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Improbable source—seepage

Interpretive Groups

Capability classification: Handpah soil—VIIs, nonirrigated; Breko soil—VIIc, nonirrigated; Veet soil—VIIs, nonirrigated
Site symbol: Handpah soil—029X006N; Breko soil—029X006N; Veet soil—029X049N

793—Handpah very gravelly loam, 2 to 15 percent slopes

Map Unit Setting

Position on landscape: Fan remnants
Elevation: 5,500 to 6,300 feet
Climatic data (average annual):
Precipitation—about 9 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Handpah very gravelly loam, 2 to 15 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—85 percent
Contrasting inclusions as follows:
Inclusion 1: Haploxerollic Durargids, 2 to 4 percent slopes (Haploxerollic Durargids - fine, montmorillonitic, mesic)—8 percent
Inclusion 2: Breko very gravelly sandy loam, 15 to 30 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Xeric Torriorthents, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent
Inclusion 4: Xerollic Durargids, 2 to 8 percent slopes (Xerollic Durargids - loamy-skeletal, mixed, mesic, shallow)—1 percent

Handpah Soil

Position on landscape: Summits of fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
3 to 10 inches—gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC; estimated AASHTO classification - A-6
10 to 18 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; slightly hard to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
18 to 24 inches—indurated
24 to 40 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan remnants; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra, galleta
Inclusion 2: Position on landscape—lower part of fan remnant side slopes and adjacent inset fans; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra, galleta
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush
Inclusion 4: Position on landscape—fan remnants; distinctive present vegetation—black sagebrush, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 242)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 242.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name	Inclusion number--			
		Handpah	1	2	3	4
Galleta	HIJA	5-15	5-15	5-15	1-3	5-20
Indian ricegrass	ORHY	5-10	5-10	5-10	2-5	5-10
Needlegrass	STIPA	2-10	2-10	2-10	---	5-15
Bottlebrush squirreltail	SIHY	1-5	1-5	1-5	---	---
Dropseed	SPORO	1-5	1-5	1-5	---	---
Basin wildrye	ELCI2	---	---	---	2-5	---
Other perennial grasses	PPGG	10-20	10-20	10-20	5-10	10-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	5-10	3-8
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	2-5
Wyoming big sagebrush	ARTRW*	15-20	15-20	15-20	---	---
Fourwing saltbush	ATCA2	5-10	5-10	5-10	---	---
Nevada ephedra	EPNE	2-5	2-5	2-5	1-5	2-5
Winterfat	EULA5	2-5	2-5	2-5	---	2-5
Spiny hopsage	GRSP	2-5	2-5	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---
Black sagebrush	ARARN	---	---	---	---	20-25
Bud sagebrush	ARSP5	---	---	---	---	5-10
Other shrubs	SSSS	10-25	10-25	10-25	10-25	10-20
Site symbol		029X006N	029X006N	029X006N	029X009N	029X008N
Potential production (lb/acre):						
Favorable years		800	800	800	700	700
Normal years		500	500	500	500	400
Unfavorable years		300	300	300	200	200

Interpretive Groups

Site symbol: 029X006N

Capability classification: VIIs, nonirrigated

794—Handpah-Tomel-Breko association

Map Unit Setting

Position on landscape: Fan piedmonts, alluvial fans
Elevation: 5,800 to 6,400 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Handpah very gravelly loam, 4 to 15 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—40 percent
Tomel very gravelly sandy loam, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Breko gravelly sandy loam, 4 to 8 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Advokay gravelly coarse sandy loam, 4 to 8 percent slopes (Typic Haplargids - loamy, mixed, mesic, shallow)—7 percent
Inclusion 2: Ardivey very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Blacktop very gravelly fine sandy loam, 8 to 15 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—3 percent
Inclusion 4: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Handpah Soil

Position on landscape: Upper part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
3 to 10 inches—gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC; estimated AASHTO classification - A-6
10 to 18 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; slightly hard to brittle, very friable to brittle; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
18 to 24 inches—indurated
24 to 40 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Tomel Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, low rabbitbrush, bud sagebrush
Typical profile:
0 to 3 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 19 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
19 to 26 inches—indurated
26 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 5 percent cobbles and stones and 65 to 85 percent pebbles (by

weight); massive; very hard, firm; strongly alkaline (pH 9.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Breko Soil

Position on landscape: Alluvial fans
Parent material: Mixed alluvium
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, Nevada ephedra
Typical profile:

0 to 6 inches—gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); platy structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2

6 to 24 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2

24 to 60 inches or more—extremely gravelly sandy loam, extremely gravelly coarse sandy loam; 75 to 90 percent pebbles (by weight); massive; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—hills adjacent to fan piedmonts; distinctive present vegetation—shadscale, galleta
Inclusion 2: Position on landscape—lower part of fan piedmont remnants and adjacent inset fans; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 3: Position on landscape—hillsides adjacent to fan piedmonts; distinctive present vegetation—sparse shadscale, Indian ricegrass
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 243)

Elements of Wildlife Habitat

Suitability of Handpah soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Tomel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Breko soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Handpah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Tomel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones

TABLE 243.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Handpah	Tomel	Breko	1	2	3	4
Galleta	HIJA	5-15	10-25	5-15	10-25	10-25	---	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10	2-5	5-10
Needlegrass	STIPA	2-10	2-5	2-10	2-5	2-5	---	---
Bottlebrush squirreltail	SIHY	1-5	2-5	1-5	2-5	2-5	1-2	---
Dropseed	SPORO	1-5	---	1-5	---	---	---	---
King desertgrass	BLKI	---	---	---	---	---	1-2	---
Other perennial grasses	PPGG	10-20	5-15	10-20	5-15	5-15	1-5	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	4-10	5-10	4-10	4-10	2-5	2-6
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	1-5	1-5	1-5
Wyoming big sagebrush	ARTRW*	15-20	---	15-20	---	---	---	---
Fourwing saltbush	ATCA2	5-10	---	5-10	---	---	---	5-15
Nevada ephedra	EPNE	2-5	1-5	2-5	1-5	1-5	---	2-5
Winterfat	EULA5	2-5	5-10	2-5	5-10	5-10	---	---
Spiny hopsage	GRSP	2-5	---	2-5	---	---	---	---
Shadscale	ATCO	---	10-25	---	10-25	10-25	40-60	---
Bailey greasewood	SAVEB	---	5-10	---	5-10	5-10	10-15	2-10
Bud sagebrush	ARSP5	---	5-10	---	5-10	5-10	2-5	---
Nevada dalea	DAPO2	---	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	---	5-10
Other shrubs	SSSS	10-25	10-20	10-25	10-20	10-20	5-15	10-20
Joshua-tree	YUBR	---	1-2	---	1-2	1-2	---	---
Site symbol		029X006N	029X017N	029X006N	029X017N	029X017N	029X033N	029X041N
Potential production (lb/acre):								
Favorable years		800	350	800	350	350	100	500
Normal years		500	250	500	250	250	50	300
Unfavorable years		300	100	300	100	100	25	100

Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage, excess salt

(Breko Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing
Shallow excavations: Slight

Local roads and streets: Moderate—frost action, shrink-swell
Roadfill: Good
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Handpah soil—VIIs, nonirrigated; Tomel soil—VIIs, nonirrigated; Breko soil—VIIc, nonirrigated
Site symbol: Handpah soil—029X006N; Tomel soil—029X017N; Breko soil—029X006N

800—Garhill-Upspring-Rock outcrop association

Map Unit Setting

Position on landscape: Mesas
Elevation: 4,400 to 5,700 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 56 degrees F
Frost-free season—about 140 days

Composition

Garhill very stony loamy fine sand, 2 to 8 percent slopes (Typic Durorthids - loamy, mixed, mesic, shallow)—50 percent
Upspring very stony fine sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—20 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Blacktop very gravelly sandy loam, 30 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—6 percent
Inclusion 2: Upspring very stony sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—5 percent
Inclusion 3: Typic Torriorthents, 2 to 15 percent slopes (Typic Torriorthents - loamy-skeletal, mixed, thermic)—4 percent

Garhill Soil

Position on landscape: Summits of mesas
Parent material: Kind—residuum, colluvium; source—basalt
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, spiny menodora, spiny horsebrush, bud sagebrush, needlegrass
Typical profile:
0 to 2 inches—very stony loamy fine sand; 20 to 30 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
2 to 5 inches—fine sandy loam; 0 to 5 percent cobbles and stones and 10 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
5 to 11 inches—gravelly loam, gravelly sandy loam; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SM-SC, ML, CL-ML; estimated AASHTO classification - A-2, A-4
11 to 20 inches—indurated
20 inches—unweathered bedrock
Range in depth to indurated layer: 7 to 14 inches
Range in depth to bedrock: 12 to 30 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Upspring Soil

Position on landscape: Side slopes of mesas
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Creosotebush, white bursage, shadscale, Nevada ephedra, galleta
Typical profile:
0 to 2 inches—very stony fine sandy loam; 25 to 60 percent cobbles and stones and 35 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
2 to 12 inches—very gravelly fine sandy loam, extremely gravelly fine sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
12 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders and side slopes with some associated rubble land on mesas
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded side slopes of mesas; distinctive present vegetation—sparse shadscale
Inclusion 2: Position on landscape—side slopes of mesas; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 3: Position on landscape—inset fans adjacent to mesas; distinctive present vegetation—shadscale, creosotebush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 244)

Elements of Wildlife Habitat

Suitability of Garhill soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Akela soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Garhill Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cemented pan, depth to rock
Local roads and streets: Severe—cemented pan, depth to rock
Roadfill: Poor—cemented pan, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Upspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—thin layer
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—thin layer, seepage

Interpretive Groups

Capability classification: Garhill soil—VIIs, nonirrigated; Upspring soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Garhill soil—029X036N; Upspring soil—030X044N

TABLE 244.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Garhill	Upspring	Rock outcrop	1	2	3
Indian ricegrass	ORHY	5-20	1-5	---	2-5	1-5	2-5
Galleta	HIJA	5-10	---	---	---	---	---
Needlegrass	STIPA	---	3-5	---	---	3-5	2-5
Bottlebrush squirreltail	SIHY	---	1-2	---	1-2	1-2	1-3
King desertgrass	BLKI	---	---	---	1-2	---	---
Other perennial grasses	PPGG	5-10	2-5	---	1-5	2-5	2-7
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	2-5
Perennial forbs	PPFF	5-10	5-7	---	2-5	5-7	3-10
Native annual forbs	AAFF	2-5	3-6	---	1-5	3-6	3-7
Spiny menodora	MESP2	10-30	2-5	---	---	2-5	1-5
Bailey greasewood	SAVEB	5-15	---	---	10-15	---	---
Shadscale	ATCO	5-15	20-40	---	40-60	20-40	5-25
Bud sagebrush	ARSP5	5-10	---	---	2-5	---	---
Nevada ephedra	EPNE	5-10	5-10	---	---	5-10	3-8
Anderson wolfberry	LYAN	---	5-10	---	---	5-10	5-10
White bursage	FRDU	---	2-5	---	---	2-5	5-10
Nevada dalea	DAPO2	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---
Creosotebush	LADI2	---	---	---	---	---	5-10
Bud sagebrush	ARSP3	---	---	---	---	---	3-10
Other shrubs	SSSS	10-20	10-20	---	5-15	10-20	10-25
Site symbol		029X036N	030X044N	---	029X033N	030X044N	030X061N
Potential production (lb/acre):							
Favorable years		400	250	---	100	250	300
Normal years		300	150	---	50	150	180
Unfavorable years		100	50	---	25	50	80

811—Slatery-Rodad association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,500 to 6,200 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Slatery very gravelly loam, 15 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—45 percent
Rodad very channery loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—9 percent
Inclusion 2: Weepah very stony sandy loam, 30 to 75 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—4 percent
Inclusion 3: Theriot very stony loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—2 percent

Slatery Soil

Position on landscape: Mainly south- and west-facing slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rodad Soil

Position on landscape: Mainly north- and east-facing slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent channers or pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small ridges and peaks on mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—upper part of mountainsides, mainly north aspects; distinctive present vegetation—Wyoming big sagebrush, galleta
Inclusion 3: Position on landscape—mountainsides; distinctive present vegetation—shadscale, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 245)

TABLE 245.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Slatery	Rodad	1	2	3
Galleta	HIJA	10-20	5-20	---	5-15	5-20
Indian ricegrass	ORHY	2-5	5-15	---	5-10	5-15
Needlegrass	STIPA	5-10	5-10	---	2-10	5-10
Bottlebrush squirreltail	SIHY	---	2-5	---	1-5	2-5
Bluegrass	POA++	---	---	---	2-10	---
Other perennial grasses	PPGG	5-10	5-10	---	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	5-10	5-10
Native annual forbs	AAFF	2-5	2-5	---	1-5	2-5
Nevada ephedra	EPNE	5-10	2-5	---	5-10	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	2-5	2-5
Spiny menodora	MESP2	10-25	---	---	---	---
Bailey greasewood	SAVEB	5-10	5-15	---	---	5-15
Anderson wolfberry	LYAN	5-10	---	---	---	---
Shadscale	ATCO	2-5	15-25	---	---	15-25
Black sagebrush	ARARN	---	---	---	15-20	---
Winterfat	EULA5	---	---	---	2-5	---
Other shrubs	SSSS	15-25	10-20	---	10-20	10-20
Site symbol		O29XO37N	O29XO22N	---	O29XO14N	O29XO22N
Potential production (lb/acre):						
Favorable years		300	300	---	500	300
Normal years		200	200	---	300	200
Unfavorable years		100	100	---	100	100

Elements of Wildlife Habitat

Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Slatery soil—VIIs, nonirrigated; Rodad soil—VIIs, nonirrigated
Site symbol: Slatery soil—029X037N; Rodad soil—029X022N

812—Slatery-Entero-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,600 to 6,300 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Slatery very gravelly loam, 15 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—45 percent
Entero very gravelly loam 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Theriot very stony loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—8 percent
Inclusion 2: Ubehebe very gravelly loam, 30 to 75 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Typic Torriorthents, 4 to 15 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—2 percent

Slatery Soil

Position on landscape: South- and west-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta, Anderson wolfberry
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Entero Soil

Position on landscape: North-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, galleta, cliffrose
Typical profile:
0 to 2 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid

Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks and ridges on hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—foothills, mountainsides; distinctive present vegetation—shadscale, galleta
Inclusion 2: Position on landscape—upper part of north-facing mountainsides; distinctive present vegetation—singleleaf pinyon, cliffrose
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 246)

Elements of Wildlife Habitat

Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Slatery soil—VIIs, nonirrigated; Entero soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Slatery soil—029X037N; Entero soil—029X010N

TABLE 246.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Slatery	Entero	Rock outcrop	1	2	3
Galleta	HIJA	10-20	5-15	---	5-20	---	1-3
Indian ricegrass	ORHY	2-5	5-10	---	5-15	2-5	2-5
Needlegrass	STIPA	5-10	5-10	---	5-10	5-15	---
Bottlebrush squirreltail	SIHY	---	1-4	---	2-5	5-15	---
Dropseed	SPORO	---	1-5	---	---	---	---
Bluegrass	POA++	---	---	---	---	10-20	---
Muttongrass	POFE	---	---	---	---	2-5	---
Needleandthread	STCO4	---	---	---	---	2-5	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-20	---	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	---	1-5
Perennial forbs	PPFF	5-10	4-10	---	5-10	5-15	5-10
Native annual forbs	AAFF	2-5	2-7	---	2-5	1-3	1-5
Nevada ephedra	EPNE	5-10	5-10	---	2-5	---	1-5
Bud sagebrush	ARSP5	2-5	---	---	2-5	---	---
Spiny menodora	MESP2	10-25	---	---	---	---	---
Bailey greasewood	SAVEB	5-10	---	---	5-15	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Shadscale	ATCO	2-5	---	---	15-25	---	---
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---	---
Black sagebrush	ARARN	---	---	---	---	15-25	---
Bitterbrush	PURSH	---	---	---	---	5-10	---
Green ephedra	EPVI	---	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	15-25	10-20	---	10-20	5-10	10-25
Singleleaf pinyon	PIMO	---	---	---	---	5-10	---
Utah juniper	JUOS	---	---	---	---	5-10	---
Site symbol		029X037N	029X010N	---	029X022N	029X069N	029X009N
Potential production (lb/acre):							
Favorable years		300	600	---	300	350	700
Normal years		200	400	---	200	275	500
Unfavorable years		100	200	---	100	150	200

813—Slatery very gravelly loam, 8 to 30 percent slopes

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,800 to 6,600 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Slatery very gravelly loam, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—85 percent
Contrasting inclusions as follows—
Inclusion 1: Weepah very gravelly fine sandy loam, 8 to 30 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 2: Blappert very gravelly coarse sandy loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal mixed, mesic, shallow)—5 percent
Inclusion 3: Itme very stony loamy sand, occasionally flooded, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Slatery Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, galleta, Anderson wolfberry, Nevada ephedra, bud sagebrush, desert needlegrass
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of hillsides and mountainsides; distinctive present vegetation—black sagebrush, green ephedra
Inclusion 2: Position on landscape—stable areas on hillsides and mountainsides; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—washes; distinctive present vegetation—burrobrush, fourwing saltbush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 247)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

TABLE 247.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name	Inclusion number--		
		Slatery	1	2	3
Galleta	HIJA	10-20	5-15	10-20	---
Indian ricegrass	ORHY	2-5	5-10	2-5	5-10
Needlegrass	STIPA	5-10	2-10	5-10	---
Bluegrass	POA++	---	2-10	---	---
Bottlebrush squirreltail	SIHY	---	1-5	---	---
Other perennial grasses	PPGG	5-10	10-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	5-10	5-10	2-6
Native annual forbs	AAFF	2-5	1-5	2-5	1-5
Nevada ephedra	EPNE	5-10	5-10	5-10	2-5
Bud sagebrush	ARSP5	2-5	2-5	2-5	---
Spiny menodora	MESP2	10-25	---	10-25	---
Bailey greasewood	SAVEB	5-10	---	5-10	2-10
Anderson wolfberry	LYAN	5-10	---	5-10	---
Shadscale	ATCO	2-5	---	2-5	---
Black sagebrush	ARARN	---	15-20	---	---
Winterfat	EULA5	---	2-5	---	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	15-25	10-20	15-25	10-20
Site symbol		029X037N	029X014N	029X037N	029X041N
Potential production (lb/acre):					
Favorable years		300	500	300	500
Normal years		200	300	200	300
Unfavorable years		100	100	100	100

Interpretive Groups

Site symbol: 029X037N

Capability classification: VIIs, nonirrigated

820—Thike-Alcan association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 6,000 to 7,000 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 51 degrees F
Frost-free season—about 110 days

Composition

Thike very cobbly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—50 percent
Alcan very gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—7 percent
Inclusion 2: Xeric Torriorthents, 30 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—4 percent
Inclusion 3: Aridic Argixerolls, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—4 percent

Thike Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Sandberg bluegrass, green ephedra, needlegrass, galleta
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 8 inches—very cobbly loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam; 25 to 55 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
8 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Alcan Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, desert bitterbrush, green ephedra, galleta, needlegrass
Typical profile:
0 to 2 inches—very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 13 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
13 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.7 to 1.5 inches
Water supplying capacity: 8 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—eroded hillsides and mountainsides; distinctive present vegetation—Wyoming big sagebrush, green ephedra, galleta
Inclusion 3: Position on landscape—upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 248)

Elements of Wildlife Habitat

Suitability of Thike soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Alcan soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Thike Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, large stones, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Alcan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Thike soil—VIIs, nonirrigated; Alcan soil—VIIs, nonirrigated
Site symbol: Thike soil—029X010N; Alcan soil—029X029N

TABLE 248.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Thike	Alcan	1	2	3
Galleta	HIJA	5-15	15-20	---	5-15	---
Needlegrass	STIPA	5-10	5-20	---	5-10	5-10
Indian ricegrass	ORHY	5-10	2-5	---	5-10	1-5
Bottlebrush squirreltail	SIHY	1-4	---	---	1-4	1-5
Dropseed	SPORO	1-5	---	---	1-5	---
Purple threeawn	ARPU9	---	5-10	---	---	---
Bluegrass	POA++	---	2-5	---	---	10-20
Prairie junegrass	KOCR	---	---	---	---	5-10
Other perennial grasses	PPGG	5-20	5-10	---	5-20	5-15
Native annual grasses	AAGG	1-5	---	---	1-5	1-3
Perennial forbs	PPFF	4-10	5-10	---	4-10	5-10
Native annual forbs	AAFF	2-7	1-2	---	2-7	1-5
Wyoming big sagebrush	ARTRW*	20-30	15-20	---	20-30	10-20
Nevada ephedra	EPNE	5-10	5-10	---	5-10	---
Bitterbrush	PURSH	---	5-10	---	---	5-10
Fourwing saltbush	ATCA2	---	2-5	---	---	---
Serviceberry	AMELA	---	---	---	---	1-5
Curlleaf mountainmahogany	CELE3	---	---	---	---	1-5
Green ephedra	ERVI	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-15	---	10-20	10-20
Singleleaf pinyon	PIMO	---	---	---	---	2-5
Utah juniper	JUOS	---	---	---	---	1-4
Site symbol		029X010N	029X029N	---	029X010N	029X065N
Potential production (lb/acre):						
Favorable years		600	800	---	600	425
Normal years		400	600	---	400	350
Unfavorable years		200	400	---	200	200

821—Thike-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 5,800 to 7,200 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 52 degrees F
Frost-free season—about 110 days

Composition

Thike very cobbly sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Thike very cobbly sandy loam, 50 to 75 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—25 percent
Rock outcrop—25 percent
Contrasting inclusions as follows—
Inclusion 1: Xerollic Haplargids, 30 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Xeric Torriorthents - 50 to 75 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—4 percent
Inclusion 3: Alcan very gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—3 percent
Inclusion 4: Aridic Argixerolls, 30 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—2 percent

Thike, Steep, Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Sandberg bluegrass, green ephedra, needlegrass, galleta
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 8 inches—very cobbly loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam; 25 to 55 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
8 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Thike, Very Steep, Soil

Position on landscape: Mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, Sandberg bluegrass, green ephedra, needlegrass, Nevada ephedra
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 8 inches—very cobbly loam, extremely cobbly sandy clay loam, extremely gravelly coarse sandy loam; 25 to 55 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
8 inches—unweathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Very rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Mountains
Slope features: Length—short; shape—convex
Kind of rock: Granite
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—foot slopes of mountains; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 2: Position on landscape—eroded areas on mountains; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 3: Position on landscape—upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Inclusion 4: Position on landscape—hills, mountains; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 249)

Elements of Wildlife Habitat

Suitability of Thike, steep, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Thike, very steep, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Thike, Steep, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Thike, Very Steep, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, large stones, slope
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Thike, steep, soil—VIIs, nonirrigated; Thike, very steep, soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Thike, steep, soil—029X010N; Thike, very steep, soil—029X010N

TABLE 249.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Thike, steep	Thike, very steep	Rock outcrop	1	2	3	4
Galleta	HIJA	5-15	5-15	---	1-3	5-15	15-20	---
Needlegrass	STIPA	5-10	5-10	---	---	5-10	5-20	5-10
Indian ricegrass	ORHY	5-10	5-10	---	2-5	5-10	2-5	1-5
Bottlebrush squirreltail	SIHY	1-4	1-4	---	---	1-4	---	1-5
Dropseed	SPORO	1-5	1-5	---	---	1-5	---	---
Basin wildrye	ELCI2	---	---	---	2-5	---	---	---
Purple threeawn	ARPU9	---	---	---	---	---	5-10	---
Bluegrass	POA++	---	---	---	---	---	2-5	10-20
Prairie junegrass	KOCR	---	---	---	---	---	---	5-10
Other perennial grasses	PPGG	5-20	5-20	---	5-10	5-20	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	---	1-3
Perennial forbs	PPFF	4-10	4-10	---	5-10	4-10	5-10	5-10
Native annual forbs	AAFF	2-7	2-7	---	1-5	2-7	1-2	1-5
Wyoming big sagebrush	ARTRW*	20-30	20-30	---	---	20-30	15-20	10-20
Nevada ephedra	EPNE	5-10	5-10	---	1-5	5-10	5-10	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---	---	---
Bitterbrush	PURSH	---	---	---	---	---	5-10	5-10
Fourwing saltbush	ATCA2	---	---	---	---	---	2-5	---
Serviceberry	AMELA	---	---	---	---	---	---	1-5
Curlleaf mountainmahogany	CELE3	---	---	---	---	---	---	1-5
Green ephedra	ERVI	---	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	---	10-25	10-20	10-15	10-20
Singleleaf pinyon	PIMO	---	---	---	---	---	---	2-5
Utah juniper	JUOS	---	---	---	---	---	---	1-4
Site symbol		029X010N	029X010N	---	029X009N	029X010N	029X029N	029X065N
Potential production (lb/acre):								
Favorable years		600	600	---	700	600	800	425
Normal years		400	400	---	500	400	600	350
Unfavorable years		200	200	---	200	200	400	200

830—Yermo-Arizo association

Map Unit Setting

Position on landscape: Inset fans, washes
Elevation: 4,100 to 4,700 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 210 days

Composition

Yermo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—55 percent
Arizo very gravelly loamy sand, occasionally flooded, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—20 percent
Arizo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Skelon very gravelly sandy loam, 2 to 4 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—4 percent
Inclusion 2: Scottcas very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—3 percent
Inclusion 3: Upspring extremely cobbly sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—3 percent

Yermo Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 5 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
6 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo, Occasionally Flooded, Soil

Position on landscape: Washes
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, creosotebush, white bursage
Typical profile:
0 to 6 inches—very gravelly loamy sand; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly sandy loam; 10 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—March to September
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors surface layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo, Nonflooded, Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth

Dominant present vegetation: Creosotebush, white bursage, shadscale, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sandy loam to extremely gravelly loamy sand; 5 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors surface layer): K value—0.17; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan remnants; distinctive present vegetation—shadscale, creosotebush, white bursage
Inclusion 2: Position on landscape—summits of fan remnants; distinctive present vegetation—shadscale, Anderson wolfberry
Inclusion 3: Position on landscape—side slopes of fan remnants; distinctive present vegetation—creosotebush, white bursage, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 250)

Elements of Wildlife Habitat

Suitability of Yermo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Arizo, occasionally flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Arizo, nonflooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yermo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Slight
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight
(Arizo, Occasionally Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Arizo, Nonflooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Yermo soil—VIIs, nonirrigated; Arizo, occasionally flooded, soil—VIIw, nonirrigated; Arizo, nonflooded, soil—VIIs, nonirrigated
Site symbol: Yermo soil—030X061N; Arizo, occasionally flooded, soil—030X076N; Arizo, nonflooded, soil—030X061N

TABLE 250.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Yermo	Arizo, occasionally flooded	Arizo, nonflooded	1	2	3
Needlegrass	STIPA	2-5	1-5	2-5	2-5	2-5	3-5
Indian ricegrass	ORHY	2-5	1-5	2-5	2-5	2-5	1-5
Bottlebrush squirreltail	SIHY	1-3	---	1-3	1-3	1-3	1-2
Other perennial grasses	PPGG	2-7	5-10	2-7	2-7	2-7	2-5
Native annual grasses	AAGG	2-5	1-5	2-5	2-5	2-5	1-5
Perennial forbs	PPFF	3-10	2-8	3-10	3-10	3-10	5-7
Native annual forbs	AAFF	3-7	1-5	3-7	3-7	3-7	3-6
Shadscale	ATCO	5-25	---	5-25	5-25	5-25	20-40
Anderson wolfberry	LYAN	5-10	---	5-10	5-10	5-10	5-10
Creosotebush	LADI2	5-10	15-25	5-10	5-10	5-10	---
White bursage	FRDU	5-10	5-10	5-10	5-10	5-10	2-5
Bud sagebrush	ARSP3	3-10	---	3-10	3-10	3-10	---
Nevada ephedra	EPNE	3-8	---	3-8	3-8	3-8	5-10
Spiny menodora	MESP2	1-5	---	1-5	1-5	1-5	2-5
Cattle saltbush	ATPO	---	2-5	---	---	---	---
White burrobrush	HYSA	---	2-5	---	---	---	---
Other shrubs	SSSS	10-25	20-40	10-25	10-25	10-25	10-20
Site symbol		030X061N	030X076N	030X061N	030X061N	030X061N	030X044N
Potential production (lb/acre):							
Favorable years		300	600	300	300	300	250
Normal years		180	400	180	180	180	150
Unfavorable years		80	200	80	80	80	50

831—Yermo-Skelon association

Map Unit Setting

Position on landscape: Dissected alluvial fans, fan piedmonts
Elevation: 4,600 to 5,000 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 210 days

Composition

Yermo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—60 percent
Skelon very gravelly sandy loam, 2 to 4 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Arizo very gravelly loamy sand, occasionally flooded, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—6 percent
Inclusion 2: Arizo very gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—6 percent
Inclusion 3: Scottcas very gravelly sandy loam, 2 to 4 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—3 percent

Yermo Soil

Position on landscape: Inset fans, dissected alluvial fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, creosotebush, white bursage, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 5 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
6 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Skelon Soil

Position on landscape: Dissected fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, creosotebush, white bursage, Anderson wolfberry
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 23 inches—stratified very gravelly fine sandy loam to very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
23 to 44 inches—indurated
Range in depth to indurated layer: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—washes; distinctive present vegetation—burrobrush, creosotebush

Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—creosotebush, white bursage, shadscale

Inclusion 3: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—creosotebush, white bursage, shadscale, ephedra

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 251)

Elements of Wildlife Habitat

Suitability of Yermo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Skelon soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yermo Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones

TABLE 251.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Yermo	Skelon	1	2	3
Needlegrass	STIPA	2-5	2-5	1-5	2-5	2-5
Indian ricegrass	ORHY	2-5	2-5	1-5	2-5	2-5
Bottlebrush squirreltail	SIHY	1-3	1-3	---	1-3	1-3
Other perennial grasses	PPGG	2-7	2-7	5-10	2-7	2-7
Native annual grasses	AAGG	2-5	2-5	1-5	2-5	2-5
Perennial forbs	PPFF	3-10	3-10	2-8	3-10	3-10
Native annual forbs	AAFF	3-7	3-7	1-5	3-7	3-7
Shadscale	ATCO	5-25	5-25	---	5-25	5-25
Anderson wolfberry	LYAN	5-10	5-10	---	5-10	5-10
Creosotebush	LADI2	5-10	5-10	15-25	5-10	5-10
White bursage	FRDU	5-10	5-10	5-10	5-10	5-10
Bud sagebrush	ARSP3	3-10	3-10	---	3-10	3-10
Nevada ephedra	EPNE	3-8	3-8	---	3-8	3-8
Spiny menodora	MESP2	1-5	1-5	---	1-5	1-5
Cattle saltbush	ATPO	---	---	2-5	---	---
White burrobrush	HYSA	---	---	2-5	---	---
Other shrubs	SSSS	10-25	10-25	20-40	10-25	10-25
Site symbol		030X061N	030X061N	030X076N	030X061N	030X061N
Potential production (lb/acre):						
Favorable years		300	300	600	300	300
Normal years		180	180	400	180	180
Unfavorable years		80	80	200	80	80

Shallow excavations: Slight
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight

(Skelon Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—small stones
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Yermo soil—VIIs, nonirrigated; Skelon soil—VIIs, nonirrigated
Site symbol: Yermo soil—030X061N; Skelon soil—030X061N

833—Yermo-Arizo-Skelon association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,100 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 220 days

Composition

Yermo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—40 percent
Arizo very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—30 percent
Skelon very gravelly sandy loam, 2 to 8 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Arizo very gravelly loamy sand, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—7 percent
Inclusion 2: Scottcas very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—4 percent
Inclusion 3: Typic Torriorthents, 2 to 4 percent slopes (Typic Torriorthents - sandy, mixed, thermic)—4 percent

Yermo Soil

Position on landscape: Inset fans, lower part of fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Creosotebush, white bursage, shadscale, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 5 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
6 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly loamy sand; 5 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors surface layer): K value—0.17; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Skelon Soil

Position on landscape: Nonburied fan piedmont remnants
Parent material: Mixed alluvium

Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, creosotebush, white bursage, Anderson wolfberry
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 23 inches—stratified very gravelly fine sandy loam to very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
23 to 44 inches—indurated
Range in depth to indurated layer: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—washes; distinctive present vegetation—burrobrush, creosotebush
Inclusion 2: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—creosotebush, white bursage, ephedra
Inclusion 3: Position on landscape—fan skirts adjacent to fan piedmonts; distinctive present vegetation—creosotebush, white bursage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 252)

Elements of Wildlife Habitat

Suitability of Yermo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Arizo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Skelon soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Yermo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Slight
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight
(Arizo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Skelon Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Poor—thin layer
Sand: Improbable source—small stones
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Yermo soil—VIIs, nonirrigated; Arizo soil—VIIs, nonirrigated; Skelon soil—VIIs, nonirrigated
Site symbol: Yermo soil—030X061N; Arizo soil—030X061N; Skelon soil—030X061N

TABLE 252.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Yermo	Arizo	Skelon	1	2	3
Needlegrass	STIPA	2-5	2-5	2-5	1-5	2-5	2-5
Indian ricegrass	ORHY	2-5	2-5	2-5	1-5	2-5	2-5
Bottlebrush squirreltail	SIHY	1-3	1-3	1-3	---	1-3	1-3
Other perennial grasses	PPGG	2-7	2-7	2-7	5-10	2-7	2-7
Native annual grasses	AAGG	2-5	2-5	2-5	1-5	2-5	2-5
Perennial forbs	PPFF	3-10	3-10	3-10	2-8	3-10	3-10
Native annual forbs	AAFF	3-7	3-7	3-7	1-5	3-7	3-7
Shadscale	ATCO	5-25	5-25	5-25	---	5-25	5-25
Anderson wolfberry	LYAN	5-10	5-10	5-10	---	5-10	5-10
Creosotebush	LAD12	5-10	5-10	5-10	15-25	5-10	5-10
White bursage	FRDU	5-10	5-10	5-10	5-10	5-10	5-10
Bud sagebrush	ARSP3	3-10	3-10	3-10	---	3-10	3-10
Nevada ephedra	EPNE	3-8	3-8	3-8	---	3-8	3-8
Spiny menodora	MESP2	1-5	1-5	1-5	---	1-5	1-5
Cattle saltbush	ATPO	---	---	---	2-5	---	---
White burrobrush	HYSA	---	---	---	2-5	---	---
Other shrubs	SSSS	10-25	10-25	10-25	20-40	10-25	10-25
Site symbol		030X061N	030X061N	030X061N	030X076N	030X061N	030X061N
Potential production (lb/acre):							
Favorable years		300	300	300	600	300	300
Normal years		180	180	180	400	180	180
Unfavorable years		80	80	80	200	80	80

851—Skelon-Yermo-Arizo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,100 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 210 days

Composition

Skelon very gravelly sandy loam, 4 to 8 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—40 percent
Yermo very gravelly sandy loam, 4 to 15 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—30 percent
Arizo very gravelly loamy sand, occasionally flooded, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Scottcas very gravelly sandy loam, 4 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—8 percent
Inclusion 2: Typic Durorthids, 4 to 8 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic, shallow)—7 percent

Skelon Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, creosotebush, white bursage, Anderson wolfberry
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 23 inches—stratified very gravelly fine sandy loam to very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
23 to 44 inches—indurated
Range in depth to indurated layer: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Yermo Soil

Position on landscape: Inset fans, side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 5 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
6 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo Soil

Position on landscape: Washes
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, creosotebush, shadscale, white bursage

Typical profile:
0 to 6 inches—very gravelly loamy sand; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly sandy loam; 10 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—March to September
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of fan piedmont remnants; distinctive present vegetation—creosotebush, white bursage, Anderson wolfberry, ephedra
Inclusion 2: Position on landscape—eroded fan piedmont remnants; distinctive present vegetation—sparse creosotebush, shadscale, white bursage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 253)

Elements of Wildlife Habitat

Suitability of Skelon soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Yermo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Arizo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Skelon Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Poor—thin layer
Sand: Improbable source—small stones
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—thin layer, seepage
(Yermo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Slight
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight
(Arizo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Skelon soil—VIIs, nonirrigated; Yermo soil—VIIs, nonirrigated; Arizo soil—VIIw, nonirrigated
Site symbol: Skelon soil—030X061N; Yermo soil—030X061N; Arizo soil—030X076N

TABLE 253.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Skelon	Yermo	Arizo	1	2
Needlegrass	STIPA	2-5	2-5	1-5	2-5	---
Indian ricegrass	ORHY	2-5	2-5	1-5	2-5	1-5
Bottlebrush squirreltail	SIHY	1-3	1-3	---	1-3	---
Other perennial grasses	PPGG	2-7	2-7	5-10	2-7	1-3
Native annual grasses	AAGG	2-5	2-5	1-5	2-5	1-3
Perennial forbs	PPFF	3-10	3-10	2-8	3-10	1-5
Native annual forbs	AAFF	3-7	3-7	1-5	3-7	1-5
Shadscale	ATCO	5-25	5-25	---	5-25	10-30
Anderson wolfberry	LYAN	5-10	5-10	---	5-10	---
Creosotebush	LADI2	5-10	5-10	15-25	5-10	20-40
White bursage	FRDU	5-10	5-10	5-10	5-10	---
Bud sagebrush	ARSP3	3-10	3-10	---	3-10	---
Nevada ephedra	EPNE	3-8	3-8	---	3-8	---
Spiny menodora	MESP2	1-5	1-5	---	1-5	---
Cattle saltbush	ATPO	---	---	2-5	---	---
White burrobrush	HYSA	---	---	2-5	---	---
Other shrubs	SSSS	10-25	10-25	20-40	10-25	10-20
Site symbol		030X061N	030X061N	030X076N	030X061N	030X047N
Potential production (lb/acre):						
Favorable years		300	300	600	300	25
Normal years		180	180	400	180	15
Unfavorable years		80	80	200	80	5

860—Orwash-Arizo association, cool

Map Unit Setting

Position on landscape: Alluvial flats
Elevation: 4,000 to 4,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 56 degrees F
Frost-free season—about 200 days

Composition

Orwash gravelly fine sandy loam, cool, 0 to 2 percent slopes (Typic Torriorthents - sandy, mixed, thermic)—45 percent
Arizo very gravelly sandy loam, cool, 0 to 2 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—6 percent
Inclusion 2: Typic Torriorthents very gravelly loamy sand, 0 to 2 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—6 percent
Inclusion 3: Playas—3 percent

Orwash Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, cattle saltbush, fourwing saltbush, white bursage
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 30 to 45 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 18 inches—gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
18 to 60 inches or more—stratified gravelly coarse sandy loam to very gravelly loamy coarse sand; 35 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo Soil

Position on landscape: Alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, cattle saltbush, fourwing saltbrush, white bursage
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly loamy sand; 5 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: A
Erosion factors surface layer): K value—0.17; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded areas of alluvial flats; distinctive present vegetation—Russian-thistle

Inclusion 2: Position on landscape—alluvial flats adjacent to playas; distinctive present vegetation—cattle saltbush
Inclusion 3: Position on landscape—lower part of basin floors adjacent to alluvial flats; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 254)

Elements of Wildlife Habitat

Suitability of Orwash soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Arizo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Orwash Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Improbable source—too sandy

TABLE 254.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Orwash	Arizo	1	2	3
Indian ricegrass	ORHY	3-5	3-5	1-5	1-3	---
Needlegrass	STIPA	2-5	2-5	---	---	---
Bottlebrush squirreltail	SIHY	1-3	1-3	---	---	---
Other perennial grasses	PPGG	2-5	2-5	1-3	1-5	---
Native annual grasses	AAGG	1-5	1-5	1-3	1-3	---
Perennial forbs	PPFF	3-8	3-8	1-5	1-8	---
Native annual forbs	AAFF	2-5	2-5	1-5	1-7	---
Shadscale	ATCO	25-40	25-40	10-30	---	---
Nevada ephedra	EPNE	5-10	5-10	---	---	---
Spiny menodora	MESP2	2-10	2-10	---	---	---
Fourwing saltbush	ATCA2	2-5	2-5	---	---	---
White burrobrush	HYSA	1-5	1-5	---	---	---
Creosotebush	LADI2	---	---	---	---	---
Cattle saltbush	ATPO	---	---	20-40	20-40	---
Other shrubs	SSSS	10-20	10-20	---	20-40	---
				10-20	5-15	---
Site symbol		030X051N	030X051N	030X047N	030X046N	---
Potential production (lb/acre):						
Favorable years		300	300	25	300	---
Normal years		150	150	15	200	---
Unfavorable years		50	50	5	50	---

Embankments, dikes, and levees: Severe—seepage

(Arizo Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, small stones

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—large stones

Roadfill: Fair—large stones

Sand: Probable source

Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Orwash soil—VIIs, nonirrigated; Arizo soil—VIIs, nonirrigated

Site symbol: Orwash soil—030X051N; Arizo soil—030X051N

861—Orwash-Arizo association

Map Unit Setting

Position on landscape: Alluvial flats, fan skirts, inset fans
Elevation: 4,100 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 200 days

Composition

Orwash gravelly fine sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy, mixed, thermic)—50 percent
Arizo very cobbly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—20 percent
Arizo very gravelly loamy sand, occasionally flooded, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Entic Durorthids, 2 to 4 percent slopes (Entic Durorthids - loamy-skeletal, mixed, thermic, shallow)—8 percent
Inclusion 2: Yermo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—7 percent

Orwash Soil

Position on landscape: Lower part of fan skirts, alluvial flats
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 30 to 45 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 18 inches—gravelly loamy coarse sand; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
18 to 60 inches or more—stratified gravelly coarse sandy loam to very gravelly loamy coarse sand; 35 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo, Rarely Flooded, Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale
Typical profile:
0 to 6 inches—very cobbly loamy sand; 30 to 40 percent cobbles and stones and 55 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly loamy sand; 10 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 2 to 5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo, Occasionally Flooded, Soil

Position on landscape: Washes, inset fans

Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, creosotebush, white bursage, shadscale
Typical profile:
0 to 6 inches—very gravelly loamy sand; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly sandy loam; 10 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—March to September
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial flats; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 2: Position on landscape—inset fans, fan skirts; distinctive present vegetation—creosotebush, white bursage, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 255)

Elements of Wildlife Habitat

Suitability of Orwash soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Arizo, rarely flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Arizo, occasionally flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Orwash Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Improbable source—too sandy
Embankments, dikes, and levees: Severe—seepage
(Arizo, Rarely Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—large stones, seepage
(Arizo, Occasionally Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Orwash soil—VIIs, nonirrigated; Arizo, rarely flooded, soil—VIIs, nonirrigated; Arizo, occasionally flooded, soil—VIIw, nonirrigated
Site symbol: Orwash soil—030X061N; Arizo, rarely flooded, soil—030X061N; Arizo, occasionally flooded, soil—030X076N

TABLE 255.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Orwash	Arizo, rarely flooded	Arizo, occasionally flooded	1	2
Needlegrass	STIPA	2-5	2-5	1-5	2-5	2-5
Indian ricegrass	ORHY	2-5	2-5	1-5	2-5	2-5
Bottlebrush squirreltail	SIHY	1-3	1-3	---	1-3	1-3
Other perennial grasses	PPGG	2-7	2-7	5-10	2-7	2-7
Native annual grasses	AAGG	2-5	2-5	1-5	2-5	2-5
Perennial forbs	PPFF	3-10	3-10	2-8	3-10	3-10
Native annual forbs	AAFF	3-7	3-7	1-5	3-7	3-7
Shadscale	ATCO	5-25	5-25	---	5-25	5-25
Anderson wolfberry	LYAN	5-10	5-10	---	5-10	5-10
Creosotebush	LADI2	5-10	5-10	15-25	5-10	5-10
White bursage	FRDU	5-10	5-10	5-10	5-10	5-10
Bud sagebrush	ARSP3	3-10	3-10	---	3-10	3-10
Nevada ephedra	EPNE	3-8	3-8	---	3-8	3-8
Spiny menodora	MESP2	1-5	1-5	---	1-5	1-5
Cattle saltbush	ATPO	---	---	2-5	---	---
White burrobrush	HYSA	---	---	2-5	---	---
Other shrubs	SSSS	10-25	10-25	20-40	10-25	10-25
Site symbol		030X061N	030X061N	030X076N	030X061N	030X061N
Potential production (lb/acre):						
Favorable years		300	300	600	300	300
Normal years		180	180	400	180	180
Unfavorable years		80	80	200	80	80

871—Arizo association

Map Unit Setting

Position on landscape: Lower part of fan piedmonts
Elevation: 3,800 to 4,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 58 degrees F
Frost-free season—about 210 days

Composition

Arizo very gravelly loamy sand, occasionally flooded, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—60 percent
Arizo very gravelly fine sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Orwash gravelly fine sandy loam, 0 to 2 percent slopes (Typic Torriorthents - sandy, mixed, thermic)—6 percent
Inclusion 2: Skelon very gravelly sandy loam, 2 to 4 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—5 percent
Inclusion 3: Yermo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—4 percent

Arizo, Occasionally Flooded, Soil

Position on landscape: Washes
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, shadscale, white bursage
Typical profile:
0 to 6 inches—very gravelly loamy sand; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly sandy loam; 10 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—March to September
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.15; T value—5; wind erodibility group—4
Hazard of erosion: By water—severe (flash floods); by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Arizo, Nonflooded, Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, shadscale, white bursage
Typical profile:
0 to 6 inches—very gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 55 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 60 inches or more—stratified cobbly coarse sand to extremely gravelly loamy sand; 5 to 35 percent cobbles and stones and 50 to 80 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Very rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors surface layer): K value—0.17; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—washes; distinctive present vegetation—creosotebush, shadscale, white bursage
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—creosotebush, shadscale, white bursage

Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—creosotebush, shadscale, white bursage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 256)

Elements of Wildlife Habitat

Suitability of Arizo, occasionally flooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Arizo, nonflooded, soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Arizo, Occasionally Flooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Fair—large stones
Sand: Probable source

TABLE 256.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Arizo, occasionally flooded	Arizo, nonflooded	1	2	3
Needlegrass	STIPA	1-5	2-5	2-5	2-5	2-5
Indian ricegrass	ORHY	1-5	2-5	2-5	2-5	2-5
Bottlebrush squirreltail	SIHY	---	1-3	1-3	1-3	1-3
Other perennial grasses	PPGG	5-10	2-7	2-7	2-7	2-7
Native annual grasses	AAGG	1-5	2-5	2-5	2-5	2-5
Perennial forbs	PPFF	2-8	3-10	3-10	3-10	3-10
Native annual forbs	AAFF	1-5	3-7	3-7	3-7	3-7
Creosotebush	LADI2	15-25	5-10	5-10	5-10	5-10
White bursage	FRDU	5-10	5-10	5-10	5-10	5-10
Cattle saltbush	ATPO	2-5	---	---	---	---
White burrobrush	HYSA	2-5	---	---	---	---
Shadscale	ATCO	---	5-25	5-25	5-25	5-25
Anderson wolfberry	LYAN	---	5-10	5-10	5-10	5-10
Bud sagebrush	ARSP3	---	3-10	3-10	3-10	3-10
Nevada ephedra	EPNE	---	3-8	3-8	3-8	3-8
Spiny menodora	MESP2	---	1-5	1-5	1-5	1-5
Other shrubs	SSSS	20-40	10-25	10-25	10-25	10-25
Site symbol		030X076N	030X061N	030X061N	030X061N	030X061N
Potential production (lb/acre):						
Favorable years		600	300	300	300	300
Normal years		400	180	180	180	180
Unfavorable years		200	80	80	80	80

Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Arizo, Nonflooded, Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Arizo, occasionally flooded, soil—VIIw, nonirrigated; Arizo, nonflooded, soil—VIIs, nonirrigated
Site symbol: Arizo, occasionally flooded, soil—030X076N; Arizo, nonflooded, soil—030X061N

880—Scottcas-Yermo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,400 to 5,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 200 days

Composition

Scottcas very gravelly sandy loam, 4 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—45 percent
Yermo very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents very cobbly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—9 percent
Inclusion 2: Arizo very gravelly loamy sand, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—6 percent

Scottcas Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, shadscale, white bursage, Anderson wolfberry, spiny menodora
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
9 to 18 inches—extremely gravelly sandy loam, extremely gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 75 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM; estimated AASHTO classification - A-1
18 to 28 inches—very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
28 to 60 inches or more—stratified extremely gravelly loamy coarse sand to extremely gravelly sandy loam; 0 to 20 percent cobbles and stones and 75 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Low

Yermo Soil

Position on landscape: Inset fans, remnants of inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, creosotebush, white bursage, Anderson wolfberry
Typical profile:
0 to 6 inches—very gravelly sandy loam; 5 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
6 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13);

estimated Unified classification - GM, GM-GC; SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—side slopes of fan piedmont remnants; distinctive present vegetation—creosotebush, shadscale, spiny menodora, white bursage
Inclusion 2: Position on landscape—washes; distinctive present vegetation—burrobrush, creosotebush, shadscale, white bursage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 257)

Elements of Wildlife Habitat

Suitability of Scottcas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Yermo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Scottcas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Yermo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Slight
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight

Interpretive Groups

Capability classification: Scottcas soil—VIIs, nonirrigated; Yermo soil—VIIs, nonirrigated
Site symbol: Scottcas soil—030X061N; Yermo soil—030X061N

TABLE 257.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Scottcas	Yermo	1	2
Needlegrass	STIPA	2-5	2-5	2-5	1-5
Indian ricegrass	ORHY	2-5	2-5	2-5	1-5
Bottlebrush squirreltail	SIHY	1-3	1-3	1-3	---
Other perennial grasses	PPGG	2-7	2-7	2-7	5-10
Native annual grasses	AAGG	2-5	2-5	2-5	1-5
Perennial forbs	PPFF	3-10	3-10	3-10	2-8
Native annual forbs	AAFF	3-7	3-7	3-7	1-5
Shadscale	ATCO	5-25	5-25	5-25	---
Anderson wolfberry	LYAN	5-10	5-10	5-10	---
Creosotebush	LADI2	5-10	5-10	5-10	15-25
White bursage	FRDU	5-10	5-10	5-10	5-10
Bud sagebrush	ARSP3	3-10	3-10	3-10	---
Nevada ephedra	EPNE	3-8	3-8	3-8	---
Spiny menodora	MESP2	1-5	1-5	1-5	---
Cattle saltbush	ATPO	---	---	---	2-5
White burrobrush	HYSA	---	---	---	2-5
Other shrubs	SSSS	10-25	10-25	10-25	20-40
Site symbol		O30XO61N	O30XO61N	O30XO61N	O30XO76N
Potential production (lb/acre):					
Favorable years		300	300	300	600
Normal years		180	180	180	400
Unfavorable years		80	80	80	200

881—Scottcas-Skelon-Yermo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,200 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 190 days

Composition

Scottcas very gravelly sandy loam, 4 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—35 percent
Skelon very gravelly sandy loam, 4 to 8 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—30 percent
Yermo very gravelly sandy loam, 4 to 15 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Scottcas very cobbly sandy loam, 4 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—5 percent
Inclusion 2: Arizo very gravelly loamy sand, occasionally flooded, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—3 percent
Inclusion 3: Upspring extremely cobbly sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—2 percent

Scottcas Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale, Nevada ephedra, spiny menodora
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
9 to 18 inches—extremely gravelly sandy loam, extremely gravelly coarse sandy loam; 0 to 5 percent cobbles and stones and 75 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM; estimated AASHTO classification - A-1
18 to 28 inches—very gravelly loamy coarse sand; 0 to 5 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; very hard, very firm; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
28 to 60 inches or more—stratified extremely gravelly loamy coarse sand to extremely gravelly sandy loam; 0 to 20 percent cobbles and stones and 75 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Low

Skelon Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, shadscale, white bursage
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 23 inches—stratified very gravelly fine sandy loam to very gravelly coarse sandy loam; 0 to 10

percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

23 to 44 inches—indurated

Range in depth to indurated layer: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Yermo Soil

Position on landscape: Inset fans, remnants of inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Creosotebush, white bursage, shadscale
Typical profile:

0 to 6 inches—very gravelly sandy loam; 5 to 20 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2

6 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loam; 10 to 25 percent cobbles and stones and 45 to 70 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 2: Position on landscape—washes; distinctive present vegetation—burrobrush, creosotebush, white bursage
Inclusion 3: Position on landscape—hills adjacent to fan piedmonts; distinctive present vegetation—creosotebush, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 258)

Elements of Wildlife Habitat

Suitability of Scottcas soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Skelon soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Yermo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Scottcas Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Skelon Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—small stones
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—seepage
(Yermo Soil)
Suitability and limitations for the following uses:

TABLE 258.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Scottcas	Skelon	Yermo	1	2	3
Needlegrass	STIPA	2-5	2-5	2-5	2-5	1-5	3-5
Indian ricegrass	ORHY	2-5	2-5	2-5	2-5	1-5	1-5
Bottlebrush squirreltail	SIHY	1-3	1-3	1-3	1-3	---	1-2
Other perennial grasses	PPGG	2-7	2-7	2-7	2-7	5-10	2-5
Native annual grasses	AAGG	2-5	2-5	2-5	2-5	1-5	1-5
Perennial forbs	PPFF	3-10	3-10	3-10	3-10	2-8	5-7
Native annual forbs	AAFF	3-7	3-7	3-7	3-7	1-5	3-6
Shadscale	ATCO	5-25	5-25	5-25	5-25	---	20-40
Anderson wolfberry	LYAN	5-10	5-10	5-10	5-10	---	5-10
Creosotebush	LADI2	5-10	5-10	5-10	5-10	15-25	---
White bursage	FRDU	5-10	5-10	5-10	5-10	5-10	2-5
Bud sagebrush	ARSP3	3-10	3-10	3-10	3-10	---	---
Nevada ephedra	EPNE	3-8	3-8	3-8	3-8	---	5-10
Spiny menodora	MESP2	1-5	1-5	1-5	1-5	---	2-5
Cattle saltbush	ATPO	---	---	---	---	2-5	---
White burrobrush	HYSA	---	---	---	---	2-5	---
Other shrubs	SSSS	10-25	10-25	10-25	10-25	20-40	10-20
Site symbol		030X061N	030X061N	030X061N	030X061N	030X076N	030X044N
Potential production (lb/acre):							
Favorable years		300	300	300	300	600	250
Normal years		180	180	180	180	400	150
Unfavorable years		80	80	80	80	200	50

Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Moderate—slope
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight

Interpretive Groups

Capability classification: Scottcas soil—VIIs, nonirrigated; Skelon soil—VIIs, nonirrigated; Yermo soil—VIIs, nonirrigated
Site symbol: Scottcas soil—030X061N; Skelon soil—030X061N; Yermo soil—030X061N

900—Playas

Map Unit Setting

Position on landscape: Lower part of basin floors
Elevation: 4,100 to 5,300 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 54 degrees F
Frost-free season—about 140 days

Composition

Playas—100 percent

Playas

Position on landscape: Lower part of basin floors
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Major Uses

Wildlife habitat, recreation

Interpretive Groups

Capability classification: VIIIw

901—Badland-Belcher-Belted association

Map Unit Setting

Position on landscape: Fan piedmonts, alluvial flats
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Badland—45 percent
Belcher gravelly sand, 0 to 4 percent slopes (Entic Durorthids - loamy, mixed, mesic, shallow)—20 percent
Belted gravelly loamy sand, 2 to 8 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Roic very gravelly fine sandy loam, 2 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—6 percent
Inclusion 2: Wardenot gravelly fine sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Badland

Position on landscape: Highly dissected areas of fan piedmonts
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Barren

Belcher Soil

Position on landscape: Fan piedmonts, alluvial flats
Parent material: Kind—alluvium; source—lake sediment
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Littleleaf horsebrush, dalea, fourwing saltbush, shadscale, black greasewood, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly sand; 25 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
3 to 10 inches—fine sandy loam, sandy loam; massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, SM-SC; estimated AASHTO classification - A-4
10 to 18 inches—cemented
18 inches—weathered bedrock
Range in depth to cemented layer: 5 to 18 inches
Range in depth to bedrock: 10 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Belted Soil

Position on landscape: Fan piedmonts
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Bailey greasewood, shadscale, bud sagebrush, Cooper wolfberry, Indian ricegrass, galleta
Typical profile:
0 to 6 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
6 to 13 inches—sandy clay loam, loam, gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, SC; estimated AASHTO classification - A-2, A-6
13 to 25 inches—cemented
25 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to cemented layer: 6 to 14 inches

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1 to 2 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—pediments cut in unconsolidated sediment adjacent to the fan piedmont; distinctive present vegetation—sparse shadscale
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 3: Position on landscape—inset fans, drainageways; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 259)

Elements of Wildlife Habitat

Suitability of Belcher soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Belted soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Belcher Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cemented pan, depth to rock
Local roads and streets: Severe—cemented pan, depth to rock
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Belted Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Badland—VIIIe; Belcher soil—VIIs, nonirrigated; Belted soil—VIIs, nonirrigated
Site symbol: Belcher soil—029X046N; Belted soil—029X017N

TABLE 259.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Badland	Belcher	Belted	1	2	3
Galleta	HIJA	---	5-20	10-25	---	10-25	---
Indian ricegrass	ORHY	---	5-10	5-10	2-5	5-10	5-10
Dropseed	SPORO	---	5-15	---	---	---	---
Needlegrass	STIPA	---	2-5	2-5	---	2-5	---
Bottlebrush squirreltail	SIHY	---	---	2-5	1-2	2-5	---
King desertgrass	BLKI	---	---	---	1-2	---	---
Other perennial grasses	PPGG	---	5-10	5-15	1-5	5-15	5-10
Native annual grasses	AAGG	---	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	---	5-7	4-10	2-5	4-10	2-6
Native annual forbs	AAFF	---	2-4	1-5	1-5	1-5	1-5
Fourwing saltbush	ATCA2	---	10-15	---	---	---	5-15
Winterfat	EULA5	---	5-20	5-10	---	5-10	---
Bud sagebrush	ARSP5	---	5-10	5-10	2-5	5-10	---
Spiny hopsage	GRSP	---	2-8	---	---	---	---
Anderson wolfberry	LYAN	---	1-5	---	---	---	---
Shadscale	ATCO	---	---	10-25	40-60	10-25	---
Bailey greasewood	SAVEB	---	---	5-10	10-15	5-10	2-10
Nevada ephedra	EPNE	---	---	1-5	---	1-5	2-5
Nevada dalea	DAPO2	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	2-5
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Other shrubs	SSSS	---	10-25	10-20	5-15	10-20	10-20
Joshua-tree	YUBR	---	---	1-2	---	1-2	---
Site symbol		---	029X046N	029X017N	029X033N	029X017N	029X041N
Potential production (lb/acre):							
Favorable years		---	450	350	100	350	500
Normal years		---	350	250	50	250	300
Unfavorable years		---	175	100	25	100	100

902—Slickens

Map Unit Setting

Position on landscape: Drainageways
Elevation: 5,400 to 6,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Slickens—100 percent

Slickens

Position on landscape: Drainageways
Slope features: Length—long; shape—plane
Dominant present vegetation: Barren

Major Uses

Wildlife habitat, recreation

Interpretive Groups

Capability classification: VIIIs

905—Badland

Map Unit Setting

Position on landscape: Eroded piedmonts, hills
Elevation: 4,400 to 5,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Badland—100 percent

Badland

Position on landscape: Eroded piedmonts, hills
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Barren

Major Uses

Wildlife habitat, recreation

Interpretive Groups

Capability classification: VIIIs

910—Stargo-Playas association

Map Unit Setting

Position on landscape: Flood plains
Elevation: 4,600 to 4,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Stargo loam, 0 to 2 percent slopes (Durorthidic Torrifluvents - sandy, mixed, mesic)—55 percent
Playas—35 percent
Contrasting inclusions as follows—
Inclusion 1: Duric Natrargids, 0 to 2 percent slopes (Duric Natrargids - fine-loamy, mixed, mesic)—5 percent
Inclusion 2: Typic Torrifluvents, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—3 percent
Inclusion 3: Duric Haplargids, 2 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—2 percent

Stargo Soil

Position on landscape: Flood plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush
Typical profile:
0 to 4 inches—loam; 10 to 25 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, ML; estimated AASHTO classification - A-4
4 to 13 inches—clay loam, sandy clay loam; 5 to 15 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6, A-7
13 to 60 inches or more—stratified sandy loam to very gravelly sand; 0 to 5 percent cobbles and stones and 15 to 25 percent pebbles (by weight); massive; very hard, firm to brittle; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—brief; months—January to July
Permeability: Moderately slow
Available water capacity: 5 to 7 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.43; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Playas

Position on landscape: Flood plains
Slope features: Length—long; shape—smooth to slightly concave
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—fan remnants adjacent to axial stream terraces; distinctive present vegetation—shadscale, Bailey greasewood
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—sparse shadscale, black greasewood
Inclusion 3: Position on landscape—fan remnants adjacent to axial stream terraces; distinctive present vegetation—shadscale, Bailey greasewood

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 260)

Elements of Wildlife Habitat

Suitability of Stargo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Stargo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Moderate—seepage, piping

Interpretive Groups

Capability classification: Stargo soil—IIIw, irrigated, and VIIw, nonirrigated; Playas—VIIIw
Site symbol: Stargo soil—29X017N

TABLE 260.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Stargo	Playas	1	2	3
Galleta	HIJA	10-25	---	10-25	---	10-25
Indian ricegrass	ORHY	5-10	---	5-10	---	5-10
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	2-5
Needlegrass	STIPA	2-5	---	2-5	---	2-5
Alkali sacaton	SPAI	---	---	---	10-15	---
Basin wildrye	ELCI2	---	---	---	5-10	---
Inland saltgrass	DIST	---	---	---	1-5	---
Other perennial grasses	PPGG	5-15	---	5-15	5-15	5-15
Native annual grasses	AAGG	1-5	---	1-5	2-5	1-5
Perennial forbs	PPFF	4-10	---	4-10	5-10	4-10
Native annual forbs	AAFF	1-5	---	1-5	2-5	1-5
Shadscale	ATCO	10-25	---	10-25	15-30	10-25
Bailey greasewood	SAVEB	5-10	---	5-10	---	5-10
Bud sagebrush	ARSP5	5-10	---	5-10	---	5-10
Winterfat	EULA5	5-10	---	5-10	---	5-10
Nevada ephedra	EPNE	1-5	---	1-5	---	1-5
Black greasewood	SAVE4	---	---	---	5-15	---
Cooper wolfberry	LYCO2	---	---	---	5-10	---
Anderson wolfberry	LYAN	---	---	---	5-10	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---
Fourwing saltbush	ATCA2	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	2-5	---
Other shrubs	SSSS	10-20	---	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	1-2	---	1-2
Site symbol		029X017N	---	029X017N	029X024N	029X017N
Potential production (lb/acre):						
Favorable years		350	---	350	800	350
Normal years		250	---	250	350	250
Unfavorable years		100	---	100	150	100

920—Fuegosta-Tomel-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 4,700 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Fuegosta gravelly fine sandy loam, 2 to 4 percent slopes (Abruptic Durargids - clayey, montmorillonitic, mesic, shallow)—40 percent
Tomel very gravelly sandy loam, moist, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Vigus gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—10 percent
Inclusion 2: Typic Durorthids, 4 to 15 percent slopes (Typic Durorthids - loamy-skeletal, mixed, mesic, shallow)—5 percent

Fuegosta Soil

Position on landscape: Summits of upper side slopes of higher fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, Anderson wolfberry
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
3 to 11 inches—gravelly clay, gravelly sandy clay, gravelly clay loam; 0 to 5 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, CH; estimated AASHTO classification - A-2, A-7
11 to 16 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
16 to 26 inches—indurated
26 to 60 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Tomel Soil

Position on landscape: Summits of upper side slopes of lower fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny mendora, Anderson wolfberry
Typical profile:
0 to 3 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); platy structure; slightly hard, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 19 inches—very gravelly clay loam, very gravelly sandy clay loam; 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
19 to 26 inches—indurated
26 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 5 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; very hard, firm; strongly alkaline (pH 9.0); slightly (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow

Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, rabbitbrush, shadscale
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, GP, GP-GM, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December to August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—lower side slopes of fan piedmont remnants; distinctive present vegetation—spiny menodora, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 261)

Elements of Wildlife Habitat

Suitability of Fuegosta soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Tomel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Fuegosta Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, rooting depth
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan, shrink-swell
Roadfill: Poor—cemented pan, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Tomel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, excess salt
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 261.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Fuegosta	Tomel	Izo	1	2
Indian ricegrass	ORHY	5-20	5-20	5-10	5-10	5-20
Galleta	HIJA	5-10	5-10	---	10-25	5-10
Bottlebrush squirreltail	SIHY	---	---	---	2-5	---
Needlegrass	STIPA	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	2-6	4-10	5-10
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	2-5
Spiny menodora	MESP2	10-30	10-30	---	---	10-30
Bailey greasewood	SAVEB	5-15	5-15	2-10	5-10	5-15
Shadscale	ATCO	5-15	5-15	---	10-25	5-15
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	5-10
Nevada ephedra	EPNE	5-10	5-10	2-5	1-5	5-10
Rubber rabbitbrush	CHNA2	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Winterfat	EULA5	---	---	---	5-10	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	1-2	---
Site symbol		029X036N	029X036N	029X041N	029X017N	029X036N
Potential production (lb/acre):						
Favorable years		400	400	500	350	400
Normal years		300	300	300	250	300
Unfavorable years		100	100	100	100	100

Interpretive Groups

Capability classification: Fuegosta soil—VIIs, nonirrigated; Tomel soil—VIIs, nonirrigated; Izo soil—VIIw, nonirrigated

Site symbol: Fuegosta soil—029X036N; Tomel soil—029X036N; Izo soil—029X041N

921—Fuegosta-Unsel association

Map Unit Setting

Position on landscape: Fan piedmont remnants
Elevation: 4,500 to 5,200 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Fuegosta gravelly fine sandy loam, dry, 2 to 4 percent slopes (Abruptic Durargids - clayey, montmorillonitic, mesic, shallow)—65 percent
Unsel gravelly fine sandy loam, 2 to 4 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Tomel very gravelly fine sandy loam, moist, 2 to 8 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Haploxerollic Durargids, 2 to 4 percent slopes (Haploxerollic Durargids - fine, montmorillonitic, mesic)—4 percent
Inclusion 4: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Fuegosta Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush, Bailey greasewood
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.5); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
3 to 11 inches—gravelly clay, gravelly sandy clay, gravelly clay loam; 0 to 5 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, CH; estimated AASHTO classification - A-2, A-7
11 to 16 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
16 to 26 inches—indurated
26 to 60 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the indurated layer—slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Unsel Soil

Position on landscape: Shoulders of fan piedmont remnants, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, galleta, bud sagebrush, Bailey greasewood
Typical profile:
0 to 7 inches—gravelly fine sandy loam; 25 to 45 percent (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
7 to 11 inches—gravelly clay loam, gravelly sandy clay loam; 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
11 to 20 inches—gravelly sandy loam, gravelly sandy clay loam; 30 to 50 percent pebbles (by weight); massive; extremely hard, firm; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM-SC; estimated AASHTO classification - A-2
20 to 60 inches or more—very gravelly sand, very gravelly loamy sand, extremely gravelly sand; 65 to 80 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); slightly saline (4

to 8 mmhos/cm); slightly sodic (SAR 13 to 20); estimated Unified classification - GP-GM, GP; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—2; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans, fan-remnant side slopes; distinctive present vegetation—shadscale, galleta
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, galleta
Inclusion 3: Position on landscape—upper part of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush, shadscale, galleta
Inclusion 4: Position on landscape—drainageways; distinctive present vegetation—shadscale, rabbitbrush, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community

(see table 262)

Elements of Wildlife Habitat

Suitability of Fuegosta soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Unsel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Fuegosta Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, rooting depth
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan, shrink-swell
Roadfill: Poor—cemented pan, shrink-swell
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Unsel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Fuegosta soil—VIIs, nonirrigated; Unsel soil—VIIc, nonirrigated
Site symbol: Fuegosta soil—029X017N; Unsel soil—029X017N

TABLE 262.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Puegosta	Unsel	1	2	3	4
Galleta	HIJA	10-25	10-25	10-25	5-10	5-15	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	1-5	---
Needlegrass	STIPA	2-5	2-5	2-5	---	2-10	---
Dropseed	SPORO	---	---	---	---	1-5	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	10-20	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	4-10	4-10	4-10	5-10	5-10	2-6
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	2-5	1-5
Shadscale	ATCO	10-25	10-25	10-25	5-15	---	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	5-15	---	2-10
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	---	---
Winterfat	EULA5	5-10	5-10	5-10	---	2-5	---
Nevada ephedra	EPNE	1-5	1-5	1-5	5-10	2-5	2-5
Spiny menodora	MESP2	---	---	---	10-30	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	15-20	---
Fourwing saltbush	ATCA2	---	---	---	---	5-10	5-15
Spiny hopsage	GRSP	---	---	---	---	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25	10-20
Joshua-tree	YUBR	1-2	1-2	1-2	---	---	---
Site symbol		029X017N	029X017N	029X017N	029X036N	029X006N	029X041N
Potential production (lb/acre):							
Favorable years		350	350	350	400	800	500
Normal years		250	250	250	300	500	300
Unfavorable years		100	100	100	100	300	100

931—Laxal-Wardenot-Ardivey association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,100 to 5,700 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Laxal very gravelly sandy loam, 2 to 8 percent slopes (Durorthidic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—40 percent
Wardenot very gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—30 percent
Ardivey very gravelly sandy loam, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Duric Haplargids 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Duric Camborthids, 4 to 15 percent slopes (Duric Camborthids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Typic Torriorthents, 0 to 2 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—2 percent

Laxal Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified very gravelly sandy loam to very gravelly loamy coarse sand; 0 to 15 percent cobbles and stones and 60 to 70 percent pebbles (by weight); massive; slightly hard, firm; strongly alkaline (pH 8.8); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth

Dominant present vegetation: Shadscale, bud sagebrush, galleta

Typical profile:

0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A2

4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2

14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None

Permeability: Moderately slow

Available water capacity: 2.5 to 3.5 inches

Water supplying capacity: 5 inches

Runoff: Slow

Hydrologic group: B

Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7

Hazard of erosion: By water—slight; by wind—slight

Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—low

Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, spiny menodora, galleta

Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, bud sagebrush, galleta

Inclusion 3: Position on landscape—fan collars adjacent to fan piedmonts; distinctive present vegetation—Joshua-tree, shadscale

Inclusion 4: Position on landscape—basin floors adjacent to fan piedmonts; distinctive present vegetation—shadscale, winterfat, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 263)

Elements of Wildlife Habitat

Suitability of Laxal soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Laxal Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, small stones

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Slight

Roadfill: Good

Sand: Probable source

Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage

(Wardenot Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, too sandy

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—flooding, large stones

Roadfill: Fair—large stones

Sand: Probable source

Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage, large stones

(Ardivey Soil)

Suitability and limitations for the following uses:

Rangeland seeding: Poor—too arid, droughty, small stones

Shallow excavations: Severe—cutbanks cave

Local roads and streets: Moderate—large stones

Roadfill: Fair—large stones

Sand: Improbable source—small stones

Gravel: Probable source

Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Laxal soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated

TABLE 263.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Laxal	Wardenot	Ardivey	1	2	3	4
Galleta	HIJA	10-25	10-25	10-25	5-10	---	10-15	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-20	5-10	5-10	10-20
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	---	2-5	5-10
Needlegrass	STIPA	2-5	2-5	2-5	---	---	---	---
Desert needlegrass	STSP3	---	---	---	---	---	5-10	---
Dropseed	SPORO	---	---	---	---	---	1-5	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	5-10	10-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	1-5	---
Perennial forbs	PPFF	4-10	4-10	4-10	5-10	2-6	5-10	3-7
Native annual forbs	AAFF	1-5	1-5	1-5	2-5	1-5	2-5	2-5
Shadscale	ATCO	10-25	10-25	10-25	5-15	---	---	10-20
Bailey greasewood	SAVEB	5-10	5-10	5-10	5-15	2-10	---	5-10
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	---	1-3	---
Winterfat	EULA5	5-10	5-10	5-10	---	---	---	---
Nevada ephedra	EPNE	1-5	1-5	1-5	5-10	2-5	5-10	---
Spiny menodora	MESP2	---	---	---	10-30	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	2-5	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---	5-20
Anderson wolfberry	LYAN	---	---	---	---	---	5-10	---
Spiny hopsage	GRSP	---	---	---	---	---	1-5	---
Douglas rabbitbrush	CHVI8	---	---	---	---	---	1-3	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-25	5-15
Joshua-tree	YUBR	1-2	1-2	1-2	---	---	5-15	---
Site symbol		029X017N	029X017N	029X017N	029X036N	029X041N	029X007N	027X043N
Potential production (lb/acre):								
Favorable years		350	350	350	400	500	800	400
Normal years		250	250	250	300	300	500	200
Unfavorable years		100	100	100	100	100	300	100

Site symbol: Laxal soil—029X017N; Wardenot soil—029X017N; Ardivey soil—029X017N

940—Belted-Keefa association

Map Unit Setting

Position on landscape: Beach terraces, fan skirts
Elevation: 5,000 to 5,300 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Belted gravelly loamy sand, 0 to 8 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—70 percent
Keefa sandy loam, 0 to 8 percent slopes (Duric Camborthids - coarse-loamy, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Typic Torriorthents, occasionally flooded, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Belted Soil

Position on landscape: Dissected beach terraces
Parent material: Mixed alluvium over lake sediment
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 6 inches—gravelly loamy sand; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
6 to 13 inches—sandy clay loam, loam, gravelly clay loam; 0 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - CL, SC; estimated AASHTO classification - A-2, A-6
13 to 25 inches—cemented
25 to 60 inches or more—very gravelly sand, extremely gravelly sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to cemented layer: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1 to 2 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Keefa Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta, winterfat
Typical profile:
0 to 5 inches—sandy loam; 0 to 20 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
5 to 27 inches—sandy loam, gravelly sandy loam, gravelly coarse sandy loam; 0 to 35 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
27 to 36 inches—gravelly sandy loam, gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); massive; hard, firm; very strongly alkaline (pH 9.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
36 to 60 inches or more—stratified very gravelly sand to gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate

Available water capacity: 4 to 6 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans; distinctive present vegetation—shadscale, bud sagebrush, Indian ricegrass
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush

Major Uses

Current uses: Rangeland, wildlife habitat
Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 264)

Elements of Wildlife Habitat

Suitability of Belted soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Keefa soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Belted Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Keefa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Belted soil—VIIs, nonirrigated; Keefa soil—IVe, irrigated, and VIIc, nonirrigated
Site symbol: Belted soil—029X017N; Keefa soil—029X017N

TABLE 264.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Belted	Keefa	1	2
Galleta	HIJA	10-25	10-25	10-25	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---
Needlegrass	STIPA	2-5	2-5	2-5	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	4-10	4-10	4-10	2-6
Native annual forbs	AAFF	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	10-25	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	2-10
Bud sagebrush	ARSP5	5-10	5-10	5-10	---
Winterfat	EULA5	5-10	5-10	5-10	---
Nevada ephedra	EPNE	1-5	1-5	1-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	1-2	---
Site symbol		029X017N	029X017N	029X017N	029X041N
Potential production (lb/acre):					
Favorable years		350	350	350	500
Normal years		250	250	250	300
Unfavorable years		100	100	100	100

941—Belted-Lathrop association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 6,000 to 6,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Belted very cobbly sandy loam, 4 to 30 percent slopes (Haplic Durargids - loamy, mixed, mesic, shallow)—45 percent
Lathrop very stony fine sandy loam, 4 to 15 percent slopes (Duric Haplargids - fine-loamy over sandy or sandy-skeletal, mixed, mesic)—40 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents, 15 to 50 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—5 percent
Inclusion 2: Downeyville very cobbly fine sandy loam, 15 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Izo very stony sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Rock outcrop—2 percent

Belted Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, bud sagebrush, galleta
Typical profile:
0 to 6 inches—very cobbly sandy loam; 30 to 45 percent cobbles and stones and 40 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SM-SC, GM, GM-GC; estimated AASHTO classification - A-1, A-2
6 to 13 inches—gravelly loam, loam, gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SC; estimated AASHTO classification - A-6
13 to 25 inches—cemented
25 to 60 inches or more—very gravelly coarse sand, extremely gravelly coarse sand; 0 to 10 percent cobbles and stones and 65 to 80 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 9.0); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP; estimated AASHTO classification - A-1
Range in depth to cemented layer: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1 to 2 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Lathrop Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny menodora, shadscale, galleta, bud sagebrush
Typical profile:
0 to 5 inches—very stony fine sandy loam; 25 to 45 percent cobbles and stones and 35 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH .4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-1, A-2
5 to 11 inches—clay loam, gravelly sandy clay loam, loam; 0 to 15 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 7.9); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC, CL; estimated AASHTO classification - A-6
11 to 30 inches—extremely cobbly loamy sand, very gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; hard, firm; strongly alkaline (pH 8.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GP, SP-SM, SP; estimated AASHTO classification - A-1

30 to 60 inches or more—extremely cobbly sand, extremely gravelly loamy coarse sand, very cobbly sand; 15 to 65 percent cobbles and stones and 60 to 90 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, SP, GP-GM, SP-SM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately slow
Available water capacity: 4 to 5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—north-facing upper side slopes of fan piedmont remnants; distinctive present vegetation—Wyoming big sagebrush, galleta
Inclusion 2: Position on landscape—rock pediment remnants adjacent to fan piedmonts; distinctive present vegetation—shadscale, galleta, bud sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion 4: Position on landscape—small peaks and ridges on rock pediments adjacent to fan piedmonts; distinctive present vegetation—burrobrush, rabbitbrush
Inclusion of minor extent: Position on landscape—hills, rock pediments; distinctive present vegetation—spiny hopsage, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 265)

Elements of Wildlife Habitat

Suitability of Belted soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Lathrop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Belted Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Lathrop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, large stones
Shallow excavations: Severe—large stones, cutbanks cave
Local roads and streets: Poor—large stones
Roadfill: Poor—large stones
Sand: Improbable source—large stones
Gravel: Improbable source—large stones
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Belted soil—VIIs, nonirrigated; Lathrop soil—VIIs, nonirrigated
Site symbol: Belted soil—029X036N; Lathrop soil—029X036N

TABLE 265.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name		Inclusion number--			
		Belted	Lathrop	1	2	3	4
Indian ricegrass	ORHY	5-20	5-20	5-10	5-15	5-10	---
Galleta	HIJA	5-10	5-10	5-15	5-20	---	---
Needlegrass	STIPA	---	---	5-10	5-10	---	---
Bottlebrush squirreltail	SIHY	---	---	1-4	2-5	---	---
Dropseed	SPORO	---	---	1-5	---	---	---
Other perennial grasses	PPGG	5-10	5-10	5-20	5-10	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	2-4	---
Perennial forbs	PPFF	5-10	5-10	4-10	5-10	2-6	---
Native annual forbs	AAFF	2-5	2-5	2-7	2-5	1-5	---
Spiny menodora	MESP2	10-30	10-30	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	---	5-15	2-10	---
Shadscale	ATCO	5-15	5-15	---	15-25	---	---
Bud sagebrush	ARSP5	5-10	5-10	---	2-5	---	---
Nevada ephedra	EPNE	5-10	5-10	5-10	2-5	2-5	---
Wyoming big sagebrush	ARTRW*	---	---	20-30	---	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	---	5-15	---
Burrobrush	HYMEN3	---	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	---
Site symbol		029X036N	029X036N	029X010N	029X022N	029X041N	---
Potential production (lb/acre):							
Favorable years		400	400	600	300	500	---
Normal years		300	300	400	200	300	---
Unfavorable years		100	100	200	100	100	---

950—Sylvaniam-Logring-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,500 to 8,000 feet
Climatic data (average annual):
Precipitation—about 13 inches
Air temperature—about 46 degrees F
Frost-free season—about 110 days

Composition

Sylvaniam very gravelly loam, 30 to 50 percent slopes (Typic Calcixerolls - loamy-skeletal, carbonatic, frigid)—40 percent
Logring very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—35 percent
Rock outcrop—10 percent
Contrasting inclusions as follows—
Inclusion 1: Trailamp very gravelly loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—8 percent
Inclusion 2: Ubehebe very gravelly loam, 15 to 50 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—7 percent

Sylvaniam Soil

Position on landscape: Upper part of mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountainmahogany, mountain big sagebrush, bitterbrush
Typical profile:
0 to 11 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
11 to 32 inches—very gravelly loam, very gravelly fine sandy loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles (by weight); subangular blocky structure; hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-2
32 inches—unweathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.5 to 4.0 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Logring Soil

Position on landscape: Lower part of mountainsides
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, bitterbrush
Typical profile:
0 to 7 inches—very cobbly fine sandy loam; 30 to 45 percent cobbles and stones and 35 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
7 to 14 inches—extremely cobbly loam, very cobbly fine sandy loam, very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 60 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
14 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks and ridges of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of mountainsides; distinctive present vegetation—singleleaf pinyon, mountainmahogany, mountain big sagebrush, bitterbrush
Inclusion 2: Position on landscape—lower part of mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush, bitterbrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 266)

Woodland

(Sylvaniam Soil)
Site index for common trees: Singleleaf pinyon—75
Most important native understory plants: Mountain big sagebrush, currant, snowberry, curlleaf mountainmahogany, Sandberg bluegrass, prairie junegrass, Wyoming big sagebrush, desert bitterbrush
(Logring Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Black sagebrush, Nevada ephedra, bottlebrush squirreltail, desert bitterbrush, pine bluegrass, galleta

Elements of Wildlife Habitat

Suitability of Sylvaniam soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Logring soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Sylvaniam Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Logring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage, large stones

Interpretive Groups

Capability classification: Sylvaniam soil—VIIs, nonirrigated; Logring soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Woodland suitability group: Sylvaniam soil—2r; Logring soil—1r

TABLE 266.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indiactes that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Sylvaniam	Logring	Rock outcrop	1	2
Muttongrass	POFE	25-40	2-5	---	25-40	2-5
Bluegrass	POA++	10-20	10-20	---	10-20	10-20
Bottlebrush squirreltail	SIHY	5-10	5-15	---	5-10	5-15
Prairie junegrass	KOCR	5-10	---	---	5-10	---
Needlegrass	STIPA	2-5	5-15	---	2-5	5-15
Needleandthread	STCO4	---	2-5	---	---	2-5
Indian ricegrass	ORHY	---	2-5	---	---	2-5
Other perennial grasses	PPGG	5-10	5-10	---	5-10	5-10
Perennial forbs	PPFF	5-15	5-15	---	5-15	5-15
Native annual forbs	AAFF	1-3	1-3	---	1-3	1-3
Mountain big sagebrush	ARTRV	10-20	---	---	10-20	---
Bitterbrush	PURSH	5-15	5-10	---	5-15	5-10
Snowberry	SYMPH	2-5	---	---	2-5	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	2-5	---
Douglas rabbitbrush	CHVI8	1-3	2-5	---	1-3	2-5
Black sagebrush	ARARN	---	15-25	---	---	15-25
Green ephedra	EPVI	---	2-5	---	---	2-5
Other shrubs	SSSS	5-15	5-10	---	5-15	5-10
Singleleaf pinyon	PIMO	2-5	5-10	---	2-5	5-10
Utah juniper	JUOS	1-3	5-10	---	1-3	5-10
Site symbol		029X066N	029X069N	---	029X066N	029X069N
Potential production (lb/acre):						
Favorable years		475	350	---	475	350
Normal years		375	275	---	375	275
Unfavorable years		200	150	---	200	150

960—Beano-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,200 to 5,600 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Beano very gravelly sandy loam, 2 to 8 percent slopes (Haplic Durargids - loamy-skeletal, mixed, mesic, shallow)—60 percent
Wardenot gravelly loamy sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Stonell very gravelly sandy loam, 8 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Izo gravelly loamy sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Leo very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Beano Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—plane to convex
Dominant present vegetation: Shadscale, Bailey greasewood, bud sagebrush, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
15 to 28 inches—cemented
28 to 60 inches or more—stratified extremely gravelly coarse sand to extremely gravelly loamy sand; 5 to 10 percent cobbles and stones and 70 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 15 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Lower side slopes of fan piedmont remnants, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Bailey greasewood, Anderson wolfberry, galleta
Typical profile:
0 to 7 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lower side slopes of fan piedmont remnants; distinctive present vegetation—shadscale, Bailey greasewood, Anderson wolfberry, galleta
Inclusion 2: Position on landscape—drainageways, washes; distinctive present vegetation—burrobrush, Douglas rabbitbrush, shadscale
Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—fourwing saltbush, Nevada dalea, bud sagebrush, spiny hopsage

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 267)

Elements of Wildlife Habitat

Suitability of Beano soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Beano Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

(Wardenot Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, too sandy, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Beano soil—VIIs, nonirrigated; Wardenot soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Beano soil—029X017N; Wardenot soil—029X017N

TABLE 267.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Beano	Wardenot	1	2	3
Galleta	HIJA	10-25	10-25	10-25	---	5-20
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	---
Needlegrass	STIPA	2-5	2-5	2-5	---	2-5
Dropseed	SPORO	---	---	---	---	5-15
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	4-10	4-10	4-10	2-6	5-7
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	2-4
Shadscale	ATCO	10-25	10-25	10-25	---	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	2-10	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10
Winterfat	EULA5	5-10	5-10	5-10	---	5-20
Nevada ephedra	EPNE	1-5	1-5	1-5	2-5	---
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	---	5-15	10-15
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Spiny hopsage	GRSP	---	---	---	---	2-8
Anderson wolfberry	LYAN	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	1-2	1-2	1-2	---	---
Site symbol		029X017N	029X017N	029X017N	029X041N	029X046N
Potential production (lb/acre):						
Favorable years		350	350	350	500	450
Normal years		250	250	250	300	350
Unfavorable years		100	100	100	100	175

961—Beano-Annaw-Wardenot association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,000 to 6,200 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Beano very gravelly sandy loam, 4 to 8 percent slopes (Haplic Durargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Annaw very gravelly loamy sand, dry, 4 to 8 percent slopes (Typic Camborthids - sandy-skeletal, mixed, mesic)—25 percent
Wardenot very gravelly loamy sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durorthids, 4 to 8 percent slopes (Typic Durorthids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Silverbow very stony fine sandy loam, 4 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—4 percent
Inclusion 3: Izo very gravelly sand, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—3 percent

Beano Soil

Position on landscape: Summits of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—plane to convex
Dominant present vegetation: Shadscale, Anderson wolfberry, Nevada ephedra, bud sagebrush, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GC; estimated AASHTO classification - A-2
15 to 28 inches—cemented
28 to 60 inches or more—stratified extremely gravelly coarse sand to extremely gravelly loamy sand; 5 to 10 percent cobbles and stones and 70 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 15 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Annaw Soil

Position on landscape: Side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Anderson wolfberry, Nevada ephedra, bud sagebrush
Typical profile:
0 to 3 inches—very gravelly loamy sand; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
3 to 11 inches—gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
11 to 60 inches or more—stratified extremely gravelly loamy coarse sand to very gravelly sandy loam; 0 to 25 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2);

nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Wardenot Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Anderson wolfberry, bud sagebrush, Nevada ephedra
Typical profile:
0 to 7 inches—very gravelly loamy sand; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
7 to 60 inches or more—stratified very gravelly fine sandy loam to extremely cobbly loamy sand; 10 to 40 percent cobbles and stones and 55 to 80 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.02; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, Anderson wolfberry, Nevada ephedra
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—washes; distinctive present vegetation—burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 268)

Elements of Wildlife Habitat

Suitability of Beano soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Annaw soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Wardenot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Beano Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave, cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Annaw Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Wardenot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave

TABLE 268.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Beano	Annaw	Wardenot	1	2	3
Galleta	HIJA	10-25	10-25	10-25	10-25	5-10	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10	5-20	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	---	---
Needlegrass	STIPA	2-5	2-5	2-5	2-5	---	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	4-10	4-10	4-10	4-10	5-10	2-6
Native annual forbs	AAFF	1-5	1-5	1-5	1-5	2-5	1-5
Shadscale	ATCO	10-25	10-25	10-25	10-25	5-15	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	5-10	5-15	2-10
Bud sagebrush	ARSP5	5-10	5-10	5-10	5-10	5-10	---
Winterfat	EULA5	5-10	5-10	5-10	5-10	---	---
Nevada ephedra	EPNE	1-5	1-5	1-5	1-5	5-10	2-5
Spiny menodora	MESP2	---	---	---	---	10-30	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	1-2	1-2	---	---
Site symbol		029X017N	029X017N	029X017N	029X017N	029X036N	029X041N
Potential production (lb/acre):							
Favorable years		350	350	350	350	400	500
Normal years		250	250	250	250	300	300
Unfavorable years		100	100	100	100	100	100

Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones

Interpretive Groups

Capability classification: Beano soil—VIIs, nonirrigated; Annaw soil—VIIs, nonirrigated; Wardenot soil—VIIs, nonirrigated
Site symbol: Beano soil—029X017N; Annaw soil—029X017N; Wardenot soil—029X017N

970—Blappert-Pumel association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,000 to 6,000 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Blappert very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—55 percent
Pumel very gravelly sandy loam 15 to 50 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Xerollic Haplargids, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—9 percent
Inclusion 2: Xeric Torriorthents, 8 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—3 percent
Inclusion 3: Rock outcrop—3 percent

Blappert Soil

Position on landscape: Upper part of hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, Anderson wolfberry, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 12 inches—very gravelly sandy clay loam, very gravelly coarse sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
12 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Pumel Soil

Position on landscape: Lower part of hills and mountains
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Nevada ephedra, Bailey greasewood, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); granular structure; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, GP-GM, SM, GM; estimated AASHTO classification - A-1
3 to 9 inches—very gravelly coarse sandy loam, extremely gravelly sandy loam; 10 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
9 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—upper part of hills and mountains, mainly north aspects; distinctive present vegetation—black sagebrush, Nevada ephedra, galleta

Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra, galleta

Inclusion 3: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 269)

TABLE 269.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Blappert	Pumel	1	2	3
Galleta	HIJA	10-20	5-20	5-15	1-3	---
Indian ricegrass	ORHY	2-5	5-15	5-10	2-5	---
Needlegrass	STIPA	5-10	5-10	2-10	---	---
Bottlebrush squirreltail	SIHY	---	2-5	1-5	---	---
Bluegrass	POA++	---	---	2-10	---	---
Basin wildrye	ELCI2	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	10-15	5-10	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	5-10	5-10	5-10	---
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	---
Nevada ephedra	EPNE	5-10	2-5	5-10	1-5	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	---	---
Spiny menodora	MESP2	10-25	---	---	---	---
Bailey greasewood	SAVEB	5-10	5-15	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---
Shadscale	ATCO	2-5	15-25	---	---	---
Black sagebrush	ARARN	---	---	15-20	---	---
Winterfat	EULA5	---	---	2-5	---	---
Basin big sagebrush	ARTRT*	---	---	---	10-20	---
Rubber rabbitbrush	CHNA2	---	---	---	2-5	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---
Other shrubs	SSSS	15-25	10-20	10-20	10-25	---
Site symbol		O29XO37N	O29XO22N	O29XO14N	O29XO09N	---
Potential production (lb/acre):						
Favorable years		300	300	500	700	---
Normal years		200	200	300	500	---
Unfavorable years		100	100	100	200	---

Elements of Wildlife Habitat

Suitability of Blappert soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Pumel soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Blappert Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Pumel Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Blappert soil—VIIs, nonirrigated; Pumel soil—VIIs, nonirrigated
Site symbol: Blappert soil—029X037N; Pumel soil—029X022N

971—Blappert-Slatery association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 5,600 to 6,400 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 52 degrees F
Frost-free season—about 120 days

Composition

Blappert very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—55 percent
Slatery very gravelly loam, 15 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous) mesic, shallow)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Armoine very gravelly coarse sandy loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—6 percent
Inclusion 2: Penelas very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Rock outcrop—4 percent

Blappert Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—granitic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, Anderson wolfberry, galleta
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 12 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
12 inches—weathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Slatery Soil

Position on landscape: Lower, south-facing side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, Anderson wolfberry, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—severe; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—north-facing, upper side slopes of hills and mountains; distinctive present vegetation—black sagebrush, Nevada ephedra, galleta

Inclusion 2: Position on landscape—north-facing, upper side slopes of hills and mountains; distinctive present vegetation—black sagebrush, Nevada ephedra, galleta

Inclusion 3: Position on landscape—peaks of hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 270)

Elements of Wildlife Habitat

Suitability of Blappert soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 270.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Blappert	Slatery	1	2	3
Galleta	HIJA	10-20	10-20	5-15	5-15	---
Indian ricegrass	ORHY	2-5	2-5	5-10	5-10	---
Needlegrass	STIPA	5-10	5-10	2-10	2-10	---
Bluegrass	POA++	---	---	2-10	2-10	---
Bottlebrush squirreltail	SIHY	---	---	1-5	1-5	---
Other perennial grasses	PPGG	5-10	5-10	10-15	10-15	---
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	---
Perennial forbs	PPFF	5-10	5-10	5-10	5-10	---
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	---
Nevada ephedra	EPNE	5-10	5-10	5-10	5-10	---
Bud sagebrush	ARSP5	2-5	2-5	2-5	2-5	---
Spiny menodora	MESP2	10-25	10-25	---	---	---
Bailey greasewood	SAVEB	5-10	5-10	---	---	---
Anderson wolfberry	LYAN	5-10	5-10	---	---	---
Shadscale	ATCO	2-5	2-5	---	---	---
Black sagebrush	ARARN	---	---	15-20	15-20	---
Winterfat	EULA5	---	---	2-5	2-5	---
Other shrubs	SSSS	15-25	15-25	10-20	10-20	---
Site symbol		029X037N	029X037N	029X014N	029X014N	---
Potential production (lb/acre):						
Favorable years		300	300	500	500	---
Normal years		200	200	300	300	---
Unfavorable years		100	100	100	100	---

Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Blappert Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Blappert soil—VIIs, nonirrigated; Slatery soil—VIIs, nonirrigated
Site symbol: Blappert soil—029X037N; Slatery soil—029X037N

980—Geer fine sandy loam, 0 to 4 percent slopes

Map Unit Setting

Position on landscape: Fan skirts
Elevation: 5,000 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Geer fine sandy loam, 0 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—90 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Papoose gravelly sandy loam, 0 to 4 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—4 percent

Geer Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Winterfat, bud sagebrush, shadscale
Typical profile:
0 to 4 inches—fine sandy loam; platy structure; slightly hard, very friable; strongly alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
4 to 42 inches—stratified fine sandy loam to silt loam; massive; slightly hard, very friable; very strongly alkaline (pH 9.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - ML, SM, SM-SC, CL-ML; estimated AASHTO classification - A-4
42 to 60 inches or more—gravelly silt loam, gravelly fine sandy loam, silt loam; 10 to 45 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GM-GC, ML, CL-ML; estimated AASHTO classification - A-2, A-4

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 10 to 11 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush, Douglas rabbitbrush
Inclusion 2: Position on landscape—lake-plain terraces adjacent to fan skirts; distinctive present vegetation—shadscale, Bailey greasewood, bud sagebrush

Major Uses

Current uses: Rangeland, wildlife habitat
Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 271)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Slight
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping

Interpretive Groups

Capability classification: I, irrigated, and VIIc, nonirrigated
Site symbol: 029X020N

TABLE 271.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions		
		Component name	Inclusion number--	
		Geer	1	2
Galleta	HIJA	5-20	---	10-25
Indian ricegrass	ORHY	5-15	5-10	5-10
Needlegrass	STIPA	2-10	---	2-5
Bottlebrush squirreltail	SIHY	1-5	---	2-5
Other perennial grasses	PPGG	5-10	5-10	5-15
Native annual grasses	AAGG	1-5	2-4	1-5
Perennial forbs	PPFF	5-10	2-6	4-10
Native annual forbs	AAFF	1-5	1-5	1-5
Winterfat	EULA5	20-30	---	5-10
Bud sagebrush	ARSP5	10-15	---	5-10
Fourwing saltbush	ATCA2	2-10	5-15	---
Nevada ephedra	EPNE	1-5	2-5	1-5
Rubber rabbitbrush	CHNA2	---	10-25	---
Burrobrush	HYMEN3	---	5-10	---
Littleleaf horsebrush	TEGL	---	5-10	---
Bailey greasewood	SAVEB	---	2-10	5-10
Cooper wolfberry	LYCO2	---	2-5	---
Shadscale	ATCO	---	---	10-25
Other shrubs	SSSS	10-15	10-20	10-20
Joshua-tree	YUBR	---	---	1-2
Site symbol		029X020N	029X041N	029X017N
Potential production (lb/acre):				
Favorable years		400	500	350
Normal years		250	300	250
Unfavorable years		100	100	100

990—Sodaspring-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,200 to 5,800 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Sodaspring loamy sand, 2 to 4 percent slopes (Typic Torriorthents - coarse-loamy, mixed (calcareous), mesic)—70 percent
Izo very gravelly sand, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly sandy loam, 2 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Gynelle very gravelly sand, alkali, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent

Sodaspring Soil

Position on landscape: Lower part of fan piedmonts, fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, Cooper wolfberry, bud sagebrush
Typical profile:
0 to 3 inches—loamy sand; 0 to 10 percent cobbles and stones and 0 to 15 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 60 inches or more—stratified very gravelly coarse sand to sandy loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 4 to 5 inches
Water supplying capacity: 4 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, GP, GP-GM, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December to August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lower part of fan piedmonts; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—lower part of inset fans; distinctive present vegetation—black greasewood, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 272)

Elements of Wildlife Habitat

Suitability of Sodaspring soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Sodaspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines

TABLE 272.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Sodaspring	Izo	1	2
Indian ricegrass	ORHY	10-20	5-10	5-10	2-5
Bottlebrush squirreltail	SIHY	5-10	---	2-5	1-2
Galleta	HIJA	---	---	10-25	1-2
Needlegrass	STIPA	---	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-15	2-5
Native annual grasses	AAGG	---	2-4	1-5	2-5
Perennial forbs	PPFF	3-7	2-6	4-10	2-6
Native annual forbs	AAFF	2-5	1-5	1-5	3-5
Shadscale	ATCO	10-20	---	10-25	30-50
Cooper wolfberry	LYCO2	5-20	2-5	---	---
Bailey greasewood	SAVEB	5-10	2-10	5-10	5-10
Rubber rabbitbrush	CHNA2	---	10-25	---	---
Fourwing saltbush	ATCA2	---	5-15	---	---
Burrobrush	HYMEN3	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---
Nevada ephedra	EPNE	---	2-5	1-5	---
Bud sagebrush	ARSP5	---	---	5-10	---
Winterfat	EULA5	---	---	5-10	---
Black greasewood	SAVE4	---	---	---	10-20
Other shrubs	SSSS	5-15	10-20	10-20	10-25
Joshua-tree	YUBR	---	---	1-2	---
Site symbol		O27X043N	O29X041N	O29X017N	O29X063N
Potential production (lb/acre):					
Favorable years		400	500	350	200
Normal years		200	300	250	100
Unfavorable years		100	100	100	50

Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

(Izo Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Sodaspring soil—IVe, irrigated, and VIIs, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Sodaspring soil—027X043N; Izo soil—029X041N

1000—Keefa-Itme association

Map Unit Setting

Position on landscape: Fan skirts, inset fans
Elevation: 4,800 to 5,200 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Keefa sandy loam, 0 to 4 percent slopes (Duric Camborthids - coarse-loamy, mixed, mesic)—70 percent
Itme gravelly loamy sand, dry, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torriorthents, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Duric Haplargids, 2 to 8 percent slopes (Duric Haplargids - fine-loamy, mixed, mesic)—4 percent

Keefa Soil

Position on landscape: Fan skirts
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass, winterfat
Typical profile:
0 to 5 inches—sandy loam; 0 to 20 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
5 to 27 inches—sandy loam, gravelly sandy loam, gravelly coarse sandy loam; 0 to 35 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
27 to 36 inches—gravelly sandy loam, gravelly coarse sandy loam; 25 to 50 percent pebbles (by weight); massive; hard, firm; very strongly alkaline (pH 9.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
36 to 60 inches or more—stratified very gravelly sand to gravelly sandy loam; 25 to 50 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 6 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Itme Soil

Position on landscape: Inset fans
Parent material: Kind—alluvium; source—granitic rock
Slope features: Length—long; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 3 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 40 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 41 inches—very gravelly loamy sand, very gravelly sand; 0 to 25 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, SP; estimated AASHTO classification - A-1
41 to 60 inches or more—gravelly sandy loam; 0 to 15 percent cobbles and stones and 25 to 50 percent pebbles (by weight); massive; slightly hard, friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 3.0 to 4.5 inches
Water supplying capacity: 5 inches

Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, rabbitbrush, burrobrush
Inclusion 2: Position on landscape—fan remnants; distinctive present vegetation—shadscale, bud sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 273)

Elements of Wildlife Habitat

Suitability of Keefa soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Itme soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Keefa Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Itme Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Keefa soil—IVe, irrigated, and VIIc, nonirrigated; Itme soil—IVs, irrigated, and VIIs, nonirrigated
Site symbol: Keefa soil—029X017N; Itme soil—029X017N

TABLE 273.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Keefa	Itme	1	2
Galleta	HIJA	10-25	10-25	---	10-25
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5
Needlegrass	STIPA	2-5	2-5	---	2-5
Other perennial grasses	PPGG	5-15	5-15	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	2-4	1-5
Perennial forbs	PPFF	4-10	4-10	2-6	4-10
Native annual forbs	AAFF	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	---	10-25
Bailey greasewood	SAVEB	5-10	5-10	2-10	5-10
Bud sagebrush	ARSP5	5-10	5-10	---	5-10
Winterfat	EULA5	5-10	5-10	---	5-10
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5
Rubber rabbitbrush	CHNA2	---	---	10-25	---
Fourwing saltbush	ATCA2	---	---	5-15	---
Burrobrush	HYMEN3	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	2-5	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2
Site symbol		O29XO17N	O29XO17N	O29XO41N	O29XO17N
Potential production (lb/acre):					
Favorable years		350	350	500	350
Normal years		250	250	300	250
Unfavorable years		100	100	100	100

1010—Scottcas Variant very gravelly sandy loam, 4 to 30 percent slopes

Map Unit Setting

Position on landscape: Partial ballenas
Elevation: 4,600 to 5,400 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 58 degrees F
Frost-free season—about 170 days

Composition

Scottcas Variant very gravelly sandy loam, 4 to 30 percent slopes (Haplic Durargids - loamy-skeletal, mixed, thermic, shallow)—85 percent
Contrasting inclusions as follows—
Inclusion 1: Duric Haplargids, 4 to 30 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—9 percent
Inclusion 2: Scottcas very gravelly sandy loam, 8 to 15 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—4 percent
Inclusion 3: Arizo very gravelly loamy sand, occasionally flooded, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—2 percent

Scottcas Variant Soil

Position on landscape: Partial ballenas
Parent material: Mixed alluvium
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Blackbrush, spiny menodora, Nevada ephedra, galleta, shadscale
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 45 to 65 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very gravelly sandy clay loam, very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2
8 to 12 inches—very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM; estimated AASHTO classification - A-1
12 inches—cemented
Range in depth to cemented layer: 8 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the cemented layer—moderately slow
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—partial ballenas; distinctive present vegetation—blackbrush
Inclusion 2: Position on landscape—side slopes of partial ballenas; distinctive present vegetation—blackbrush
Inclusion 3: Position on landscape—washes; distinctive present vegetation—burrobrush, creosotebush, buckwheat, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 274)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan, slope
Local roads and streets: Severe—cemented pan, slope
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, seepage

Interpretive Groups

Capability classification: VIIs, nonirrigated
Site symbol: 029X013N

TABLE 274.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name	Inclusion number--		
		Scottcas Variant	1	2	3
Galleta	HIJA	5-10	1-5	---	---
Indian ricegrass	ORHY	2-5	2-5	2-5	1-5
Needlegrass	STIPA	1-5	2-5	2-5	1-5
Bluegrass	POA++	---	1-5	---	---
Bottlebrush squirreltail	SIHY	---	---	1-3	---
Other perennial grasses	PPGG	5-10	2-8	2-7	5-10
Native annual grasses	AAGG	1-5	1-5	2-5	1-5
Perennial forbs	PPFF	5-10	2-8	3-10	2-8
Native annual forbs	AAFF	1-5	1-5	3-7	1-5
Blackbrush	CORA	20-35	25-35	---	---
Nevada ephedra	EPNE	2-5	2-5	3-8	---
Bud sagebrush	ARSP5	1-5	---	---	---
Fourwing saltbush	ATCA2	1-3	---	---	---
Spiny menodora	MESP2	---	1-5	1-5	---
Desert pepperweed	LEFR2	---	1-5	---	---
Shadscale	ATCO	---	---	5-25	---
Anderson wolfberry	LYAN	---	---	5-10	---
Creosotebush	LADI2	---	---	5-10	15-25
White bursage	FRDU	---	---	5-10	5-10
Bud sagebrush	ARSP3	---	---	3-10	---
Cattle saltbush	ATPO	---	---	---	2-5
White burrobrush	HYSA	---	---	---	2-5
Other shrubs	SSSS	5-20	20-40	10-25	20-40
Site symbol		029X013N	030X094N	030X061N	030X076N
Potential production (lb/acre):					
Favorable years		500	350	300	600
Normal years		300	225	180	400
Unfavorable years		150	75	80	200

1020—Upspring very cobbly sandy loam, 4 to 30 percent slopes

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 4,000 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 190 days

Composition

Upspring very cobbly sandy loam, 4 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—85 percent
Contrasting inclusions as follows—
Inclusion 1: Lithic Haplargids, 8 to 30 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, thermic)—8 percent
Inclusion 2: Yermo very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—4 percent
Inclusion 3: Rock outcrop—3 percent

Upspring Soil

Position on landscape: Hills, mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Creosotebush, white bursage, shadscale
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 60 percent cobbles and stones and 35 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
2 to 12 inches—very gravelly fine sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
12 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stable areas on hills and mountains; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 2: Position on landscape—inset fans adjacent to hills and mountains; distinctive present vegetation—white bursage, shadscale
Inclusion 3: Position on landscape—small peaks and ridges on hills and mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 275)

Elements of Wildlife Habitat

Suitability for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—thin layer
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—seepage, thin layer

Interpretive Groups

Capability classification: VIIs, nonirrigated
Site symbol: 030X044N

TABLE 275.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indiactes that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name	Inclusion number--		
		Upspring	1	2	3
Needlegrass	STIPA	3-5	3-5	2-5	---
Indian ricegrass	ORHY	1-5	1-5	2-5	---
Bottlebrush squirreltail	SIHY	1-2	1-2	1-3	---
Other perennial grasses	PPGG	2-5	2-5	2-7	---
Native annual grasses	AAGG	1-5	1-5	2-5	---
Perennial forbs	PPFF	5-7	5-7	3-10	---
Native annual forbs	AAFF	3-6	3-6	3-7	---
Shadscale	ATCO	20-40	20-40	5-25	---
Anderson wolfberry	LYAN	5-10	5-10	5-10	---
Nevada ephedra	EPNE	5-10	5-10	3-8	---
White bursage	FRDU	2-5	2-5	5-10	---
Spiny menodora	MESP2	2-5	2-5	1-5	---
Creosotebush	LADI2	---	---	5-10	---
Bud sagebrush	ARSP3	---	---	3-10	---
Other shrubs	SSSS	10-20	10-20	10-25	---
Site symbol		030X044N	030X044N	030X061N	---
Potential production (lb/acre):					
Favorable years		250	250	300	---
Normal years		150	150	180	---
Unfavorable years		50	50	80	---

1021—Upspring-Skelon-Rock outcrop association

Map Unit Setting

Position on landscape: Rock pediments, hills, fan remnants
Elevation: 4,200 to 4,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 58 degrees F
Frost-free season—about 200 days

Composition

Upspring very cobbly sandy loam, 8 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—45 percent
Skelon very gravelly sandy loam, 4 to 8 percent slopes (Typic Durorthids - loamy-skeletal, mixed, thermic)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Yermo very gravelly sandy loam, 4 to 5 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—9 percent
Inclusion 2: Scottcas very gravelly sandy loam, 4 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, thermic)—3 percent
Inclusion 3: Arizo very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic)—3 percent

Upspring Soil

Position on landscape: Hills, rock pediments
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Creosotebush, white bursage, shadscale
Typical profile:
0 to 2 inches—very cobbly sandy loam; 25 to 60 percent cobbles and stones and 35 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
2 to 12 inches—very gravelly fine sandy loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
12 inches—unweathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Skelon Soil

Position on landscape: Fan remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, creosotebush, white bursage
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 23 inches—stratified very gravelly fine sandy loam to very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
23 to 44 inches—indurated
Range in depth to indurated layer: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—2; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Shoulders and side slopes of hills, remnants of rock pediments
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—inset fans, side slopes of fan remnants; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 2: Position on landscape—fan piedmont remnants; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—creosotebush, white bursage, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 276)

Elements of Wildlife Habitat

Suitability of Akela soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Skelon soil for named elements:

TABLE 276.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Upspring	Skelon	Rock outcrop	1	2	3
Needlegrass	STIPA	3-5	2-5	---	2-5	2-5	2-5
Indian ricegrass	ORHY	1-5	2-5	---	2-5	2-5	2-5
Bottlebrush squirreltail	SIHY	1-2	1-3	---	1-3	1-3	1-3
Other perennial grasses	PPGG	2-5	2-7	---	2-7	2-7	2-7
Native annual grasses	AAGG	1-5	2-5	---	2-5	2-5	2-5
Perennial forbs	PPFF	5-7	3-10	---	3-10	3-10	3-10
Native annual forbs	AAFF	3-6	3-7	---	3-7	3-7	3-7
Shadscale	ATCO	20-40	5-25	---	5-25	5-25	5-25
Anderson wolfberry	LYAN	5-10	5-10	---	5-10	5-10	5-10
Nevada ephedra	EPNE	5-10	3-8	---	3-8	3-8	3-8
White bursage	FRDU	2-5	5-10	---	5-10	5-10	5-10
Spiny menodora	MESP2	2-5	1-5	---	1-5	1-5	1-5
Creosotebush	LADI2	---	5-10	---	5-10	5-10	5-10
Bud sagebrush	ARSP3	---	3-10	---	3-10	3-10	3-10
Other shrubs	SSSS	10-20	10-25	---	10-25	10-25	10-25
Site symbol		030X044N	030X061N	---	030X061N	030X061N	030X061N
Potential production (lb/acre):							
Favorable years		250	300	---	300	300	300
Normal years		150	180	---	180	180	180
Unfavorable years		50	80	---	80	80	80

Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Upspring Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—thin layer
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—thin layer, seepage
(Skelon Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Moderate—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—small stones
Gravel: Improbable source—thin layer
Embankments, dikes, and levees: Severe—thin layer, seepage

Interpretive Groups

Capability classification: Upspring soil—VIIs, nonirrigated; Skelon soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Upspring soil—030X044N; Skelon soil—030X061N

1030—Papoose-Roic-Cirac association

Map Unit Setting

Position on landscape: Lake-plain terraces, rock pediments
Elevation: 4,900 to 5,200 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Papoose sandy loam, 0 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—50 percent
Roic very gravelly loam, 4 to 8 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—20 percent
Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 0 to 4 percent slopes (Typic Durargids - loamy, mixed, mesic, shallow)—7 percent
Inclusion 2: Gullied land—5 percent
Inclusion 3: Stumble loamy sand, 4 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—3 percent

Papoose Soil

Position on landscape: Lake-plain terraces
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Bailey greasewood
Typical profile:
0 to 6 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
6 to 11 inches—sandy clay loam, sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6
11 to 24 inches—sandy loam, fine sandy loam; 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-2, A-4
24 to 36 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
36 to 60 inches or more—very gravelly coarse sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—3; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Roic Soil

Position on landscape: Eroded rock pediments
Parent material: Kind—residuum, colluvium; source—sedimentary rocks
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, kochia
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid

Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Cirac Soil

Position on landscape: Lake-plain terraces
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale
Typical profile:
0 to 4 inches sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—lake-plain terraces; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—finely dissected areas of lake-plain terraces; distinctive present vegetation—barren
Inclusion 3: Position on landscape—sand sheets and sand dunes on lake-plain terraces; distinctive present vegetation—fourwing saltbush, Nevada dalea, Indian ricegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 277)

Elements of Wildlife Habitat

Suitability of Papoose soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Papoose Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium

Interpretive Groups

Capability classification: Papoose soil—IIIe, irrigated, and VIIc, nonirrigated; Roic soil—VIIs, nonirrigated; Cirac soil—VIIs, nonirrigated

TABLE 277.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Papoose	Roic	Cirac	1	2	3
Galleta	HIJA	10-25	10-25	---	10-25	---	2-5
Indian ricegrass	ORHY	5-10	5-10	---	5-10	---	20-30
Bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	---	---
Needlegrass	STIPA	2-5	2-5	---	2-5	---	2-5
Alkali sacaton	SPAI	---	---	10-15	---	---	---
Basin wildrye	ELCI2	---	---	5-10	---	---	---
Inland saltgrass	DIST	---	---	1-5	---	---	---
Dropseed	SPORO	---	---	---	---	---	5-25
Other perennial grasses	PPGG	5-15	5-15	5-15	5-15	---	5-15
Native annual grasses	AAGG	1-5	1-5	2-5	1-5	---	2-5
Perennial forbs	PPFF	4-10	4-10	5-10	4-10	---	5-10
Native annual forbs	AAFF	1-5	1-5	2-5	1-5	---	2-5
Shadscale	ATCO	10-25	10-25	15-30	10-25	---	---
Bailey greasewood	SAVEB	5-10	5-10	---	5-10	---	---
Bud sagebrush	ARSP5	5-10	5-10	---	5-10	---	5-10
Winterfat	EULA5	5-10	5-10	---	5-10	---	5-20
Nevada ephedra	EPNE	1-5	1-5	---	1-5	---	---
Black greasewood	SAVE4	---	---	5-15	---	---	---
Cooper wolfberry	LYCO2	---	---	5-10	---	---	---
Anderson wolfberry	LYAN	---	---	5-10	---	---	---
Rubber rabbitbrush	CHNA2	---	---	2-5	---	---	---
Fourwing saltbush	ATCA2	---	---	2-5	---	---	15-25
Basin big sagebrush	ARTRT*	---	---	2-5	---	---	---
Spiny hopsage	GRSP	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	---	10-20
Joshua-tree	YUBR	1-2	1-2	---	1-2	---	---
Site symbol		029X017N	029X017N	029X024N	029X017N	---	029X012N
Potential production (lb/acre):							
Favorable years		350	350	800	350	---	500
Normal years		250	250	350	250	---	350
Unfavorable years		100	100	150	100	---	200

Site symbol: Papoose soil—029X017N; Roic soil—029X017N; Cirac soil—029X024N

1031—Papoose sandy loam, 0 to 8 percent slopes

Map Unit Setting

Position on landscape: Lake-plain terraces
Elevation: 4,800 to 5,100 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Papoose sandy loam, 0 to 8 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—85 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Torrifluvents, 0 to 4 percent slopes (Typic Torrifluvents - coarse-silty, mixed (calcareous), mesic)—9 percent
Inclusion 2: Roic very gravelly loam, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—5 percent
Inclusion 3: Typic Torriorthents, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Papoose Soil

Position on landscape: Dissected lake-plain terraces
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush
Typical profile:
0 to 6 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
6 to 11 inches—sandy clay loam, sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6
11 to 24 inches—sandy loam, fine sandy loam; 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-2, A-4
24 to 36 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
36 to 60 inches or more—very gravelly coarse sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—3; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—stream terraces adjacent to lake-plain terraces; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—eroded rock pediments; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—burrobrush, shadscale, rabbitbrush

Major Uses

Current uses: Rangeland, wildlife habitat
Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 278)

Elements of Wildlife Habitat

Suitability for named elements:
Grain and seed crops (irrigated)—fair
Domestic grasses and legumes (irrigated)—fair
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Wetland plants—poor
Shallow water areas—very poor

Ratings for Selected Uses

Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good

TABLE 278.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name	Inclusion number--		
		Papoose	1	2	3
Galleta	HIJA	10-25	10-25	10-25	---
Indian ricegrass	ORHY	5-10	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---
Needlegrass	STIPA	2-5	2-5	2-5	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	4-10	4-10	4-10	2-6
Native annual forbs	AAFF	1-5	1-5	1-5	1-5
Shadscale	ATCO	10-25	10-25	10-25	---
Bailey greasewood	SAVEB	5-10	5-10	5-10	2-10
Bud sagebrush	ARSP5	5-10	5-10	5-10	---
Winterfat	EULA5	5-10	5-10	5-10	---
Nevada ephedra	EPNE	1-5	1-5	1-5	2-5
Rubber rabbitbrush	CHNA2	---	---	---	10-25
Pourwing saltbush	ATCA2	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	1-2	1-2	---
Site symbol		029X017N	029X017N	029X017N	029X041N
Potential production (lb/acre):					
Favorable years		350	350	350	500
Normal years		250	250	250	300
Unfavorable years		100	100	100	100

Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: IIIe, irrigated, and VIIc, nonirrigated
Site symbol: 029X017N

1032—Papoose-Cirac association

Map Unit Setting

Position on landscape: Lake plains
Elevation: 4,600 to 4,900 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 160 days

Composition

Papoose sandy loam, 0 to 2 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—60 percent
Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—30 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torrifluvents, 0 to 2 percent slopes (Xeric Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—6 percent
Inclusion 2: Typic Torriorthents, 0 to 2 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Papoose Soil

Position on landscape: Lake plains
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, kochia
Typical profile:
0 to 6 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
6 to 11 inches—sandy clay loam, sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6
11 to 24 inches—sandy loam, fine sandy loam; 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-2, A-4
24 to 36 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
36 to 60 inches or more—very gravelly coarse sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—3; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Cirac Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black greasewood, shadscale, rabbitbrush
Typical profile:
0 to 4 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; slightly hard, friable; strongly alkaline (pH 9.0); strongly saline (more than 16 mmhos/cm); slightly sodic (SAR 13 to 30); estimated Unified classification - SM; estimated AASHTO classification - A-4
4 to 60 inches or more—stratified gravelly sand to silt loam; 0 to 25 percent pebbles (by weight); massive; hard, friable; strongly alkaline (pH 8.8); strongly saline (more than 16 mmhos/cm); strongly sodic (SAR 46 to 200); estimated Unified classification - SM; estimated AASHTO classification - A-4
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderately rapid
Available water capacity: 6.5 to 7.5 inches
Water supplying capacity: 4 inches
Runoff: Very slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.24; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush, rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 279)

Elements of Wildlife Habitat

Suitability of Papoose soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Cirac soil for named elements:
Wild herbaceous plants (nonirrigated)—very poor
Shrubs (nonirrigated)—very poor

Ratings for Selected Uses

(Papoose Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Cirac Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: improbable source—excess fines
Embankments, dikes, and levees: Severe—piping, excess salt, excess sodium

Interpretive Groups

Capability classification: Papoose soil—IIs, irrigated, and VIIc, nonirrigated; Cirac soil—VIIs, nonirrigated
Site symbol: Papoose soil—029X017N; Cirac soil—029X024N

TABLE 279.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Papoose	Cirac	1	2
Galleta	HIJA	10-25	---	---	---
Indian ricegrass	ORHY	5-10	---	---	5-10
Bottlebrush squirreltail	SIHY	2-5	---	---	---
Needlegrass	STIPA	2-5	---	1-5	---
Alkali sacaton	SPAI	---	10-15	1-5	---
Basin wildrye	ELCI2	---	5-10	15-30	---
Inland saltgrass	DIST	---	1-5	---	---
Western wheatgrass	AGSM	---	---	5-10	---
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10
Native annual grasses	AAGG	1-5	2-5	2-8	2-4
Perennial forbs	PPFF	4-10	5-10	2-7	2-6
Native annual forbs	AAFF	1-5	2-5	1-5	1-5
Shadscale	ATCO	10-25	15-30	---	---
Bailey greasewood	SAVEB	5-10	---	---	2-10
Bud sagebrush	ARSP5	5-10	---	---	---
Winterfat	EULA5	5-10	---	---	---
Nevada ephedra	EPNE	1-5	---	---	2-5
Black greasewood	SAVE4	---	5-15	---	---
Cooper wolfberry	LYCO2	---	5-10	---	2-5
Anderson wolfberry	LYAN	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	2-5	1-5	10-25
Fourwing saltbush	ATCA2	---	2-5	---	5-15
Basin big sagebrush	ARTRT*	---	2-5	1-5	---
Rose	ROSA+	---	---	0-5	---
Burrobrush	HYMEN3	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	5-10
Other shrubs	SSSS	10-20	10-20	2-10	10-20
Joshua-tree	YUBR	1-2	---	---	---
Willow	SALIX	---	---	0-2	---
Site symbol		029X017N	029X024N	029X003N	029X041N
Potential production (lb/acre):					
Favorable years		350	800	3,000	500
Normal years		250	350	2,000	300
Unfavorable years		100	150	800	100

1033—Papoose-Roic association

Map Unit Setting

Position on landscape: Lake-plain terraces, rock pediments
Elevation: 4,800 to 5,100 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Papoose sandy loam, 0 to 4 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—50 percent
Roic very gravelly loam, dry, 4 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—45 percent
Contrasting inclusion as follows—
Inclusion 1: Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—5 percent

Papoose Soil

Position on landscape: Lake-plain terraces
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 6 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
6 to 11 inches—sandy clay loam, sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6
11 to 24 inches—sandy loam, fine sandy loam; 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-2, A-4
24 to 36 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
36 to 60 inches or more—very gravelly coarse sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—3; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Roic Soil

Position on landscape: Eroded rock pediments
Parent material: Kind—residuum, colluvium; source—sedimentary rocks
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML, SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 3 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Contrasting Inclusion

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—shadscale, black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 280)

Elements of Wildlife Habitat

Suitability of Papoose soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Papoose Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Papoose soil—IIe, irrigated, and VIIc, nonirrigated; Roic soil—VIIs, nonirrigated
Site symbol: Papoose soil—029X017N; Roic soil—029X033N

TABLE 280.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions		
		Component name		Inclusion number--
		Papoose	Roic	1
Galleta	HIJA	10-25	---	---
Indian ricegrass	ORHY	5-10	2-5	---
Bottlebrush squirreltail	SIHY	2-5	1-2	---
Needlegrass	STIPA	2-5	---	---
King desertgrass	BLKI	---	1-2	---
Alkali sacaton	SPAI	---	---	10-15
Basin wildrye	ELCI2	---	---	5-10
Inland saltgrass	DIST	---	---	1-5
Other perennial grasses	PPGG	5-15	1-5	5-15
Native annual grasses	AAGG	1-5	1-5	2-5
Perennial forbs	PPFF	4-10	2-5	5-10
Native annual forbs	AAFF	1-5	1-5	2-5
Shadscale	ATCO	10-25	40-60	15-30
Bailey greasewood	SAVEB	5-10	10-15	---
Bud sagebrush	ARSP5	5-10	2-5	---
Winterfat	EULA5	5-10	---	---
Nevada ephedra	EPNE	1-5	---	---
Nevada dalea	DAPO2	---	5-10	---
Cooper wolfberry	LYCO2	---	2-5	5-10
Black greasewood	SAVE4	---	---	5-15
Anderson wolfberry	LYAN	---	---	5-10
Rubber rabbitbrush	CHNA2	---	---	2-5
Fourwing saltbush	ATCA2	---	---	2-5
Basin big sagebrush	ARTRT*	---	---	2-5
Other shrubs	SSSS	10-20	5-15	10-20
Joshua-tree	YUBR	1-2	---	---
Site symbol		029X017N	029X033N	029X024N
Potential production (lb/acre):				
Favorable years		350	100	800
Normal years		250	50	350
Unfavorable years		100	25	150

1034—Papoose-Izo association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,100 to 5,400 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 130 days

Composition

Papoose sandy loam, 0 to 4 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—80 percent
Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Haplic Durargids, 2 to 4 percent slopes (Haplic Durargids - fine-loamy, mixed, mesic)—3 percent
Inclusion 2: Cirac sandy loam, 0 to 2 percent slopes (Typic Torrifluvents - coarse-loamy, mixed (calcareous), mesic)—2 percent

Papoose Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, winterfat
Typical profile:
0 to 6 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
6 to 11 inches—sandy clay loam, sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6
11 to 24 inches—sandy loam, fine sandy loam; 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-2, A-4
24 to 36 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
36 to 60 inches or more—very gravelly coarse sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—3; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Izo Soil

Position on landscape: Drainageways
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Burrobrush, shadscale, rabbitbrush
Typical profile:
0 to 8 inches—very gravelly sand; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); single grain; loose; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP, GP, GP-GM, SP-SM; estimated AASHTO classification - A-1
8 to 60 inches or more—stratified gravelly loamy sand to extremely gravelly coarse sand; 0 to 15 percent cobbles and stones and 65 to 85 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—December to August
Permeability: Rapid
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—3

Hazard of erosion: By water—severe (flash floods); by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush, winterfat
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, black greasewood

Major Uses

Current uses: Rangeland, wildlife habitat
Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 281)

Elements of Wildlife Habitat

Suitability of Papoose soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Izo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Papoose Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Izo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Papoose soil—IIe, irrigated, and VIIc, nonirrigated; Izo soil—VIIw, nonirrigated
Site symbol: Papoose soil—029X017N; Izo soil—029X041N

TABLE 281.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions			
		Component name		Inclusion number--	
		Papoose	Izo	1	2
Galleta	HIJA	10-25	---	10-25	---
Indian ricegrass	ORHY	5-10	5-10	5-10	---
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---
Needlegrass	STIPA	2-5	---	2-5	---
Alkali sacaton	SPAI	---	---	---	10-15
Basin wildrye	ELCI2	---	---	---	5-10
Inland saltgrass	DIST	---	---	---	1-5
Other perennial grasses	PPGG	5-15	5-10	5-15	5-15
Native annual grasses	AAGG	1-5	2-4	1-5	2-5
Perennial forbs	PPFF	4-10	2-6	4-10	5-10
Native annual forbs	AAFF	1-5	1-5	1-5	2-5
Shadscale	ATCO	10-25	---	10-25	15-30
Bailey greasewood	SAVEB	5-10	2-10	5-10	---
Bud sagebrush	ARSP5	5-10	---	5-10	---
Winterfat	EULA5	5-10	---	5-10	---
Nevada ephedra	EPNE	1-5	2-5	1-5	---
Rubber rabbitbrush	CHNA2	---	10-25	---	2-5
Fourwing saltbush	ATCA2	---	5-15	---	2-5
Burrobrush	HYMEN3	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	5-10	---	---
Cooper wolfberry	LYCO2	---	2-5	---	5-10
Black greasewood	SAVE4	---	---	---	5-15
Anderson wolfberry	LYAN	---	---	---	5-10
Basin big sagebrush	ARTRT*	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	1-2	---	1-2	---
Site symbol		O29XO17N	O29XO41N	O29XO17N	O29XO24N
Potential production (lb/acre):					
Favorable years		350	500	350	800
Normal years		250	300	250	350
Unfavorable years		100	100	100	150

1035—Papoose-Stumble association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 5,000 to 5,300 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 52 degrees F
Frost-free season—about 140 days

Composition

Papoose sandy loam, 0 to 4 percent slopes (Typic Haplargids - fine-loamy, mixed, mesic)—70 percent
Stumble loamy sand, 2 to 15 percent slopes (Typic Torripsamments - mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Durargids, 0 to 4 percent slopes (Typic Durargids - loamy, mixed, mesic, shallow)—5 percent
Inclusion 2: Izo very gravelly sand, 0 to 4 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Typic Torriorthents, 2 to 8 percent slopes (Typic Torriorthents - sandy, mixed, mesic)—5 percent

Papoose Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 6 inches—sandy loam; 0 to 10 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, ML; estimated AASHTO classification - A-4
6 to 11 inches—sandy clay loam, sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL; estimated AASHTO classification - A-6
11 to 24 inches—sandy loam, fine sandy loam; 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - SM, ML; estimated AASHTO classification - A-2, A-4
24 to 36 inches—gravelly loamy sand; 25 to 50 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
36 to 60 inches or more—very gravelly coarse sand; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.8); slightly saline (4 to 8 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 4 to 5 inches
Water supplying capacity: 5 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.37; T value—3; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Stumble Soil

Position on landscape: Sand sheets on fan piedmonts
Parent material: Mixed alluvium influenced by eolian material
Slope features: Length—long; shape—smooth
Dominant present vegetation: Nevada dalea, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 4 inches—loamy sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
4 to 21 inches—loamy sand, loamy fine sand; 0 to 5 percent cobbles and stones and 0 to 15 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
21 to 60 inches or more—gravelly loamy sand, gravelly loamy fine sand; 0 to 10 percent cobbles and stones and 30 to 50 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
Depth to seasonal high water table: More than 60 inches

Hazard of flooding: None
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—5; wind erodibility group—2
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush, rabbitbrush
Inclusion 3: Position on landscape—sand sheets on fan piedmonts; distinctive present vegetation—Nevada dalea, spiny hopsage, littleleaf horsebrush

Major Uses

Current uses: Rangeland, wildlife habitat
Potential foreseeable use: Irrigated cropland if irrigation water is made available

Potential Native Plant Community (Table 282)

Elements of Wildlife Habitat

Suitability of Papoose soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Suitability of Stumble soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Papoose Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, excess salt, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Slight
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Stumble Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, too sandy
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Papoose soil—IIe, irrigated, and VIIc, nonirrigated; Stumble soil—IIIs, irrigated, and VIIs, nonirrigated
Site symbol: Papoose soil—029X017N; Stumble soil—029X012N

TABLE 282.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Papoose	Stumble	1	2	3
Galleta	HIJA	10-25	2-5	10-25	---	5-20
Indian ricegrass	ORHY	5-10	20-30	5-10	5-10	5-10
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	---
Needlegrass	STIPA	2-5	2-5	2-5	---	2-5
Dropseed	SPORO	---	5-25	---	---	5-15
Other perennial grasses	PPGG	5-15	5-15	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	2-5	1-5	2-4	1-5
Perennial forbs	PPFF	4-10	5-10	4-10	2-6	5-7
Native annual forbs	AAFF	1-5	2-5	1-5	1-5	2-4
Shadscale	ATCO	10-25	---	10-25	---	---
Bailey greasewood	SAVEB	5-10	---	5-10	2-10	---
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	5-10
Winterfat	EULA5	5-10	5-20	5-10	---	5-20
Nevada ephedra	EPNE	1-5	---	1-5	2-5	---
Fourwing saltbush	ATCA2	---	15-25	---	5-15	10-15
Spiny hopsage	GRSP	---	1-5	---	---	2-8
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---
Burrobrush	HYMEN3	---	---	---	5-10	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---
Anderson wolfberry	LYAN	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-25
Joshua-tree	YUBR	1-2	---	1-2	---	---
Site symbol		029X017N	029X012N	029X017N	029X041N	029X046N
Potential production (lb/acre):						
Favorable years		350	500	350	500	450
Normal years		250	350	250	300	350
Unfavorable years		100	200	100	100	175

1050—Beelem-Rock outcrop-Bellehelen association

Map Unit Setting

Position on landscape: Mountains
Elevation: 6,300 to 7,800 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 49 degrees F
Frost-free season—about 110 days

Composition

Beelem very gravelly sandy loam, 30 to 75 percent slopes (Lithic Xeric Torriorthents - loamy, mixed (calcareous), mesic)—35 percent
Rock outcrop—30 percent
Bellehelen very stony loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Wahguyhe very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—6 percent
Inclusion 2: Stewval very gravelly sandy loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xeric Torriorthents very gravelly sandy loam, 4 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent

Beelem Soil

Position on landscape: Eroded mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, galleta
Typical profile:
0 to 1 inch—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
1 to 3 inches—gravelly sandy loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2
3 inches—unweathered bedrock
Range in depth to bedrock: 3 to 9 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: Less than 0.5 inch
Water supplying capacity: 8 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Shoulders and side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Bellehelen Soil

Position on landscape: Stable mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra, galleta, bottlebrush squirreltail
Typical profile:
0 to 5 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
5 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—south-facing mountainsides; distinctive present vegetation—Wyoming big sagebrush, Nevada ephedra
Inclusion 2: Position on landscape—lower part of mountainsides; distinctive present vegetation—black sagebrush, Nevada ephedra
Inclusion 3: Position on landscape—fan piedmonts adjacent to mountains; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 283)

Woodland

(Beelem Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Indian ricegrass, bottlebrush squirreltail, black sagebrush, Wyoming big sagebrush, Nevada ephedra, green ephedra
(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Beelem soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Beelehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Beelem Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Bellem soil—VIIs, nonirrigated; Rock outcrop—VIIIs; Bellehelen soil—VIIs, nonirrigated
Woodland suitability group: Beelem soil—1r; Bellehelen soil—1r

TABLE 283.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Beelem	Rock outcrop	Bellehelen	1	2	3
Bottlebrush squirreltail	SIHY	2-5	---	5-15	1-4	1-5	---
Indian ricegrass	ORHY	2-5	---	2-5	5-10	5-10	2-5
Bluegrass	POA++	---	---	10-20	---	2-10	---
Needlegrass	STIPA	---	---	5-15	5-10	2-10	---
Muttongrass	POFE	---	---	2-5	---	---	---
Needleandthread	STCO4	---	---	2-5	---	---	---
Galleta	HIJA	---	---	---	5-15	5-15	1-3
Dropseed	SPORO	---	---	---	1-5	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	2-10	---	5-10	5-20	10-15	5-10
Native annual grasses	AAGG	---	---	---	1-5	1-5	1-5
Perennial forbs	PPFF	2-5	---	5-15	4-10	5-10	5-10
Native annual forbs	AAFF	---	---	1-3	2-7	1-5	1-5
Black sagebrush	ARARN	20-35	---	15-25	---	15-20	---
Wyoming big sagebrush	ARTRW*	10-25	---	---	20-30	---	---
Nevada ephedra	EPNE	5-15	---	---	5-10	5-10	1-5
Green ephedra	EPVI	5-10	---	2-5	---	---	---
Bitterbrush	PURSH	---	---	5-10	---	---	---
Douglas rabbitbrush	CHVI8	---	---	2-5	---	---	---
Bud sagebrush	ARSP5	---	---	---	---	2-5	---
Winterfat	EULA5	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	5-15	---	5-10	10-20	10-20	10-25
Utah juniper	JUOS	2-5	---	5-10	---	---	---
Singleleaf pinyon	PIMO	2-5	---	5-10	---	---	---
Site symbol		029X081N	---	029X069N	029X010N	029X014N	029X009N
Potential production (lb/acre):							
Favorable years		125	---	350	600	500	700
Normal years		75	---	275	400	300	500
Unfavorable years		25	---	150	200	100	200

1060—Wrango-Zadvar-Veet association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 6,400 to 7,200 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 52 degrees F
Frost-free season—about 110 days

Composition

Wrango gravelly loamy sand, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—45 percent
Zadvar very gravelly sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—25 percent
Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents very gravelly loamy sand, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Stewval very gravelly fine sandy loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic—5 percent
Inclusion 3: Xeric Torriorthents very gravelly loamy sand, 2 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Wrango Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta, needleandthread, rabbitbrush
Typical profile:
0 to 2 inches—gravelly loamy sand; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
2 to 14 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy coarse sand, extremely gravelly sand, extremely gravelly loamy sand; 5 to 40 percent cobbles and stones and 70 to 85 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP, GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Very rapid
Available water capacity: 2.0 to 3.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: A
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—moderate
Potential frost action: Low

Zadvar Soil

Position on landscape: Fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, Nevada ephedra, galleta, needleandthread, rabbitbrush
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 5 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6
12 to 22 inches—cemented
22 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle; firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1
Range in depth to cemented layer: 10 to 14 inches

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Soil

Position on landscape: Fan collars, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, rabbitbrush, galleta, Indian ricegrass, spiny hopsage
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—stream terraces adjacent to alluvial fans; distinctive present vegetation—Wyoming big sagebrush, spiny hopsage, galleta
Inclusion 2: Position on landscape—hillsides adjacent to alluvial fans; distinctive present vegetation—black sagebrush, galleta, Nevada ephedra
Inclusion 3: Position on landscape—drainageways, stream terraces; distinctive present vegetation—basin big sagebrush, rubber rabbitbrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 284)

Elements of Wildlife Habitat

Suitability of Wrango soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Zadvar soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Wrango Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, too sandy, soil blowing
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Zadvar Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good

TABLE 284.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Wrango	Zadvar	Veet	1	2	3
Indian ricegrass	ORHY	15-25	5-10	5-15	5-15	5-10	2-5
Needlegrass	STIPA	5-10	5-15	5-15	5-15	2-10	---
Basin wildrye	ELCI2	2-5	---	---	---	---	2-5
Galleta	HIJA	---	5-20	5-25	5-25	5-15	1-3
Dropseed	SPORO	---	---	5-15	5-15	---	---
Bottlebrush squirreltail	SIHY	---	---	1-5	1-5	1-5	---
Bluegrass	POA++	---	---	---	---	2-10	---
Other perennial grasses	PPGG	10-20	10-15	5-20	5-20	10-15	5-10
Native annual grasses	AAGG	---	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	3-8	3-10	3-10	5-10	5-10
Native annual forbs	AAFF	2-5	2-5	2-5	2-5	1-5	1-5
Black sagebrush	ARARN	20-30	20-25	---	---	15-20	---
Winterfat	EULA5	5-10	2-5	2-10	2-10	2-5	---
Bud sagebrush	ARSP5	2-5	5-10	5-10	5-10	2-5	---
Small rabbitbrush	CHVIS	2-5	---	---	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	5-10	1-5
Wyoming big sagebrush	ARTRW*	---	---	15-20	15-20	---	---
Spiny hopsage	GRSP	---	---	5-10	5-10	---	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-25
Site symbol		028B011N	029X008N	029X049N	029X049N	029X014N	029X009N
Potential production (lb/acre):							
Favorable years		900	700	900	900	500	700
Normal years		700	400	600	600	300	500
Unfavorable years		400	200	300	300	100	200

Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, thin layer

(Veet Soil)

Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Wrango soil—VIIs, nonirrigated; Zadvar soil—VIIs, nonirrigated; Veet soil—VIIs, nonirrigated

Site symbol: Wrango soil—028B011N; Zadvar soil—029X008N; Veet soil—029X049N

1070—Squawtip-Gabbvally-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 7,000 to 8,000 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 46 degrees F
Frost-free season—about 90 days

Composition

Squawtip very stony loam, 30 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—50 percent
Gabbvally very stony loam, 30 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Haploxerolls, 50 to 75 percent slopes (Typic Haploxerolls - loamy-skeletal, mixed, frigid)—8 percent
Inclusion 2: Bellehelen very stony loam, 30 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Xeric Torriorthents, 8 to 15 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—2 percent

Squawtip Soil

Position on landscape: Mainly south-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountain big sagebrush, bluegrass
Typical profile:
0 to 10 inches—very stony loam; 30 to 50 percent cobbles and stones and 15 to 30 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
10 to 24 inches—very cobbly loam, very gravelly sandy clay loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2
24 inches—weathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—2; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, bluegrass, galleta
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Rock Outcrop

Position on landscape: Small peaks and ridges of hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—eroded areas on hillsides and mountainsides; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush
Inclusion 2: Position on landscape—lower hillsides and mountainsides; distinctive present vegetation—singleleaf pinyon, Wyoming big sagebrush
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 285)

Woodland

(Squawtip Soil)
Site index for common trees: Singleleaf pinyon—75
Most important native understory plants: Mountain big sagebrush, bluegrass, needlegrass, bitterbrush, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Squawtip soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Coniferous plants (nonirrigated)—good
Shrubs (nonirrigated)—good
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Squawtip Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—large stones
Shallow excavations: Severe—slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones, thin layer
(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Squawtip soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Gabbvally soil—029X010N
Woodland suitability group: Squawtip soil—2r

TABLE 285.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Squawtip	Gabbvally	Rock outcrop	1	2	3
Muttongrass	POFE	25-40	---	---	25-40	2-5	---
Bluegrass	POA++	10-20	---	---	10-20	10-20	---
Bottlebrush squirreltail	SIHY	5-10	1-4	---	5-10	5-15	---
Prairie junegrass	KOCR	5-10	---	---	5-10	---	---
Needlegrass	STIPA	2-5	5-10	---	2-5	5-15	---
Galleta	HIJA	---	5-15	---	---	---	1-3
Indian ricegrass	ORHY	---	5-10	---	---	2-5	2-5
Dropseed	SPORO	---	1-5	---	---	---	---
Basin wildrye	ELCI2	---	---	---	---	---	2-5
Other perennial grasses	PPGG	5-10	5-20	---	5-10	5-10	5-10
Native annual grasses	AAGG	---	1-5	---	---	---	1-5
Perennial forbs	PPFF	5-15	4-10	---	5-15	5-15	5-10
Native annual forbs	AAFF	1-3	2-7	---	1-3	1-3	1-5
Mountain big sagebrush	ARTRV	10-20	---	---	10-20	---	---
Bitterbrush	PURSH	5-15	---	---	5-15	5-10	---
Snowberry	SYMPH	2-5	---	---	2-5	---	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	2-5	---	---
Douglas rabbitbrush	CHVI8	1-3	---	---	1-3	2-5	---
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---	---
Nevada ephedra	EPNE	---	5-10	---	---	---	1-5
Black sagebrush	ARARN	---	---	---	---	15-25	---
Green ephedra	EPVI	---	---	---	---	2-5	---
Basin big sagebrush	ARTRT*	---	---	---	---	---	10-20
Rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5
Littleleaf horsebrush	TEGL	---	---	---	---	---	1-5
Other shrubs	SSSS	5-15	10-20	---	5-15	5-10	10-25
Singleleaf pinyon	PIMO	2-5	---	---	2-5	5-10	---
Utah juniper	JUOS	1-3	---	---	1-3	5-10	---
Site symbol		029X066N	029X010N	---	029X066N	029X069N	029X009N
Potential production (lb/acre):							
Favorable years		475	600	---	475	350	700
Normal years		375	400	---	375	275	500
Unfavorable years		200	200	---	200	150	200

1080—Ravenswood-Wahguyhe-Brier association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 7,000 to 8,500 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 46 degrees F
Frost-free season—about 90 days

Composition

Ravenswood very stony loam, 15 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—35 percent
Wahguyhe very gravelly sandy loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—35 percent
Brier very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Rock outcrop—6 percent
Inclusion 2: Typic Argixerolls, 15 to 50 percent slopes (Typic Argixerolls - fine-loamy, mixed, frigid)—4 percent

Ravenswood Soil

Position on landscape: Upper side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, mountain big sagebrush, antelope bitterbrush, bluegrass
Typical profile:
0 to 8 inches—very stony loam; 15 to 25 percent cobbles and stones and 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML; estimated AASHTO classification - A-4
8 to 13 inches—very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
13 to 32 inches—very gravelly clay, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; hard, firm; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
32 inches—unweathered bedrock
Range in depth to bedrock: 30 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 5 to 6 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—severe; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Wahguyhe Soil

Position on landscape: Lower part of mountainsides and hillsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta
Typical profile:
0 to 8 inches—very gravelly sandy loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
8 to 19 inches—very gravelly sandy loam; 0 to 20 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
19 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5

Hazard of erosion: By water—severe; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Brier Soil

Position on landscape: Intermediate side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Wyoming big sagebrush, bluegrass
Typical profile:
0 to 3 inches—very stony loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—small peaks, ridges, and rimrock areas of hills and mountains; distinctive present vegetation—barren
Inclusion 2: Position on landscape—snow pockets and near drainageways on hills and mountains; distinctive present vegetation—mountainmahogany

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 286)

Woodland

(Ravenswood Soil)
Site index for common trees: Singleleaf pinyon—50; Utah juniper—50
Most important native understory plants: Mountain big sagebrush, Sandberg bluegrass, Thurber needlegrass
(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Ravenswood soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Wahguyhe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ravenswood Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—erodes easily, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones
(Wahguyhe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage, thin layer

TABLE 286.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given. "T" means trace]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Ravenswood	Wahguyhe	Brier	1	2
Muttongrass	POFE	25-40	---	---	---	---
Bluegrass	POA++	10-20	---	10-20	---	5-10
Bottlebrush squirreltail	SIHY	5-10	1-4	1-5	---	2-5
Prairie junegrass	KOCR	5-10	---	5-10	---	---
Needlegrass	STIPA	2-5	5-10	5-10	---	5-10
Galleta	HIJA	---	5-15	---	---	---
Indian ricegrass	ORHY	---	5-10	1-5	---	2-5
Dropseed	SPORO	---	1-5	---	---	---
Bluebunch wheatgrass	AGSP	---	---	---	---	5-10
Basin wildrye	ELCI2	---	---	---	---	1-5
Other perennial grasses	PPGG	5-10	5-20	5-15	---	1-5
Native annual grasses	AAGG	---	1-5	1-3	---	---
Arrowleaf balsamroot	BASA2	---	---	---	---	2-5
White stoneseed	LIRU4	---	---	---	---	1-2
Lupine	LUPIN	---	---	---	---	1-2
Phlox	PHLOX	---	---	---	---	1-2
Other perennial forbs	PPFF	5-15	4-10	5-10	---	2-10
Native annual forbs	AAFF	1-3	2-7	1-5	---	---
Mountain big sagebrush	ARTRV	10-20	---	---	---	1-5
Bitterbrush	PURSH	5-15	---	5-10	---	---
Snowberry	SYMPH	2-5	---	---	---	1-5
Curlleaf mountainmahogany	CELE3	2-5	---	1-5	---	45-60
Douglas rabbitbrush	CHVI8	1-3	---	---	---	1-3
Wyoming big sagebrush	ARTRW*	---	20-30	10-20	---	---
Nevada ephedra	EPNE	---	5-10	---	---	---
Serviceberry	AMELA	---	---	1-5	---	---
Green ephedra	ERVI	---	---	2-5	---	---
Other shrubs	SSSS	5-15	10-20	10-20	---	5-10
Singleleaf pinyon	PIMO	2-5	---	2-5	---	T-2
Utah juniper	JUOS	1-3	---	1-4	---	T-2
Site symbol		O29XO66N	O29XO10N	O29XO65N	---	O29XO27N
Potential production (lb/acre):						
Favorable years		475	600	425	---	1,600
Normal years		375	400	350	---	1,200
Unfavorable years		200	200	200	---	800

(Brier Soil)
Suitability and limitations for the following uses:

Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope

Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones, thin layer

Interpretive Groups

Capability classification: Ravenswood soil—VIIs, nonirrigated; Wahguyhe soil—VIIs, nonirrigated; Brier soil—VIIs, nonirrigated
Site symbol: Wahguyhe soil—029X010N
Woodland suitability group: Ravenswood soil—1r; Brier soil—1r

1081—Ravenswood-Brier association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,600 to 9,000 feet
Climatic data (average annual):
Precipitation—about 14 inches
Air temperature—about 46 degrees F
Frost-free season—about 90 days

Composition

Ravenswood very stony loam, 15 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—60 percent
Brier very cobbly loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Squawtip very stony loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—6 percent
Inclusion 2: Hiridge very stony sandy loam, 8 to 30 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—6 percent
Inclusion 3: Rock outcrop—3 percent

Ravenswood Soil

Position on landscape: Upper side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, antelope bitterbrush, Sandberg bluegrass
Typical profile:
0 to 8 inches—very stony loam; 15 to 25 percent cobbles and stones and 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML; estimated AASHTO classification - A-4
8 to 13 inches—very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
13 to 32 inches—very gravelly clay, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; hard, firm; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
32 inches—weathered bedrock
Range in depth to bedrock: 30 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 5 to 6 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.24; T value—2; wind erodibility group—6
Hazard of erosion: By water—severe; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Brier Soil

Position on landscape: Middle side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, ephedra, Sandberg bluegrass
Typical profile:
0 to 3 inches—very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very gravelly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the bedrock—moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D

Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—upper side slopes of mountains; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush
Inclusion 2: Position on landscape—crests of mountains; distinctive present vegetation—low sagebrush
Inclusion 3: Position on landscape—small peaks and ridges on mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 287)

Woodland

(Ravenswood Soil)
Site index for common trees: Singleleaf pinyon—50; Utah juniper—50
Most important native understory plants: Mountain big sagebrush, Sandberg bluegrass, Thurber needlegrass
(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Ravenswood soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Ravenswood Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—erodes easily, soil blowing
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones
(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones

Interpretive Groups

Capability classification: Ravenswood soil—VIIs, nonirrigated; Brier soil—VIIs, nonirrigated
Woodland suitability group: Ravenswood soil—1r; Brier soil—1r

TABLE 287.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Ravenswood	Brier	1	2	3
Muttongrass	POFE	25-40	---	25-40	---	---
Bluegrass	POA++	10-20	10-20	10-20	3-5	---
Bottlebrush squirreltail	SIHY	5-10	1-5	5-10	---	---
Prairie junegrass	KOCR	5-10	5-10	5-10	---	---
Needlegrass	STIPA	2-5	5-10	2-5	5-10	---
Indian ricegrass	ORHY	---	1-5	---	---	---
Western wheatgrass	AGSM	---	---	---	5-10	---
Other perennial grasses	PPGG	5-10	5-15	5-10	10-15	---
Native annual grasses	AAGG	---	1-3	---	2-4	---
Perennial forbs	PPFF	5-15	5-10	5-15	8-12	---
Native annual forbs	AAFF	1-3	1-5	1-3	3-7	---
Mountain big sagebrush	ARTRV	10-20	---	10-20	---	---
Bitterbrush	PURSH	5-15	5-10	5-15	---	---
Snowberry	SYMPH	2-5	---	2-5	---	---
Curlleaf mountainmahogany	CELE3	2-5	1-5	2-5	---	---
Douglas rabbitbrush	CHVI8	1-3	---	1-3	---	---
Wyoming big sagebrush	ARTRW*	---	10-20	---	---	---
Serviceberry	AMELA	---	1-5	---	---	---
Green ephedra	ERVI	---	2-5	---	---	---
Low sagebrush	ARAR8	---	---	---	20-30	---
Low rabbitbrush	CHVIH2	---	---	---	3-5	---
Horsebrush	TETRA3	---	---	---	2-5	---
Other shrubs	SSSS	5-15	10-20	5-15	15-20	---
Singleleaf pinyon	PIMO	2-5	2-5	2-5	---	---
Utah juniper	JUOS	1-3	1-4	1-3	---	---
Site symbol		O29XO66N	O29XO65N	O29XO66N	O29XO53N	---
Potential production (lb/acre):						
Favorable years		475	425	475	700	---
Normal years		375	350	375	400	---
Unfavorable years		200	200	200	300	---

1090—Zibate-Blacktop-Rock outcrop association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 4,500 to 5,500 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 57 degrees F
Frost-free season—about 190 days

Composition

Zibate very gravelly sandy loam, 30 to 50 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, thermic)—35 percent
Blacktop very gravelly sandy loam, 50 to 75 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—30 percent
Rock outcrop—20 percent
Contrasting inclusions as follows—
Inclusion 1: Lithic Xeric Torriorthents, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—5 percent
Inclusion 2: Typic Torriorthents, 30 to 75 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), thermic, shallow)—4 percent
Inclusion 3: Typic Torriorthents, 30 to 50 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, thermic, shallow)—3 percent
Inclusion 4: Upspring very cobbly sandy loam, 30 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), thermic)—3 percent

Zibate Soil

Position on landscape: Side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Blackbrush, spiny menodora, Nevada ephedra, Anderson wolfberry, shadscale
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 to 15 inches—extremely gravelly loam, extremely gravelly clay loam; 0 to 25 percent cobbles and stones and 75 to 90 percent pebbles (by weight); subangular blocky structure; hard, firm; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GP-GC, GC; estimated AASHTO classification - A-2
15 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Blacktop Soil

Position on landscape: Eroded hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Horsebrush, shadscale, wolfberry
Typical profile:
0 to 4 inches—very gravelly sandy loam; 5 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; mildly alkaline (pH 7.8); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
4 inches—unweathered bedrock
Range in depth to bedrock: 4 to 10 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 3 inches
Runoff: Very rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.20; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks and ridges on hills and mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—upper side slopes of hills and mountains; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—eroded hillsides and mountainsides; distinctive present vegetation—creosotebush, white bursage, shadscale
Inclusion 3: Position on landscape—eroded hillsides and mountainsides; distinctive present vegetation—blackbrush, Nevada ephedra, shadscale
Inclusion 4: Position on landscape—lower side slopes of hills and mountains; distinctive present vegetation—creosotebush, white bursage, shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 288)

Elements of Wildlife Habitat

Suitability of Zibate soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Blacktop soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Zibate Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Blacktop Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope, depth to rock
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Zibate soil—VIIs, nonirrigated; Blacktop soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Zibate soil—029X019N; Blacktop soil—029X033N

TABLE 288.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Zibate	Blacktop	Rock outcrop	1	2	3	4
Galleta	HIJA	10-15	---	---	5-15	---	1-5	---
Indian ricegrass	ORHY	5-10	2-5	---	5-10	1-5	1-5	1-5
Needlegrass	STIPA	1-5	---	---	5-10	3-5	1-5	3-5
King desertgrass	BLKI	---	1-2	---	---	---	---	---
Bottlebrush squirreltail	SIHY	---	1-2	---	1-4	1-2	---	1-2
Dropseed	SPORO	---	---	---	1-5	---	---	---
Bluegrass	POA++	---	---	---	---	---	2-5	---
Other perennial grasses	PPGG	5-10	1-5	---	5-20	2-5	2-8	2-5
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	2-5	---	4-10	5-7	2-8	5-7
Native annual forbs	AAFF	1-5	1-5	---	2-7	3-6	1-5	3-6
Blackbrush	CORA	25-30	---	---	---	---	25-35	---
Nevada ephedra	EPNE	1-5	---	---	5-10	5-10	2-5	5-10
Fourwing saltbush	ATCA2	1-5	---	---	---	---	---	---
Shadscale	ATCO	---	40-60	---	---	20-40	---	20-40
Bailey greasewood	SAVEB	---	10-15	---	---	---	---	---
Nevada dalea	DAPO2	---	5-10	---	---	---	---	---
Cooper wolfberry	LYCO2	---	2-5	---	---	---	---	---
Bud sagebrush	ARSP5	---	2-5	---	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	20-30	---	---	---
Anderson wolfberry	LYAN	---	---	---	---	5-10	---	5-10
White bursage	FRDU	---	---	---	---	2-5	---	2-5
Spiny menodora	MESP2	---	---	---	---	2-5	1-5	2-5
Desert pepperweed	LEFR2	---	---	---	---	---	1-5	---
Other shrubs	SSSS	10-20	5-15	---	10-20	10-20	20-40	10-20
Site symbol		O29XO19N	O29XO33N	---	O29XO10N	O30XO44N	O30XO95N	O30XO44N
Potential production (lb/acre):								
Favorable years		400	100	---	600	250	300	250
Normal years		250	50	---	400	150	280	150
Unfavorable years		100	25	---	200	50	75	50

1120—Rodad-Entero association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,200 to 6,200 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 130 days

Composition

Rodad very gravelly loam, moist, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—60 percent
Entero very channery loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—25 percent
Contrasting inclusions as follows—
Inclusion 1: Vindicator very gravelly sandy loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Slatery very gravelly loam, 15 to 50 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—5 percent
Inclusion 3: Theriot very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—2 percent

Rodad Soil

Position on landscape: Side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, spiny hopsage, galleta, Nevada ephedra
Typical profile:
0 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Entero Soil

Position on landscape: Higher and mainly north-facing side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, green ephedra, galleta, desert needlegrass
Typical profile:
0 to 2 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
2 to 10 inches—very channery clay loam, very gravelly clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
10 inches—weathered bedrock
Range in depth to bedrock: 5 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight

Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—hills, mountains; distinctive present vegetation—spiny hopsage, galleta
Inclusion 2: Position on landscape—higher eroded hillsides and mountainsides; distinctive present vegetation—spiny menodora
Inclusion 3: Position on landscape—lower eroded hillsides and mountainsides; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 289)

Elements of Wildlife Habitat

Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Entero soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Entero Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—small stones, droughty, depth to rock
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Rodad soil—VIIs, nonirrigated; Entero soil—VIIs, nonirrigated
Site symbol: Rodad soil—029X037N; Entero soil—029X010N

TABLE 289.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name		Inclusion number--		
		Rodad	Entero	1	2	3
Galleta	HIJA	10-20	5-15	5-15	10-20	5-20
Indian ricegrass	ORHY	2-5	5-10	5-10	2-5	5-15
Needlegrass	STIPA	5-10	5-10	2-5	5-10	5-10
Bottlebrush squirreltail	SIHY	---	1-4	1-3	---	2-5
Dropseed	SPORO	---	1-5	---	---	---
Other perennial grasses	PPGG	5-10	5-20	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	4-10	5-10	5-10	5-10
Native annual forbs	AAFF	2-5	2-7	2-5	2-5	2-5
Nevada ephedra	EPNE	5-10	5-10	1-5	5-10	2-5
Bud sagebrush	ARSP5	2-5	---	2-5	2-5	2-5
Spiny menodora	MESP2	10-25	---	---	10-25	---
Bailey greasewood	SAVEB	5-10	---	---	5-10	5-15
Anderson wolfberry	LYAN	5-10	---	5-15	5-10	---
Shadscale	ATCO	2-5	---	---	2-5	15-25
Wyoming big sagebrush	ARTRW*	---	20-30	---	---	---
Spiny hopsage	GRSP	---	---	5-15	---	---
Nevada dalea	DAPO2	---	---	5-10	---	---
Fremont dalea	DAFR	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Other shrubs	SSSS	15-25	10-20	10-20	15-25	10-20
Site symbol		O29XO37N	O29XO10N	O29XO21N	O29XO37N	O29XO22N
Potential production (lb/acre):						
Favorable years		300	600	300	300	300
Normal years		200	400	200	200	200
Unfavorable years		100	200	100	100	100

1121—Rodad-Theriot-Rock outcrop association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,400 to 6,000 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 140 days

Composition

Rodad very channery loam, moist, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Theriot very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—25 percent
Rock outcrop—15 percent
Contrasting inclusions as follows—
Inclusion 1: Entero very gravelly loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 2: Typic Torriorthents, 30 to 75 percent slopes (Typic Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—5 percent

Rodad Soil

Position on landscape: Mountains, hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 4 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Theriot Soil

Position on landscape: Mountains, hills
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Anderson wolfberry
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Rock Outcrop

Position on landscape: Small peaks, ridges, and side slopes of mountains
Slope features: Length—short; shape—convex
Dominant present vegetation: Barren

Contrasting Inclusions

Inclusion 1: Position on landscape—north-facing mountainsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 2: Position on landscape—eroded areas on mountainsides; distinctive present vegetation—shadscale, galleta, desert, needlegrass

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 290)

Elements of Wildlife Habitat

Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

TABLE 290.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Rodad	Theriot	Rock outcrop	1	2
Galleta	HIJA	10-20	5-20	---	5-15	5-20
Indian ricegrass	ORHY	2-5	5-15	---	5-10	5-15
Needlegrass	STIPA	5-10	5-10	---	5-10	5-10
Bottlebrush squirreltail	SIHY	---	2-5	---	1-4	2-5
Dropseed	SPORO	---	---	---	1-5	---
Other perennial grasses	PPGG	5-10	5-10	---	5-20	5-10
Native annual grasses	AAGG	1-5	1-5	---	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	---	4-10	5-10
Native annual forbs	AAFF	2-5	2-5	---	2-7	2-5
Nevada ephedra	EPNE	5-10	2-5	---	5-10	2-5
Bud sagebrush	ARSP5	2-5	2-5	---	---	2-5
Spiny menodora	MESP2	10-25	---	---	---	---
Bailey greasewood	SAVEB	5-10	5-15	---	---	5-15
Anderson wolfberry	LYAN	5-10	---	---	---	---
Shadscale	ATCO	2-5	15-25	---	---	15-25
Wyoming big sagebrush	ARTRW*	---	---	---	20-30	---
Other shrubs	SSSS	15-25	10-20	---	10-20	10-20
Site symbol		O29XO37N	O29XO22N	---	O29XO10N	O29XO22N
Potential production (lb/acre):						
Favorable years		300	300	---	600	300
Normal years		200	200	---	400	200
Unfavorable years		100	100	---	200	100

Ratings for Selected Uses

(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—large stones, seepage, thin layer

Interpretive Groups

Capability classification: Rodad soil—VIIs, nonirrigated; Theriot soil—VIIs, nonirrigated; Rock outcrop—VIIIs
Site symbol: Rodad soil—029X037N; Theriot soil—029X022N

1122—Rodad-Ardivey-Theriot association

Map Unit Setting

Position on landscape: Hills, rock pediments, fan remnants
Elevation: 5,300 to 5,800 feet
Climatic data (average annual):
Precipitation—about 6 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Rodad very channery loam, 8 to 30 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Ardivey very gravelly sandy loam, moist, 2 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—35 percent
Theriot very gravelly sandy loam, 15 to 30 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—7 percent
Inclusion 2: Wardenot very gravelly sandy loam, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—5 percent
Inclusion 3: Fuegosta very gravelly sandy loam, 2 to 4 percent slopes (Abruptic Durargids - clayey, montmorillonitic, mesic, shallow)—3 percent

Rodad Soil

Position on landscape: Hills, rock pediment remnants
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, galleta
Typical profile:
0 to 4 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Ardivey Soil

Position on landscape: Fan remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Shadscale, spiny menodora, galleta
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
4 to 14 inches—very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam; 10 to 25 percent cobbles and stones and 55 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.3); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
14 to 60 inches or more—extremely gravelly loamy sand; 10 to 45 percent cobbles and stones and 70 to 90 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 13); estimated Unified classification - GP, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches

Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Theriot Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—burrobrush, rabbitbrush, shadscale
Inclusion 2: Position on landscape—inset fans; distinctive present vegetation—shadscale, bud sagebrush, galleta
Inclusion 3: Position on landscape—fan remnants; distinctive present vegetation—shadscale, spiny menodora, galleta

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 291)

Elements of Wildlife Habitat

Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Ardivey soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ardivey Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—large stones
Roadfill: Fair—large stones
Sand: Improbable source—small stones
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage, large stones
(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, large stones

TABLE 291.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rodad	Ardivey	Theriot	1	2	3
Galleta	HIJA	5-20	5-10	5-20	---	10-25	5-10
Indian ricegrass	ORHY	5-15	5-20	5-15	5-10	5-10	5-20
Needlegrass	STIPA	5-10	---	5-10	---	2-5	---
Bottlebrush squirreltail	SIHY	2-5	---	2-5	---	2-5	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-15	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	2-4	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	2-6	4-10	5-10
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	1-5	2-5
Shadscale	ATCO	15-25	5-15	15-25	---	10-25	5-15
Bailey greasewood	SAVEB	5-15	5-15	5-15	2-10	5-10	5-15
Nevada ephedra	EPNE	2-5	5-10	2-5	2-5	1-5	5-10
Bud sagebrush	ARSP5	2-5	5-10	2-5	---	5-10	5-10
Spiny menodora	MESP2	---	10-30	---	---	---	10-30
Rubber rabbitbrush	CHNA2	---	---	---	10-25	---	---
Fourwing saltbush	ATCA2	---	---	---	5-15	---	---
Burrobrush	HYMEN3	---	---	---	5-10	---	---
Littleleaf horsebrush	TEGL	---	---	---	5-10	---	---
Cooper wolfberry	LYCO2	---	---	---	2-5	---	---
Winterfat	EULA5	---	---	---	---	5-10	---
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	---	---	---	1-2	---
Site symbol		029X022N	029X036N	029X022N	029X041N	029X017N	029X036N
Potential production (lb/acre):							
Favorable years		300	400	300	500	350	400
Normal years		200	300	200	300	250	300
Unfavorable years		100	100	100	100	100	100

Sand: Improbable source—excess fines, large stones

Gravel: Improbable source—excess fines, large stones

Embankments, dikes, and levees: Severe—seepage, large stones, thin layer

Interpretive Groups

Capability classification: Rodad soil—VIIs, nonirrigated; Ardivey soil—VIIs, nonirrigated; Theriot soil—VIIs, nonirrigated

Site symbol: Rodad soil—029X022N; Ardivey soil—029X036N; Theriot soil—029X022N

1123—Rodad-Roic-Theriot association

Map Unit Setting

Position on landscape: Hills
Elevation: 4,900 to 5,400 feet
Climatic data (average annual):
Precipitation—about 5 inches
Air temperature—about 53 degrees F
Frost-free season—about 150 days

Composition

Rodad very cobbly loam, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—40 percent
Roic very gravelly loam, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—30 percent
Theriot very gravelly sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Wardenot very gravelly sandy loam, 4 to 15 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—9 percent
Inclusion 2: Pintwater very cobbly fine sandy loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, mixed (calcareous), mesic)—5 percent
Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—1 percent

Rodad Soil

Position on landscape: Stable areas on hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, Indian ricegrass, bud sagebrush, Bailey greasewood
Typical profile:
0 to 4 inches—very cobbly loam; 25 to 40 percent cobbles and stones and 35 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM-SC, SM; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Roic Soil

Position on landscape: Eroded hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Shadscale, Indian ricegrass, bud sagebrush, Bailey greasewood
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
3 to 8 inches—very fine sandy loam, fine sandy loam, loam; 0 to 20 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML, SM-SC, ML,SM; estimated AASHTO classification - A-4
8 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately rapid
Available water capacity: 0.5 to 1.5 inches
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low

Corrosivity: To steel—high; to concrete—high
Potential frost action: Low

Theriot Soil

Position on landscape: Hills
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, bud sagebrush, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 15 to 35 percent cobbles and stones and 40 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—alluvial fans adjacent to hills; distinctive present vegetation—shadscale, bud sagebrush
Inclusion 2: Position on landscape—hills; distinctive present vegetation—shadscale, Indian ricegrass
Inclusion 3: Position on landscape—drainageways; distinctive present vegetation—shadscale, burrobrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 292)

Elements of Wildlife Habitat

Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Roic soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Roic Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—seepage, large stones, thin layer

Interpretive Groups

Capability classification: Rodad soil—VIIs, nonirrigated; Roic soil—VIIs, nonirrigated; Theriot soil—VIIs, nonirrigated
Site symbol: Rodad soil—029X022N; Roic soil—029X017N; Theriot soil—029X022N

TABLE 292.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rodad	Roic	Theriot	1	2	3
Galleta	HIJA	5-20	10-25	5-20	10-25	5-20	---
Indian ricegrass	ORHY	5-15	5-10	5-15	5-10	5-15	5-10
Needlegrass	STIPA	5-10	2-5	5-10	2-5	5-10	---
Bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	2-5	---
Other perennial grasses	PPGG	5-10	5-15	5-10	5-15	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	2-4
Perennial forbs	PPFF	5-10	4-10	5-10	4-10	5-10	2-6
Native annual forbs	AAFF	2-5	1-5	2-5	1-5	2-5	1-5
Shadscale	ATCO	15-25	10-25	15-25	10-25	15-25	---
Bailey greasewood	SAVEB	5-15	5-10	5-15	5-10	5-15	2-10
Nevada ephedra	EPNE	2-5	1-5	2-5	1-5	2-5	2-5
Bud sagebrush	ARSP5	2-5	5-10	2-5	5-10	2-5	---
Winterfat	EULA5	---	5-10	---	5-10	---	---
Rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
Fourwing saltbush	ATCA2	---	---	---	---	---	5-15
Burrobrush	HYMEN3	---	---	---	---	---	5-10
Littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
Cooper wolfberry	LYCO2	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	10-20	10-20
Joshua-tree	YUBR	---	1-2	---	1-2	---	---
Site symbol		029X022N	029X017N	029X022N	029X017N	029X022N	029X041N
Potential production (lb/acre):							
Favorable years		300	350	300	350	300	500
Normal years		200	250	200	250	200	300
Unfavorable years		100	100	100	100	100	100

1124—Rodad-Slatery-Leo association

Map Unit Setting

Position on landscape: Hills, rock pediments, inset fans
Elevation: 5,600 to 6,200 feet
Climatic data (average annual):
Precipitation—about 7 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Rodad very gravelly loam, moist, 8 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—50 percent
Slatery very gravelly loam, 8 to 15 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—20 percent
Leo very gravelly sandy loam, 4 to 8 percent slopes (Typic Torriorthents - sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Ardivey very gravelly sandy loam, moist, 4 to 8 percent slopes (Duric Haplargids - loamy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Entero very channery loam, 8 to 15 percent slopes (Xerollic Haplargids - loamy skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Downeyville very gravelly fine sandy loam, moist, 8 to 15 percent slopes (Lithic Haplargids - loamy-skeletal, mixed, mesic)—2 percent

Rodad Soil

Position on landscape: Hills, rock pediment remnants
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, Nevada ephedra, spiny hopsage, galleta
Typical profile:
0 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Slatery Soil

Position on landscape: Eroded hills
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Spiny menodora, Nevada ephedra, galleta
Typical profile:
0 to 2 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1, A-2
2 to 6 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
6 to 10 inches—gravelly loam; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-2, A-4
10 inches—weathered bedrock
Range in depth to bedrock: 4 to 12 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate

Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Leo Soil

Position on landscape: Inset fans adjacent to hills and rock pediments
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Spiny hopsage, fourwing saltbush, Indian ricegrass
Typical profile:
0 to 4 inches—very gravelly sandy loam; 50 to 75 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SP-SM, SM, GP-GM, GM; estimated AASHTO classification - A-1
4 to 60 inches or more—stratified gravelly fine sandy loam to extremely gravelly coarse sand; 0 to 25 percent cobbles and stones and 50 to 60 percent pebbles (by weight); single grain; loose; strongly alkaline (pH 8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM, SM, SP-SM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Rapid
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 6 inches
Runoff: Medium
Hydrologic group: A
Erosion factors (upper layer): K value—0.05; T value—5; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—fan piedmont remnants adjacent to hills; distinctive present vegetation—spiny menodora
Inclusion 2: Position on landscape—concave, north-facing hillsides; distinctive present vegetation—Wyoming big sagebrush
Inclusion 3: Position on landscape—hillsides; distinctive present vegetation—spiny menodora

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 293)

Elements of Wildlife Habitat

Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Slatery soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Leo soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope, shrink-swell
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Slatery Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock
Local roads and streets: Moderate—depth to rock, slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Leo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

TABLE 293.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rodad	Slatery	Leo	1	2	3
Galleta	HIJA	10-20	10-20	5-20	5-10	5-15	10-20
Indian ricegrass	ORHY	2-5	2-5	5-10	5-20	5-10	2-5
Needlegrass	STIPA	5-10	5-10	2-5	---	5-10	5-10
Dropseed	SPORO	---	---	5-15	---	1-5	---
Bottlebrush squirreltail	SIHY	---	---	---	---	1-4	---
Other perennial grasses	PPGG	5-10	5-10	5-10	5-10	5-20	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-7	5-10	4-10	5-10
Native annual forbs	AAFF	2-5	2-5	2-4	2-5	2-7	2-5
Nevada ephedra	EPNE	5-10	5-10	---	5-10	5-10	5-10
Bud sagebrush	ARSP5	2-5	2-5	5-10	5-10	---	2-5
Spiny menodora	MESP2	10-25	10-25	---	10-30	---	10-25
Bailey greasewood	SAVEB	5-10	5-10	---	5-15	---	5-10
Anderson wolfberry	LYAN	5-10	5-10	1-5	---	---	5-10
Shadscale	ATCO	2-5	2-5	---	5-15	---	2-5
Fourwing saltbush	ATCA2	---	---	10-15	---	---	---
Winterfat	EULA5	---	---	5-20	---	---	---
Spiny hopsage	GRSP	---	---	2-8	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	---	20-30	---
Other shrubs	SSSS	15-25	15-25	10-25	10-20	10-20	15-25
Site symbol		029X037N	029X037N	029X046N	029X036N	029X010N	029X037N
Potential production (lb/acre):							
Favorable years		300	300	450	400	600	300
Normal years		200	200	350	300	400	200
Unfavorable years		100	100	175	100	200	100

Interpretive Groups

Capability classification: Rodad soil—VIIs, nonirrigated; Slatery soil—VIIs, nonirrigated; Leo soil—VIIs, nonirrigated

Site symbol: Rodad soil—029X037N; Slatery soil—029X037N; Leo soil—029X046N

1125—Rodad-Theriot-Kyler association

Map Unit Setting

Position on landscape: Mountains, hills
Elevation: 5,300 to 6,500 feet
Climatic data (average annual):
Precipitation—about 8 inches
Air temperature—about 53 degrees F
Frost-free season—about 120 days

Composition

Rodad very channery loam, moist, 15 to 50 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic, shallow)—35 percent
Theriot very stony loam, 15 to 50 percent slopes (Lithic Torriorthents - loamy-skeletal, carbonatic, mesic)—30 percent
Kyler extremely cobbly loam, 15 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, carbonatic, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Penelas very channery loam, 30 to 75 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—8 percent
Inclusion 2: Slatery very channery loam, 8 to 30 percent slopes (Typic Torriorthents - loamy, mixed (calcareous), mesic, shallow)—5 percent
Inclusion 3: Typic Haplargids, 4 to 15 percent slopes (Typic Haplargids - loamy-skeletal, mixed, mesic)—2 percent

Rodad Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Anderson wolfberry, spiny menodora
Typical profile:
0 to 4 inches—very channery loam; 0 to 10 percent cobbles and stones and 50 to 70 percent channers (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
4 to 12 inches—very gravelly clay loam, very channery clay loam; 0 to 15 percent cobbles and stones and 45 to 70 percent pebbles or channers (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6, A-7
12 inches—weathered bedrock
Range in depth to bedrock: 4 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 6 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Theriot Soil

Position on landscape: Lower side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Shadscale, galleta, Anderson wolfberry
Typical profile:
0 to 4 inches—very stony loam; 35 to 55 percent cobbles and stones and 20 to 55 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, ML, SM; estimated AASHTO classification - A-4
4 to 8 inches—very stony loam, very cobbly loam, very gravelly sandy loam; 20 to 55 percent cobbles and stones and 25 to 65 percent pebbles (by weight); massive; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1, A-2, A-4
8 inches—unweathered bedrock
Range in depth to bedrock: 4 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 0.5 to 1.0 inch
Water supplying capacity: 5 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.17; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight

Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Low

Kyler Soil

Position on landscape: Upper side slopes of mountains and hills
Parent material: Kind—residuum, colluvium; source—limestone, dolomite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Black sagebrush, galleta, Nevada ephedra
Typical profile:
0 to 3 inches—extremely cobbly loam; 40 to 50 percent cobbles and stones and 60 to 75 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-1, A-2
3 to 9 inches—very cobbly loam, very gravelly loam; 25 to 40 percent cobbles and stones and 35 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC, SM, SM-SC; estimated AASHTO classification - A-2, A-4
9 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: Less than 0.5 inch
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—severe; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—north-facing mountainsides and hillsides; distinctive present vegetation—black sagebrush, galleta, bluegrass
Inclusion 2: Position on landscape—ridges on mountains and hills; distinctive present vegetation—spiny menodora, shadscale, galleta
Inclusion 3: Position on landscape—alluvial fans adjacent to hills and mountains; distinctive present vegetation—shadscale, galleta, Indian ricegrass
Inclusion of minor extent: Position on landscape—eroded hills; distinctive present vegetation—shadscale

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 294)

Elements of Wildlife Habitat

Suitability of Rodad soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Theriot soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Kyler soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Rodad Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Theriot Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—too arid, droughty, large stones
Shallow excavations: Severe—depth to rock, slope, large stones
Local roads and streets: Severe—depth to rock, slope, large stones
Roadfill: Poor—depth to rock, slope, large stones
Sand: Improbable source—excess fines, large stones
Gravel: Improbable source—excess fines, large stones
Embankments, dikes, and levees: Severe—large stones, seepage, thin layer
(Kyler Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock
Shallow excavations: Severe—depth to rock, slope

TABLE 294.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Rodad	Theriot	Kyler	1	2	3
Galleta	HIJA	10-20	5-20	5-15	5-15	10-20	10-25
Indian ricegrass	ORHY	2-5	5-15	5-10	5-10	2-5	5-10
Needlegrass	STIPA	5-10	5-10	2-10	2-10	5-10	2-5
Bottlebrush squirreltail	SIHY	---	2-5	1-5	1-5	---	2-5
Bluegrass	POA++	---	---	2-10	2-10	---	---
Other perennial grasses	PPGG	5-10	5-10	10-15	10-15	5-10	5-15
Native annual grasses	AAGG	1-5	1-5	1-5	1-5	1-5	1-5
Perennial forbs	PPFF	5-10	5-10	5-10	5-10	5-10	4-10
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	2-5	1-5
Nevada ephedra	EPNE	5-10	2-5	5-10	5-10	5-10	1-5
Bud sagebrush	ARSP5	2-5	2-5	2-5	2-5	2-5	5-10
Spiny menodora	MESP2	10-25	---	---	---	10-25	---
Bailey greasewood	SAVEB	5-10	5-15	---	---	5-10	5-10
Anderson wolfberry	LYAN	5-10	---	---	---	5-10	---
Shadscale	ATCO	2-5	15-25	---	---	2-5	10-25
Black sagebrush	ARARN	---	---	15-20	15-20	---	---
Winterfat	EULA5	---	---	2-5	2-5	---	5-10
Other shrubs	SSSS	15-25	10-20	10-20	10-20	15-25	10-20
Joshua-tree	YUBR	---	---	---	---	---	1-2
Site symbol		029X037N	029X022N	029X014N	029X014N	029X037N	029X017N
Potential production (lb/acre):							
Favorable years		300	300	500	500	300	350
Normal years		200	200	300	300	200	250
Unfavorable years		100	100	100	100	100	100

Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones, thin layer

Interpretive Groups

Capability classification: Rodad soil—VIIs, nonirrigated; Theriot soil—VIIs, nonirrigated; Kyler soil—VIIs, nonirrigated
Site symbol: Rodad soil—029X037N; Theriot soil—029X022N; Kyler soil—29X014N

1140—Handpah Variant-Veet-Veet Variant association

Map Unit Setting

Position on landscape: Fan piedmonts, flood plains
Elevation: 6,800 to 7,300 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 49 degrees F
Frost-free season—about 100 days

Composition

Handpah Variant gravelly sandy clay loam, 4 to 30 percent slopes (Aridic Argixerolls - fine, montmorillonitic, mesic)—55 percent
Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—20 percent
Veet Variant fine sandy loam, 0 to 4 percent slopes (Fluvaquentic Haploxerolls - coarse-loamy over sandy or sandy-skeletal, mixed, mesic)—15 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents very gravelly loamy sand, 2 to 4 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—8 percent
Inclusion 2: Trailamp very gravelly loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—2 percent

Handpah Variant Soil

Position on landscape: Summits of upper side slopes of dissected fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Mountain big sagebrush, Thurber needlegrass, bottlebrush squirreltail
Typical profile:
0 to 8 inches—gravelly sandy clay loam; 25 to 50 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, GC; estimated AASHTO classification - A-2, A-6
8 to 23 inches—gravelly clay loam, gravelly clay; 0 to 5 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC, CL, CH; estimated AASHTO classification - A-7
23 to 36 inches—very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; hard, firm; mildly alkaline (pH 7.5); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
36 to 60 inches or more—extremely cobbly sandy clay loam, very cobbly sandy loam; 25 to 70 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; hard, firm; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 5.0 to 6.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: B
Erosion factors (upper layer): K value—0.20; T value—5; wind erodibility group—5
Hazard of erosion: By water—moderate; by wind—severe
Shrink-swell potential: High
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Veet Soil

Position on landscape: Stream terraces, inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, galleta, needleandthread
Typical profile:
0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2);

nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Variant Soil

Position on landscape: Drainageways, flood plains
Parent material: Mixed alluvium
Slope features: Length—short; shape—smooth
Dominant present vegetation: Basin big sagebrush, rubber rabbitbrush, galleta, basin wildrye
Typical profile:
0 to 11 inches—fine sandy loam; 0 to 10 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
11 to 24 inches—stratified sandy loam to loam; 0 to 10 percent pebbles (by weight); massive; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - ML; estimated AASHTO classification - A-4
24 to 60 inches or more—stratified gravelly sandy loam to very gravelly sand; 0 to 15 percent cobbles and stones and 45 to 65 percent pebbles (by weight); massive; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Frequency—occasional; duration—very brief; months—April to September
Permeability: Moderate
Available water capacity: 5 to 6 inches
Water supplying capacity: 12 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.32; T value—5; wind erodibility group—3
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—drainageways; distinctive present vegetation—basin big sagebrush, Wyoming big sagebrush, rubber rabbitbrush
Inclusion 2: Position on landscape—hillsides adjacent to fan piedmonts; distinctive present vegetation—singleleaf pinyon, mountain big sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 295)

Elements of Wildlife Habitat

Suitability of Handpah Variant soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet Variant soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Handpah Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Fair—soil blowing
Shallow excavations: Severe—slope
Local roads and streets: Severe—shrink-swell, slope
Roadfill: Fair—slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Slight
(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Veet Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing

TABLE 295.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions				
		Component name			Inclusion number--	
		Handpah Variant	Veet	Veet Variant	1	2
Galleta	HIJA	5-10	5-25	---	1-3	---
Beardless wheatgrass	AGIN	5-10	---	---	---	---
Needlegrass	STIPA	5-10	5-15	1-5	---	2-5
Bluegrass	POA++	3-5	---	---	---	10-20
Indian ricegrass	ORHY	3-5	5-15	---	2-5	---
Dropseed	SPORO	---	5-15	---	---	---
Bottlebrush squirreltail	SIHY	---	1-5	---	---	5-10
Basin wildrye	ELCI2	---	---	15-30	2-5	---
Western wheatgrass	AGSM	---	---	5-10	---	---
Alkali sacaton	SPAI	---	---	1-5	---	---
Muttongrass	POFE	---	---	---	---	25-40
Prairie junegrass	KOCR	---	---	---	---	5-10
Other perennial grasses	PPGG	10-20	5-20	5-15	5-10	5-10
Native annual grasses	AAGG	2-4	1-5	2-8	1-5	---
Perennial forbs	PPFF	4-12	3-10	2-7	5-10	5-15
Native annual forbs	AAFF	2-5	2-5	1-5	1-5	1-3
Mountain big sagebrush	ARTRV	10-25	---	---	---	10-20
Green ephedra	EPVI	3-7	---	---	---	---
Bitterbrush	PURSH	2-5	---	---	---	5-15
Wyoming big sagebrush	ARTRW*	---	15-20	---	---	---
Spiny hopsage	GRSP	---	5-10	---	---	---
Bud sagebrush	ARSP5	---	5-10	---	---	---
Winterfat	EULA5	---	2-10	---	---	---
Basin big sagebrush	ARTRT*	---	---	1-5	10-20	---
Rubber rabbitbrush	CHNA2	---	---	1-5	2-5	---
Rose	ROSA+	---	---	0-5	---	---
Littleleaf horsebrush	TEGL	---	---	---	1-5	---
Nevada ephedra	EPNE	---	---	---	1-5	---
Snowberry	SYMPH	---	---	---	---	2-5
Curlleaf mountainmahogany	CELE3	---	---	---	---	2-5
Douglas rabbitbrush	CHVI8	---	---	---	---	1-3
Other shrubs	SSSS	10-20	10-20	2-10	10-25	5-15
Willow	SALIX	---	---	0-2	---	---
Singleleaf pinyon	PIMO	---	---	---	---	2-5
Utah juniper	JUOS	---	---	---	---	1-3
Site symbol		029X030N	029X049N	029X003N	029X009N	029X066N
Potential production (lb/acre):						
Favorable years		1,000	900	3,000	700	475
Normal years		700	600	2,000	500	375
Unfavorable years		500	300	800	200	200

Shallow excavations: Severe—cutbanks cave
Local roads and streets: Severe—flooding
Roadfill: Good
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Handpah Variant soil—VIs, nonirrigated; Veet soil—VIIs, nonirrigated; Veet Variant soil—IIIw, irrigated, and VIw, nonirrigated
Site symbol: Handpah Variant soil—029X030N; Veet soil—029X049N; Veet Variant soil—029X003N

1150—Brier-Squawtip-Gabbvally association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,300 to 8,200 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 46 degrees F
Frost-free season—about 100 days

Composition

Brier very cobbly loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—40 percent
Squawtip very stony loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid)—25 percent
Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Bellehelen very gravelly sandy loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—5 percent
Inclusion 2: Rock outcrop—4 percent
Inclusion 3: Handpah Variant very gravelly loam, 4 to 15 percent slopes (Aridic Argixerolls - fine, montmorillonitic, mesic)—4 percent
Inclusion 4: Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—2 percent

Brier Soil

Position on landscape: Middle side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, ephedra, bottlebrush squirreltail
Typical profile:
0 to 3 inches—very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Squawtip Soil

Position on landscape: North-facing upper side slopes of mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, ephedra, bottlebrush squirreltail
Typical profile:
0 to 10 inches—very stony loam; 30 to 50 percent cobbles and stones and 15 to 30 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-4
10 to 24 inches—very cobbly loam, very gravelly sandy clay loam, very gravelly sandy loam; 10 to 45 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, SM-SC; estimated AASHTO classification - A-2
24 inches—weathered bedrock
Range in depth to bedrock: 20 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 3.0 to 3.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid

Hydrologic group: C
Erosion factors (upper layer): K value—0.15; T value—2; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, galleta, ephedra, bottlebrush squirreltail
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—mountainsides; distinctive present vegetation—singleleaf pinyon, black sagebrush
Inclusion 2: Position on landscape—ridges and crests of mountains; distinctive present vegetation—barren
Inclusion 3: Position on landscape—remnants of mountain-valley fans; distinctive present vegetation—mountain big sagebrush
Inclusion 4: Position on landscape—drainageways, mountain-valley fans; distinctive present vegetation—Wyoming big sagebrush, spiny hopsage

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 296)

Woodland

(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass
(Squawtip Soil)
Site index for common trees: Singleleaf pinyon—65
Most important native understory plants: Mountain big sagebrush, bluegrass, needlegrass, bitterbrush, Indian ricegrass

Elements of Wildlife Habitat

Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Squawtip soil for named elements:
Wild herbaceous plants (nonirrigated)—good
Coniferous plants (nonirrigated)—good
Shrubs (nonirrigated)—good
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Squawtip Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—large stones
Shallow excavations: Severe—slope

TABLE 296.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Brier	Squawtip	Gabbvally	1	2	3	4
Bluegrass	POA++	10-20	10-20	---	10-20	---	3-5	---
Prairie junegrass	KOCR	5-10	5-10	---	---	---	---	---
Needlegrass	STIPA	5-10	2-5	5-10	5-15	---	5-10	5-15
Indian ricegrass	ORHY	1-5	---	5-10	2-5	---	3-5	5-15
Bottlebrush squirreltail	SIHY	1-5	5-10	1-4	5-15	---	---	1-5
Muttongrass	POFE	---	25-40	---	2-5	---	---	---
Galleta	HIJA	---	---	5-15	---	---	5-10	5-25
Dropseed	SPORO	---	---	1-5	---	---	---	5-15
Needleandthread	STCO4	---	---	---	2-5	---	---	---
Beardless wheatgrass	AGIN	---	---	---	---	---	5-10	---
Other perennial grasses	PPGG	5-15	5-10	5-20	5-10	---	10-20	5-20
Native annual grasses	AAGG	1-3	---	1-5	---	---	2-4	1-5
Perennial forbs	PPFF	5-10	5-15	4-10	5-15	---	4-12	3-10
Native annual forbs	AAFF	1-5	1-3	2-7	1-3	---	2-5	2-5
Wyoming big sagebrush	ARTRW*	10-20	---	20-30	---	---	---	15-20
Bitterbrush	PURSH	5-10	5-15	---	5-10	---	2-5	---
Serviceberry	AMELA	1-5	---	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	1-5	2-5	---	---	---	---	---
Green ephedra	ERVI	2-5	---	---	---	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	---	---	---	10-25	---
Snowberry	SYMPH	---	2-5	---	---	---	---	---
Douglas rabbitbrush	CHVI8	---	1-3	---	2-5	---	---	---
Nevada ephedra	EPNE	---	---	5-10	---	---	---	---
Black sagebrush	ARARN	---	---	---	15-25	---	---	---
Green ephedra	EPVI	---	---	---	2-5	---	3-7	---
Spiny hopsage	GRSP	---	---	---	---	---	---	5-10
Bud sagebrush	ARSP5	---	---	---	---	---	---	5-10
Winterfat	EULA5	---	---	---	---	---	---	2-10
Other shrubs	SSSS	10-20	5-15	10-20	5-10	---	10-20	10-20
Singleleaf pinyon	PIMO	2-5	2-5	---	5-10	---	---	---
Utah juniper	JUOS	1-4	1-3	---	5-10	---	---	---
Site symbol		029X065N	029X066N	029X010N	029X069N	---	029X030N	029X049N
Potential production (lb/acre):								
Favorable years		425	475	600	350	---	1,000	900
Normal years		350	375	400	275	---	700	600
Unfavorable years		200	200	200	150	---	500	300

Local roads and streets: Severe—slope

Roadfill: Poor—depth to rock, slope

Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—large stones, thin layer

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Slope, depth to rock
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Brier soil—VIIs, nonirrigated; Squawtip soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated
Site symbol: Gabbvally soil—029X010N
Woodland suitability group: Brier soil—1r; Squawtip soil—2r

1151—Brier-Bellehelen-Gabbvally association

Map Unit Setting

Position on landscape: Hills, mountains
Elevation: 7,400 to 8,200 feet
Climatic data (average annual):
Precipitation—about 12 inches
Air temperature—about 48 degrees F
Frost-free season—about 100 days

Composition

Brier very cobbly loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—35 percent
Bellehelen very stony loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—30 percent
Gabbvally very stony loam, 15 to 50 percent slopes (Lithic Xerollic Haplargids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Ravenswood very stony loam, 15 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—7 percent
Inclusion 2: Rock outcrop—6 percent
Inclusion 3: Wahguyhe very stony sandy loam, 30 to 50 percent slopes (Lithic Xeric Torriorthents - loamy-skeletal, mixed, nonacid, mesic)—2 percent

Brier Soil

Position on landscape: Hillsides, mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, Wyoming big sagebrush, ephedra, needleandthread, bluegrass
Typical profile:
0 to 3 inches—very cobbly loam; 30 to 50 percent cobbles and stones and 40 to 50 percent pebbles (by weight); platy structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GM; estimated AASHTO classification - A-2, A-4
3 to 15 inches—very gravelly clay loam, very cobbly loam, very cobbly sandy clay loam; 25 to 45 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-6
15 inches—unweathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Bellehelen Soil

Position on landscape: North-facing hillsides and mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, black sagebrush, green ephedra, needleandthread, bluegrass
Typical profile:
0 to 3 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-4
3 to 13 inches—very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam; 0 to 25 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 7 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7

Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Gabbvally Soil

Position on landscape: South-facing, lower side slopes of hills and mountains
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Wyoming big sagebrush, ephedra, galleta, needleandthread
Typical profile:
0 to 4 inches—very stony loam; 10 to 40 percent cobbles and stones and 30 to 45 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-4
4 to 13 inches—very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam; 0 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, GM-GC; estimated AASHTO classification - A-2
13 inches—unweathered bedrock
Range in depth to bedrock: 6 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.0 to 1.6 inches
Water supplying capacity: 7 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—7
Hazard of erosion: By water—moderate; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—higher north-facing hillsides and mountainsides; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush
Inclusion 2: Position on landscape—small peaks and ridges on mountains and hills; distinctive present vegetation—barren
Inclusion 3: Position on landscape—eroded hills and mountains; distinctive present vegetation—Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 297)

Woodland

(Brier Soil)
Site index for common trees: Singleleaf pinyon—30; Utah juniper—30
Most important native understory plants: Wyoming big sagebrush, green ephedra, desert bitterbrush, bluegrass, Thurber needlegrass, Indian ricegrass
(Bellehelen Soil)
Site index for common trees: Singleleaf pinyon—35; Utah juniper—35
Most important native understory plants: Indian ricegrass, black sagebrush, desert bitterbrush, green ephedra, mountainmahogany, Thurber needlegrass, pine bluegrass

Elements of Wildlife Habitat

Suitability of Brier soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Bellehelen soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor
Suitability of Gabbvally soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Brier Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer, large stones
(Bellehelen Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones, depth to rock

TABLE 297.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions					
		Component name			Inclusion number--		
		Brier	Bellehelen	Gabbvally	1	2	3
Bluegrass	POA++	10-20	10-20	---	10-20	---	---
Prairie junegrass	KOCR	5-10	---	---	5-10	---	---
Needlegrass	STIPA	5-10	5-15	5-10	2-5	---	5-10
Indian ricegrass	ORHY	1-5	2-5	5-10	---	---	5-10
Bottlebrush squirreltail	SIHY	1-5	5-15	1-4	5-10	---	1-4
Muttongrass	POFE	---	2-5	---	25-40	---	---
Needleandthread	STCO4	---	2-5	---	---	---	---
Galleta	HIJA	---	---	5-15	---	---	5-15
Dropseed	SPORO	---	---	1-5	---	---	1-5
Other perennial grasses	PPGG	5-15	5-10	5-20	5-10	---	5-20
Native annual grasses	AAGG	1-3	---	1-5	---	---	1-5
Perennial forbs	PPFF	5-10	5-15	4-10	5-15	---	4-10
Native annual forbs	AAFF	1-5	1-3	2-7	1-3	---	2-7
Wyoming big sagebrush	ARTRW*	10-20	---	20-30	---	---	20-30
Bitterbrush	PURSH	5-10	5-10	---	5-15	---	---
Serviceberry	AMELA	1-5	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	1-5	---	---	2-5	---	---
Green ephedra	ERVI	2-5	---	---	---	---	---
Black sagebrush	ARARN	---	15-25	---	---	---	---
Green ephedra	EPVI	---	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	---	2-5	---	1-3	---	---
Nevada ephedra	EPNE	---	---	5-10	---	---	5-10
Mountain big sagebrush	ARTRV	---	---	---	10-20	---	---
Snowberry	SYMPH	---	---	---	2-5	---	---
Other shrubs	SSSS	10-20	5-10	10-20	5-15	---	10-20
Singleleaf pinyon	PIMO	2-5	5-10	---	2-5	---	---
Utah juniper	JUOS	1-4	5-10	---	1-3	---	---
Site symbol		029X065N	029X069N	029X010N	029X066N	---	029X010N
Potential production (lb/acre):							
Favorable years		425	350	600	475	---	600
Normal years		350	275	400	375	---	400
Unfavorable years		200	150	200	200	---	200

Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Gabbvally Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—depth to rock, slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Brier soil—VIIs, nonirrigated; Bellehelen soil—VIIs, nonirrigated; Gabbvally soil—VIIs, nonirrigated
Site symbol: Gabbvally soil—029X010N
Woodland suitability group: Brier soil—1r; Bellehelen soil—1r

1160—Mohocken-Cucamungo-Ravenswood association

Map Unit Setting

Position on landscape: Mountains
Elevation: 7,600 to 8,600 feet
Climatic data (average annual):
Precipitation—about 15 inches
Air temperature—about 45 degrees F
Frost-free season—about 80 days

Composition

Mohocken very gravelly loam, 8 to 30 percent slopes (Typic Palexerolls - fine, montmorillonitic, frigid)—40 percent
Cucamungo very stony sandy loam, 15 to 50 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, frigid, shallow)—25 percent
Ravenswood very stony loam, 15 to 50 percent slopes (Typic Argixerolls - clayey-skeletal, montmorillonitic, frigid)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Typic Argixerolls very stony loam, 15 to 30 percent slopes (Typic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—7 percent
Inclusion 2: Hiridge very gravelly sandy loam, 8 to 50 percent slopes (Argic Cryoborolls - loamy-skeletal, mixed, shallow)—3 percent
Inclusion 3: Xerollic Haplargids very stony loam, 15 to 50 percent slopes (Xerollic Haplargids - loamy-skeletal, mixed, mesic, shallow)—3 percent
Inclusion 4: Rock outcrop—2 percent

Mohocken Soil

Position on landscape: Higher side slopes of mountains
Parent material: Kind—residuum, colluvium; source—porphoritic latite
Slope features: Length—short; shape—convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, low sagebrush, green ephedra, eriogonum, prairie junegrass
Typical profile:
0 to 8 inches—very gravelly loam; 10 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM-SC, SC; estimated AASHTO classification - A-2
8 to 14 inches—gravelly clay; 0 to 10 percent cobbles and stones and 25 to 45 percent pebbles (by weight); angular blocky structure; very hard, firm; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC, CL, CH; estimated AASHTO classification - A-7
14 to 24 inches—very gravelly clay loam, very gravelly clay, very gravelly sandy clay; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); subangular blocky structure; hard, firm; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2
24 inches—weathered bedrock
Range in depth to bedrock: 20 to 30 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.5 to 3.0 inches
Water supplying capacity: 10 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.05; T value—2; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: High
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Moderate

Cucamungo Soil

Position on landscape: Lower side slopes of mountains
Parent material: Kind—residuum, colluvium; source—porphoritic latite
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, bitterbrush, Utah juniper, mountain big sagebrush, green ephedra, bluegrass
Typical profile:
0 to 3 inches—very stony sandy loam; 25 to 55 percent cobbles and stones and 25 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1
3 to 15 inches—very gravelly sandy clay loam, very gravelly loam, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SC; estimated AASHTO classification - A-2, A-6
15 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None

Permeability: Moderate
Available water capacity: 1.0 to 1.5 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: D
Erosion factors (upper layer): K value—0.05; T value—1; wind erodibility group—8
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Ravenswood Soil

Position on landscape: Mountainsides
Parent material: Kind—residuum, colluvium; source—volcanic rock
Slope features: Length—short; shape—concave to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, antelope bitterbrush, Sandberg bluegrass
Typical profile:
0 to 8 inches—very stony loam; 15 to 25 percent cobbles and stones and 0 to 25 percent pebbles (by weight); subangular blocky structure; soft, very friable; neutral (pH 7.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - CL-ML; estimated AASHTO classification - A-4
8 to 13 inches—very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2
13 to 32 inches—very gravelly clay, very gravelly clay loam; 5 to 15 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; hard, firm; mildly alkaline (pH 7.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC; estimated AASHTO classification - A-2, A-7
32 inches—unweathered bedrock
Range in depth to bedrock: 30 to 40 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 5 to 6 inches
Water supplying capacity: 11 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.37; T value—2; wind erodibility group—6
Hazard of erosion: By water—severe; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—moderate; to concrete—low
Potential frost action: Low

Contrasting Inclusions

Inclusion 1: Position on landscape—south-facing lower side slopes of mountains; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Inclusion 2: Position on landscape—mountaintops, ridges; distinctive present vegetation—low sagebrush
Inclusion 3: Position on landscape—lowest side slopes of mountains; distinctive present vegetation—Wyoming big sagebrush, green ephedra
Inclusion 4: Position on landscape—small peaks and ridges on mountains; distinctive present vegetation—barren

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 298)

Woodland

(Mohocken Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Low sagebrush, green ephedra, prairie junegrass, eriogonum, needlegrass
(Cucamungo Soil)
Site index for common trees: Singleleaf pinyon—54; Utah juniper—54
Most important native understory plants: Mountain big sagebrush, currant, pine bluegrass, bottlebrush squirreltail, prairie junegrass, mountainmahogany, desert bitterbrush
(Ravenswood Soil)
Site index for common trees: Singleleaf pinyon—50; Utah juniper—50
Most important native understory plants: Mountain big sagebrush, Sandberg bluegrass, Thurber needlegrass

Elements of Wildlife Habitat

Suitability of Mohocken soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Cucamungo soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

TABLE 298.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community or that potential production is not given]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Mohocken	Cucamungo	Ravenswood	1	2	3	4
Bluegrass	POA++	5-15	10-20	10-20	10-20	3-5	---	---
Needlegrass	STIPA	5-10	2-5	2-5	5-10	5-10	5-10	---
Prairie junegrass	KOCR	2-5	5-10	5-10	5-10	---	---	---
Indian ricegrass	ORHY	2-5	---	---	1-5	---	5-10	---
Bottlebrush squirreltail	SIHY	1-5	5-10	5-10	1-5	---	1-4	---
Muttongrass	POFE	---	25-40	25-40	---	---	---	---
Western wheatgrass	AGSM	---	---	---	---	5-10	---	---
Galleta	HIJA	---	---	---	---	---	5-15	---
Dropseed	SPORO	---	---	---	---	---	1-5	---
Other perennial grasses	PPGG	5-15	5-10	5-10	5-15	10-15	5-20	---
Native annual grasses	AAGG	---	---	---	1-3	2-4	1-5	---
Perennial forbs	PPFF	5-10	5-15	5-15	5-10	8-12	4-10	---
Native annual forbs	AAFF	1-5	1-3	1-3	1-5	3-7	2-7	---
Low sagebrush	ARAR8	20-35	---	---	---	20-30	---	---
Bitterbrush	PURSH	2-10	5-15	5-15	5-10	---	---	---
Green ephedra	EPVI	1-5	---	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	1-5	2-5	2-5	1-5	---	---	---
Serviceberry	AMELA	1-5	---	---	1-5	---	---	---
Mountain big sagebrush	ARTRV	---	10-20	10-20	---	---	---	---
Snowberry	SYMPH	---	2-5	2-5	---	---	---	---
Douglas rabbitbrush	CHVI8	---	1-3	1-3	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	---	---	10-20	---	20-30	---
Green ephedra	ERVI	---	---	---	2-5	---	---	---
Low rabbitbrush	CHVIH2	---	---	---	---	3-5	---	---
Horsebrush	TETRA3	---	---	---	---	2-5	---	---
Nevada ephedra	EPNE	---	---	---	---	---	5-10	---
Other shrubs	SSSS	10-20	5-15	5-15	10-20	15-20	10-20	---
Singleleaf pinyon	PIMO	2-5	2-5	2-5	2-5	---	---	---
Utah juniper	JUOS	1-3	1-3	1-3	1-4	---	---	---
Site symbol		O29XO68N	O29XO66N	O29XO66N	O29XO65N	O29XO53N	O29XO1ON	---
Potential production (lb/acre):								
Favorable years		300	475	475	425	700	600	---
Normal years		250	375	375	350	400	400	---
Unfavorable years		125	200	200	200	300	200	---

Suitability of Ravenswood soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Mohocken Soil)
Suitability and limitations for the following uses:

Rangeland seeding: Poor—large stones, rooting depth
Shallow excavations: Severe—slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes and levees: Severe—thin layer

(Cucamungo Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, large stones
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—slope, depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

(Ravenswood Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—soil blowing, erodes easily
Shallow excavations: Severe—slope, depth to rock
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock, slope
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Mohocken soil—VIIs, nonirrigated; Cucamungo soil—VIIs, nonirrigated; Ravenswood soil—VIIs, nonirrigated
Woodland suitability group: Mohocken soil—1r; Cucamungo soil—2r; Ravenswood soil—1r

1200—Armespan Variant-Handpah-Ubehebe association

Map Unit Setting

Position on landscape: Fan piedmonts, hillsides
Elevation: 6,800 to 7,500 feet
Climatic data (average annual):
Precipitation—about 11 inches
Air temperature—about 50 degrees F
Frost-free season—about 100 days

Composition

Armespan Variant gravelly fine sandy loam, 4 to 15 percent slopes (Typic Durixerolls - loamy-skeletal, mixed, mesic, shallow)—40 percent
Handpah very gravelly loam, 2 to 15 percent slopes (Xerollic Durargids - loamy, mixed, mesic, shallow)—25 percent
Ubehebe very gravelly sandy loam, 15 to 30 percent slopes (Aridic Argixerolls - loamy-skeletal, mixed, mesic, shallow)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Armespan very gravelly fine sandy loam, 4 to 15 percent slopes (Durixerollic Calciorthids - loamy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Xeric Torriorthents very cobbly loamy sand, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—4 percent
Inclusion 3: Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—3 percent
Inclusion 4: Brier very gravelly sandy loam, 15 to 50 percent slopes (Lithic Argixerolls - loamy-skeletal, mixed, mesic)—2 percent

Armespan Variant Soil

Position on landscape: Summits of side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—plane to convex
Dominant present vegetation: Singleleaf pinyon, Utah juniper, mountain big sagebrush, mountainmahogany
Typical profile:
0 to 3 inches—gravelly fine sandy loam; 0 to 5 percent cobbles and stones and 30 to 50 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-2, A-4
3 to 16 inches—very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam; 0 to 5 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GM-GC; estimated AASHTO classification - A-2
16 to 28 inches—indurated
28 to 60 inches or more—stratified very cobbly sandy loam to very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, very friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, SM; estimated AASHTO classification - A-1
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Above the indurated layer—moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.15; T value—1; wind erodibility group—4
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Handpah Soil

Position on landscape: Lower fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, green ephedra, bottlebrush squirreltail
Typical profile:
0 to 3 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2
3 to 10 inches—gravelly clay loam; 0 to 10 percent cobbles and stones and 25 to 40 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, SC; estimated AASHTO classification - A-6
10 to 18 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 55 to 75 percent pebbles (by weight); massive; slightly hard to brittle, very friable to brittle; strongly alkaline (pH

8.6); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM,GM; estimated AASHTO classification - A-1
18 to 40 inches—indurated
24 to 40 inches—cemented
Range in depth to indurated layer: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Slow
Available water capacity: 2.0 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—7
Hazard of erosion: By water—slight; by wind—slight
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Ubehebe Soil

Position on landscape: Hillsides adjacent to fan piedmonts
Parent material: Kind—residuum, colluvium; source—sedimentary rock
Slope features: Length—short; shape—smooth
Dominant present vegetation: Singleleaf pinyon, Utah juniper, galleta, bottlebrush squirreltail, black sagebrush
Typical profile:
0 to 2 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 60 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, GM; estimated AASHTO classification - A-1
2 to 4 inches—very gravelly loam; 0 to 10 percent cobbles and stones and 45 to 55 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, SM-SC; estimated AASHTO classification - A-2
4 to 17 inches—very gravelly loam; 5 to 15 percent cobbles and stones and 45 to 60 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC, GC; estimated AASHTO classification - A-2
17 inches—weathered bedrock
Range in depth to bedrock: 14 to 20 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 1.5 to 2.0 inches
Water supplying capacity: 9 inches
Runoff: Rapid
Hydrologic group: C
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—summits of side slopes of lower fan piedmont remnants; distinctive present vegetation—black sagebrush, invading singleleaf pinyon and Utah juniper
Inclusion 2: Position on landscape—drainageways at higher elevations; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Inclusion 3: Position on landscape—inset fans; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush, spiny hopsage
Inclusion 4: Position on landscape—side slopes of hills adjacent to fan piedmonts; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush

Major Uses

Rangeland, wildlife habitat, woodland

Potential Native Plant Community (Table 299)

Woodland

(Armespan Variant Soil)
Site index for common trees: Singleleaf pinyon—45; Utah juniper—45
Most important native understory plants: Mountain big sagebrush, Nevada ephedra, black sagebrush, bottlebrush squirreltail, desert bitterbrush, Wyoming big sagebrush
(Ubehebe Soil)
Site index for common trees: Utah juniper—45; singleleaf pinyon—45
Most important native understory plants: Black sagebrush, green ephedra, pine bluegrass, bottlebrush squirreltail, desert bitterbrush

Elements of Wildlife Habitat

Suitability of Armespan Variant soil for named elements:

TABLE 299.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Armespan Variant	Handpah	Ubehebe	1	2	3	4
Muttongrass	POFE	25-40	---	2-5	---	---	---	---
Bluegrass	POA++	10-20	---	10-20	---	10-20	---	10-20
Bottlebrush squirreltail	SIHY	5-10	1-5	5-15	---	1-5	1-5	1-5
Prairie junegrass	KOCR	5-10	---	---	---	5-10	---	5-10
Needlegrass	STIPA	2-5	2-10	5-15	5-15	5-10	5-15	5-10
Galleta	HIJA	---	5-15	---	5-20	---	5-25	---
Indian ricegrass	ORHY	---	5-10	2-5	5-10	1-5	5-15	1-5
Dropseed	SPORO	---	1-5	---	---	---	5-15	---
Needleandthread	STCO4	---	---	2-5	---	---	---	---
Other perennial grasses	PPGG	5-10	10-20	5-10	10-15	5-15	5-20	5-15
Native annual grasses	AAGG	---	1-5	---	1-5	1-3	1-5	1-3
Perennial forbs	PPFF	5-15	5-10	5-15	3-8	5-10	3-10	5-10
Native annual forbs	AAFF	1-3	2-5	1-3	2-5	1-5	2-5	1-5
Mountain big sagebrush	ARTRV	10-20	---	---	---	---	---	---
Bitterbrush	PURSH	5-15	---	5-10	---	5-10	---	5-10
Snowberry	SYMPH	2-5	---	---	---	---	---	---
Curlleaf mountainmahogany	CELE3	2-5	---	---	---	1-5	---	1-5
Douglas rabbitbrush	CHVI8	1-3	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW*	---	15-20	---	---	10-20	15-20	10-20
Fourwing saltbush	ATCA2	---	5-10	---	---	---	---	---
Nevada ephedra	EPNE	---	2-5	---	2-5	---	---	---
Winterfat	EULA5	---	2-5	---	2-5	---	2-10	---
Spiny hopsage	GRSP	---	2-5	---	---	---	5-10	---
Black sagebrush	ARARN	---	---	15-25	20-25	---	---	---
Green ephedra	EPVI	---	---	2-5	---	---	---	---
Bud sagebrush	ARSP5	---	---	---	5-10	---	5-10	---
Serviceberry	AMELA	---	---	---	---	1-5	---	1-5
Green ephedra	ERVI	---	---	---	---	2-5	---	2-5
Other shrubs	SSSS	5-15	10-25	5-10	10-20	10-20	10-20	10-20
Singleleaf pinyon	PIMO	2-5	---	5-10	---	2-5	---	2-5
Utah juniper	JUOS	1-3	---	5-10	---	1-4	---	1-4
Site symbol		O29XO66N	O29XO06N	O29XO69N	O29XO08N	O29XO65N	O29XO49N	O29XO65N
Potential production (lb/acre):								
Favorable years		475	800	350	700	425	900	425
Normal years		375	500	275	400	350	600	350
Unfavorable years		200	300	150	200	200	300	200

Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Handpah soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Coniferous plants (nonirrigated)—poor
Shrubs (nonirrigated)—fair
Suitability of Ubehebe soil for named elements:
Wild herbaceous plants (nonirrigated)—poor
Shrubs (nonirrigated)—poor

Ratings for Selected Uses

(Armespan Variant Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, soil blowing
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—seepage
(Handpah Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan
Local roads and streets: Severe—cemented pan
Roadfill: Poor—cemented pan
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer
(Ubehebe Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Droughty, small stones
Shallow excavations: Severe—depth to rock, slope
Local roads and streets: Severe—slope
Roadfill: Poor—depth to rock
Sand: Improbable source—excess fines
Gravel: Improbable source—excess fines
Embankments, dikes, and levees: Severe—thin layer

Interpretive Groups

Capability classification: Armespan Variant soil—VIIs, nonirrigated; Handpah soil—VIIs, nonirrigated; Ubehebe soil—VIIs, nonirrigated
Site symbol: Handpah soil—029X006N
Woodland suitability group: Armespan Variant soil—1d; Ubehebe soil—1x

1210—Armespan-Zadvar-Veet association

Map Unit Setting

Position on landscape: Fan piedmonts
Elevation: 6,400 to 7,400 feet
Climatic data (average annual):
Precipitation—about 10 inches
Air temperature—about 51 degrees F
Frost-free season—about 100 days

Composition

Armespan very gravelly sandy loam, 4 to 15 percent slopes (Durixerollic Calciorthids - loamy-skeletal, mixed, mesic)—35 percent
Zadvar very gravelly sandy loam, 2 to 8 percent slopes (Haploxerollic Durargids - loamy, mixed, mesic, shallow)—30 percent
Veet very gravelly sandy loam, 2 to 8 percent slopes (Xerollic Camborthids - loamy-skeletal, mixed, mesic)—20 percent
Contrasting inclusions as follows—
Inclusion 1: Xeric Torriorthents very cobbly loamy sand, 2 to 8 percent slopes (Xeric Torriorthents - sandy-skeletal, mixed, mesic)—6 percent
Inclusion 2: Armespan Variant very gravelly sandy loam, 4 to 15 percent slopes (Typic Durixerolls - loamy-skeletal, mixed, mesic, shallow)—5 percent
Inclusion 3: Tomel very gravelly sandy loam, moist, 2 to 15 percent slopes (Typic Durargids - loamy-skeletal, mixed, mesic, shallow)—2 percent
Inclusion 4: Xeric Torriorthents very gravelly sandy loam, 15 to 30 percent slopes (Xeric Torriorthents - loamy-skeletal, mixed (calcareous), mesic, shallow)—2 percent

Armespan Soil

Position on landscape: Summits and side slopes of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, galleta, invading singleleaf pinyon and Utah juniper
Typical profile:
0 to 3 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); platy structure; soft, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
3 to 9 inches—sandy loam, gravelly sandy loam, gravelly loam; 0 to 5 percent cobbles and stones and 10 to 35 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.2); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1, A-2
9 to 15 inches—gravelly sandy loam, gravelly loam; 0 to 10 percent cobbles and stones and 25 to 50 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.4); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM,GM; estimated AASHTO classification - A-2, A-4
15 to 30 inches—very gravelly sandy loam, very gravelly coarse sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); moderately saline (8 to 16 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1
30 to 60 inches or more—very gravelly loamy coarse sand, very gravelly loamy sand; 0 to 10 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; soft, very friable; strongly alkaline (pH 8.6); nonsaline (less than 4 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM, SP-SM, GM, GP-GM; estimated AASHTO classification - A-1
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 7 inches
Runoff: Medium
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Zadvar Soil

Position on landscape: Lower part of fan piedmont remnants
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Black sagebrush, Nevada ephedra, rabbitbrush, bottlebrush squirreltail, galleta
Typical profile:
0 to 6 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 65 percent pebbles (by weight); subangular blocky structure; soft, very friable; moderately alkaline (pH 8.2);

nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM; estimated AASHTO classification - A-1

6 to 12 inches—gravelly clay loam, sandy clay loam; 0 to 5 percent cobbles and stones and 15 to 45 percent pebbles (by weight); subangular blocky structure; slightly hard, very friable; moderately alkaline (pH 8.0); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GC, CL, SC; estimated AASHTO classification - A-6

12 to 22 inches—cemented

22 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly coarse sand; 0 to 15 percent cobbles and stones and 50 to 75 percent pebbles (by weight); massive; slightly hard to brittle; firm to brittle; moderately alkaline (pH 8.4); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM, GP-GM; estimated AASHTO classification - A-1

Range in depth to cemented layer: 10 to 14 inches
Depth to seasonal high water table: More than 60 inches
Hazard of flooding: None
Permeability: Moderately slow
Available water capacity: 1.5 to 2.5 inches
Water supplying capacity: 7 inches
Runoff: Slow
Hydrologic group: D
Erosion factors (upper layer): K value—0.10; T value—1; wind erodibility group—6
Hazard of erosion: By water—slight; by wind—moderate
Shrink-swell potential: Moderate
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Veet Soil

Position on landscape: Inset fans
Parent material: Mixed alluvium
Slope features: Length—long; shape—smooth
Dominant present vegetation: Wyoming big sagebrush, Nevada ephedra, rabbitbrush, bottlebrush squirreltail, galleta
Typical profile:

0 to 4 inches—very gravelly sandy loam; 0 to 10 percent cobbles and stones and 50 to 70 percent pebbles (by weight); subangular blocky structure; soft, very friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - SM; estimated AASHTO classification - A-1

4 to 14 inches—very gravelly sandy loam; 10 to 25 percent cobbles and stones and 45 to 65 percent pebbles (by weight); subangular blocky structure; slightly hard, friable; mildly alkaline (pH 7.8); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GM-GC; estimated AASHTO classification - A-2

14 to 60 inches or more—stratified extremely gravelly sandy loam to very gravelly loamy coarse sand; 10 to 25 percent cobbles and stones and 50 to 70 percent pebbles (by weight); massive; slightly hard, friable; moderately alkaline (pH 8.2); nonsaline (less than 2 mmhos/cm); nonsodic (SAR of less than 2); estimated Unified classification - GP-GM, GM; estimated AASHTO classification - A-1

Depth to seasonal high water table: More than 60 inches
Hazard of flooding: Rare
Permeability: Moderate
Available water capacity: 2.5 to 3.5 inches
Water supplying capacity: 8 inches
Runoff: Slow
Hydrologic group: B
Erosion factors (upper layer): K value—0.10; T value—5; wind erodibility group—5
Hazard of erosion: By water—slight; by wind—severe
Shrink-swell potential: Low
Corrosivity: To steel—high; to concrete—low
Potential frost action: Moderate

Contrasting Inclusions

Inclusion 1: Position on landscape—higher part of drainageways; distinctive present vegetation—singleleaf pinyon, Utah juniper, Wyoming big sagebrush
Inclusion 2: Position on landscape—higher side slopes of tops of fan remnants; distinctive present vegetation—singleleaf pinyon, Utah juniper, mountain big sagebrush
Inclusion 3: Position on landscape—lower part of fan piedmonts; distinctive present vegetation—shadscale, spiny menodora
Inclusion 4: Position on landscape—higher alluvial fans; distinctive present vegetation—singleleaf pinyon, Utah juniper, black sagebrush

Major Uses

Rangeland, wildlife habitat

Potential Native Plant Community (Table 300)

Elements of Wildlife Habitat

Suitability of Armespan soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Zadvar soil for named elements:

TABLE 300.--POTENTIAL PLANT COMMUNITY

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major components and inclusions						
		Component name			Inclusion number--			
		Armespan	Zadvar	Veet	1	2	3	4
Galleta	HIJA	5-20	5-20	5-25	---	---	5-10	---
Needlegrass	STIPA	5-15	5-15	5-15	5-10	2-5	---	5-15
Indian ricegrass	ORHY	5-10	5-10	5-15	1-5	---	5-20	2-5
Dropseed	SPORO	---	---	5-15	---	---	---	---
Bottlebrush squirreltail	SIHY	---	---	1-5	1-5	5-10	---	5-15
Bluegrass	POA++	---	---	---	10-20	10-20	---	10-20
Prairie junegrass	KOCR	---	---	---	5-10	5-10	---	---
Muttongrass	POFE	---	---	---	---	25-40	---	2-5
Needleandthread	STCO4	---	---	---	---	---	---	2-5
Other perennial grasses	PPGG	10-15	10-15	5-20	5-15	5-10	5-10	5-10
Native annual grasses	AAGG	1-5	1-5	1-5	1-3	---	1-5	---
Perennial forbs	PPFF	3-8	3-8	3-10	5-10	5-15	5-10	5-15
Native annual forbs	AAFF	2-5	2-5	2-5	1-5	1-3	2-5	1-3
Black sagebrush	ARARN	20-25	20-25	---	---	---	---	15-25
Bud sagebrush	ARSP5	5-10	5-10	5-10	---	---	5-10	---
Winterfat	EULA5	2-5	2-5	2-10	---	---	---	---
Nevada ephedra	EPNE	2-5	2-5	---	---	---	5-10	---
Wyoming big sagebrush	ARTRW*	---	---	15-20	10-20	---	---	---
Spiny hopsage	GRSP	---	---	5-10	---	---	---	---
Bitterbrush	PURSH	---	---	---	5-10	5-15	---	5-10
Serviceberry	AMELA	---	---	---	1-5	---	---	---
Curlleaf mountainmahogany	CELE3	---	---	---	1-5	2-5	---	---
Green ephedra	ERVI	---	---	---	2-5	---	---	---
Mountain big sagebrush	ARTRV	---	---	---	---	10-20	---	---
Snowberry	SYMPH	---	---	---	---	2-5	---	---
Douglas rabbitbrush	CHVI8	---	---	---	---	1-3	---	2-5
Spiny menodora	MESP2	---	---	---	---	---	10-30	---
Bailey greasewood	SAVEB	---	---	---	---	---	5-15	---
Shadscale	ATCO	---	---	---	---	---	5-15	---
Green ephedra	EPVI	---	---	---	---	---	---	2-5
Other shrubs	SSSS	10-20	10-20	10-20	10-20	5-15	10-20	5-10
Singleleaf pinyon	PIMO	---	---	---	2-5	2-5	---	5-10
Utah juniper	JUOS	---	---	---	1-4	1-3	---	5-10
Site symbol		O29X008N	O29X008N	O29X049N	O29X065N	O29X066N	O29X036N	O29X069N
Potential production (lb/acre):								
Favorable years		700	700	900	425	475	400	350
Normal years		400	400	600	350	375	300	275
Unfavorable years		200	200	300	200	200	100	150

Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair
Suitability of Veet soil for named elements:
Wild herbaceous plants (nonirrigated)—fair
Shrubs (nonirrigated)—fair

Ratings for Selected Uses

(Armespan Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—small stones, excess salt
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—slope, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Moderate—seepage, piping
(Zadvar Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cemented pan, cutbanks cave
Local roads and streets: Moderate—cemented pan, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage
(Veet Soil)
Suitability and limitations for the following uses:
Rangeland seeding: Poor—droughty, small stones
Shallow excavations: Severe—cutbanks cave
Local roads and streets: Moderate—flooding, frost action
Roadfill: Good
Sand: Probable source
Gravel: Probable source
Embankments, dikes, and levees: Severe—seepage

Interpretive Groups

Capability classification: Armespan soil—VIIs, nonirrigated; Zadvar soil—VIIs, nonirrigated; Veet soil—VIIs, nonirrigated
Site symbol: Armespan soil—029X008N; Zadvar soil—029X008N; Veet soil—029X049N

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil in the section "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

Limited availability of water for irrigation severely restricts the use of the soils in this survey area for crops and pasture. The soils in the Fish Lake Valley area are used for the production of alfalfa and small grain. Although other crops such as sugar beets are suited to the area, there is no nearby market for such crops. Improved pasture is also suited to the Fish Lake Valley area. Plants that are suitable for pasture include alta fescue, orchardgrass, smooth brome, and clover, especially alsike clover and white Dutch clover.

Management practices that are commonly needed in the survey area include conservation cropping systems, addition of nutrients, irrigation water management, and reclamation and management of saline-alkali soils. Many soils in the area have specific management needs; however, the following management practices have common applicability.

Conservation cropping systems.—Conservation cropping seeks to maintain acceptable levels of production while conserving and improving the soil. Elements of a good conservation cropping system include proper tillage, adequate fertilization, pest and weed control, and returning crop residue to the soil. The return of organic matter to the soil commonly is needed to maintain good soil tilth. Sources of organic matter are crop residue, manure, and crops grown in a cropping system. Crops grown in the survey area generally respond to applications of nitrogen and phosphorus, and crop production is enhanced through regular additions of organic matter and commercial fertilizer. A cropping system typical of the area is growing alfalfa for 8 to 10 years followed by small grain for 2 years, and then return to alfalfa that is seeded with a nurse crop of oats or other annual grain.

Irrigation water management.—The uniform distribution of irrigation water with minimal water runoff, ponding, or soil erosion is an important concern in the survey area. Irrigation water management begins with the system of water delivery to the farm. Water conveyances should furnish enough water to meet crop needs with as little loss from seepage and evaporation as possible. Once delivered to the farm, irrigated water is applied to the field as efficiently as possible. Irrigation water management requires knowledge of the available water capacity of the soil, the rooting depth of the crop, the infiltration rate of the soil, and how rapidly water is depleted by the growing crop and by evaporation. An understanding of these variables enables the manager to determine how much water is needed and how often it should be applied.

Reclamation and management of saline-alkali soils.—Some of the cultivated soils in the survey area need reclamation and management of salinity and sodicity to be productive. Treatment includes providing adequate drainage, incorporating soil amendments such as gypsum, and leaching.

Rangeland

About 95 percent of the survey area is rangeland, most of which is administered by the Bureau of Land Management. Cattle are the major livestock using the rangeland in this area. Cow-calf operations are most common. Many operations use the rangeland in this area for winter grazing; others graze year-round within the area. A few operations in the area supplement range forage with hay or with aftermath grazing of hayland or grain stubble.

The kind and amount of native vegetation that is produced in an area reflect the plant-soil-water relationships of the area. In rangeland areas of similar climate and topography, the plant community closely reflects the physical and chemical properties of the soil that supports it. Adjacent soils may support quite different plant communities because the soils contrast strongly in fertility or available water capacity or in other properties that affect plant growth. Because of this relationship of soils and native vegetation, it is important to consider soils in evaluation and management of rangeland.

Relationships between kinds of soil and the native plant communities they support were noted during the preparation of this soil survey. Each map unit description in this publication lists, for each soil component, the range site, total production in favorable, normal, and unfavorable years, and the common name and percent composition of the characteristic vegetation. Explanation of some of the terms used in the map unit description follows:

A *range site* is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other range sites in kind, amount, and proportion of range plants. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants.

Total production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruit of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, above-normal amounts or a favorable distribution of precipitation and air temperatures, or both, make growing conditions substantially better than average. In a normal year, growing conditions are well below average, generally because of low available soil moisture. All production data are expressed as air-dry weight in pounds per acre.

Potential vegetation—the grasses, forbs, and shrubs that make up most of the natural potential plant community on each soil—is listed by common name. Under *composition* the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kind of grazing animal, the season of use, and the accessibility to grazing animals.

The general soil map at the back of this publication identifies broad groups of related soils. These groups, or general soil map units, correspond to broad vegetative groups; therefore, some very general decisions concerning range management can be made according to the map units. The soils in each unit are described in the section "General Soil Map Units."

General soil map units 1, 4, and 6 are characterized by very little available water for plant growth, compounded in some places by high salinity. These units produce very sparse vegetation that commonly is limited in kinds of plants as well as in total production. These areas are the most fragile and difficult to manage in the survey area. The extreme droughtiness of the soils makes it difficult to restore damaged plants, particularly the grasses. Overgrazing tends to shift these plant communities retrogressively, eliminating perennial herbaceous species and encouraging an increase in drought tolerant shrubs. Once established, the shrubs use nearly all the soil water available for plant growth, reducing the opportunites for recovery by grasses. The low precipitation makes brush control and reseeding extremely difficult.

General soil map units 3 and 7 produce a more varied plant community than the above units, but it is still characterized by drought tolerant shrubs. Soils in this unit are limited by low water supplying capacity. The range sites are fairly low in total production. These areas are very difficult to reseed, and brush control is difficult because of the low precipitation in this area.

General soil map unit 2 is characterized by high salinity and a seasonal high water table that supplies some water for plant growth. Vegetation varies with the depth and duration of the high water table. Droughtier areas support black greasewood and other deep-rooted, salt tolerant shrubs. More moist areas are dominated by grasses and scattered shrubs. These areas are fairly high in total production. Reseeding is limited by high salinity and, in some areas, the susceptibility of the bare soil to wind erosion.

General soil map units 5 and 8 are at higher elevations and generally receive more precipitation. The water supply is adequate to support sagebrush and grass. These units constitute some of the more productive and resilient rangelands in the survey area. These areas generally are not well suited to rangeland seeding because of low available water capacity and rock fragments on the surface; however, the individual soils included in the units may be suited to seeding. Potential for rangeland seeding should be evaluated for

specific areas, using information from the detailed maps and map unit descriptions in this survey.

Brush control is more likely to prove successful in some areas of these units, particularly those in unit 5. Care should be taken to prevent unnecessary erosion of the bare soil after treatment. Loss of topsoil generally will be accompanied by a decline in soil fertility and available water capacity. Erosion losses as a result of brush control can be minimized by selecting areas of suitable slope, timing the operation so that the soil is bare for only a short time, and leaving strips of brush to act as windbreaks and to disrupt surface runoff. Brush manipulation should not be attempted unless there is a sufficient stand of desirable grasses to replace the shrub community.

General soil map unit 9 includes the wooded mountains and small areas that support sagebrush and grasses similar to those of general soil map units 5 and 8. The wooded areas commonly produce enough understory of sagebrush and grass to allow some grazing. In general, the steep slopes of this unit preclude mechanical management options. Most soils are limited for seeding by the low available water capacity and rock fragments on the surface; others are limited by erosion hazard or depth to bedrock.

Good rangeland management involves an understanding of the natural potential plant communities, the seral stages of these plant communities, and the soils in the management area. These factors help the manager to select management practices suitable to the area. The seral stage or condition class of a site is determined by comparing the present plant community and its production with that of the potential plant community. In general, the more nearly the present plant community approximates the potential community, the higher the condition or seral status. At times, a particular site condition class or seral stage of a site is capable of providing wildlife habitat, conserving soil and water, and providing more desirable forage than the potential plant community, and management can be directed toward maintenance of the lower site condition class.

The objective of most grazing management programs is to make optimum use of forage resources while maintaining or improving other resources. A proper level of grazing use plus occasional rest during critical growth periods are essential to efficient production and desirable changes in plant communites. Uniformity of grazing within management units should be encouraged by developing livestock watering facilities, fencing, or installing other practices where needed.

Sometimes it is desirable to accelerate range improvement by applying specific practices. Once again, soil factors should be considered. Various practices may prove too expensive or unworkable under certain soil conditions. Management practices such as brush control and rangeland seeding should be applied only when the soil and the climate are favorable for success. Suitability of the soils for rangeland seeding is given in each map unit description in the publication. These ratings are helpful in deciding when seeding is appropriate for specific areas in the survey area.

Woodland

About 5 percent of the survey area is wooded. The wooded areas are mostly in general soil map unit 9. The trees produced are dominantly singeleaf pinyon and Utah juniper. Because of the steepness of the terrain and the distance to populated areas, most of the wood products are used locally. The main wood products are firewood, fenceposts, and Christmas trees. Also, pine nuts are collected and marketed in some areas.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, hold snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Planting of windbreaks in this survey area is limited. Windbreaks may be desirable for protection of livestock and buildings; however, any windbreak planted in this area needs to be irrigated.

Species adapted to the specific soils should be selected. Species suited to deep, well drained soils include Fremont cottonwood (male), Siberian elm, Scotch pine, and cotoneaster. Cottonwood, Russian olive, golden willow, silver buffaloberry, and redosier dogwood are suited to wet soils. Species adapted to saline-alkali soils include Russian olive, silver buffaloberry, and fourwing saltbush. Species suited to shallow soils include Rocky Mountain juniper, common chokeberry, cotoneaster, and blue spruce.

Wildlife Habitat

The survey area provides a variety of habitat for wildlife that commonly is present in semiarid and arid regions of the west. Mule deer, cottontail rabbits, jackrabbits, golden eagles, hawks, chukar, coyotes, and bobcats are in the higher areas. Lower, drier areas

support kit fox, coyotes, snakes, kangaroo rats, and a number of lizard species. Perennial streams in Fish Lake Valley support brook trout and brown trout. Fish Lake supports bass and leopard frogs.

A number of areas in this survey area can be improved for use as wildlife habitat by increasing the supply of food and cover and by developing water sources. The soils that are best suited to improvement are included in general soil map units 2, 5, 8, and 9. They are described in the section "General Soil Map Units."

General soil map unit 2 is on alluvial flats, axial stream flood plains, and lake plains. Habitat on this unit can be improved by maintaining and improving the natural grasses on the meadows. Natural cover can also be improved or salt tolerant shrubs and trees can be introduced to provide hedges and shelter areas.

General soil map units 5 and 8 are on fan piedmonts and mountains, respectively. Vegetation is dominated by sagebrush and grass. Habitat on these units can be improved by development and improvement of water sources. Use of good range management practices generally improves the supply of food for wildlife on these units.

General soil map unit 9 is on mountains. Vegetation on this unit is mainly pinyon and juniper with a grazeable understory. Habitat can be enhanced by applying good range management practices.

The remaining general soil map units, units 1, 3, 4, 6, and 7, are limited for improvement of wildlife habitat because of the low rainfall and droughtiness of the soils. Development of water sources, where available, can improve the habitat for wildlife. Use of good range management helps to ensure an adequate supply of food and cover for wildlife that is adapted to these areas.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*15*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 305 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Aridisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Orthid (*Orth*, meaning true, plus *id*, from Aridisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Camborthids (*Camb*, meaning change, plus *orthid*, a suborder of Aridisols.

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Camborthids.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is sandy-skeletal, mixed, mesic Typic Camborthids.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Taxonomic Units and Their Morphology

In this section, each taxonomic unit recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each unit. A pedon, a small three-dimensional area of soil, that is typical of the unit in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual* (*14*). Many of the technical terms used in the descriptions are defined in *Soil Taxonomy* (*15*). Unless otherwise stated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the unit.

The map units of each taxonomic unit are described in the section "Detailed Soil Map Units."

Advokay Series

The Advokay series consists of very shallow, well drained soils that formed in residuum and colluvium derived from coarse grained tuff, rhyolite, and granite and related rocks. These soils are on mountain slopes, hills, and rock pediments. They have a surface pavement consisting of 50 percent pebbles that are mainly 2 to 20 millimeters in diameter. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Typic Haplargids.

Typical pedon: Advokay gravelly coarse sandy loam in a rangeland area of Advokay-Itme association, about 1,800 feet east and 400 feet north of the southwest corner of sec. 12, T. 2 N., R. 43 E.

A1—0 to 1 inch; pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine vesicular and interstitial pores; 25 percent pebbles; strongly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary. (0 to 2 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; strong very thick platy structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; many very fine and fine vesicular pores; 10 percent pebbles; few thin clay films in pores in the lower part of the horizon; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (1 to 4 inches thick)

Bt—3 to 7 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; common very fine and fine roots and few medium roots; many very fine tubular and interstitial pores; 25 percent pebbles; common thin clay films lining pores; common thin lime and silica pendants on pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary. (3 to 9 inches thick)

Cr—7 inches; weathered, very highly fractured tuffaceous rock; few very fine roots in fractures.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Thickness of the solum and depth to soft rock are 4 to 14 inches. The control section is 18 to 27 percent clay. It is 15 to 35 percent pebbles, mostly 2 to 5 millimeters in diameter. Reaction is mildly alkaline or moderately alkaline. The control section is slightly effervescent to violently effervescent.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4.

The Bt horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 3 or 4. Clay content is 20 to 35 percent. The horizon is 15 to 35 percent rock fragments, mostly 2 to 5 millimeters in diameter; individual layers range from 10 to 45 percent clay in some pedons. Lime and silica pendants are common on pebbles in most pedons.

Alcan Series

The Alcan series consists of very shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and hills. Slopes are 15 to 75 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids.

Typical pedon: Alcan very gravelly coarse sandy loam in a rangeland area of Alcan-Cucamungo association, about 3.5 miles north of Roosevelt Wells; about 400 feet east and 600 feet north of the southwest corner of sec. 17, T. 7 S., R. 40 E.

A—0 to 2 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; weak medium and fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few fine roots; many very fine and fine interstitial pores; 40 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary. (2 to 6 inches thick)

Bt1—2 to 8 inches; light yellowish brown (10YR 6/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, sticky and plastic; many fine and very fine roots and few medium roots; many very fine and fine pores and common medium tubular pores; 40 percent pebbles and 5 percent cobbles; many thick clay films on ped faces and lining pores; mildly alkaline (pH 7.6); clear wavy boundary. (4 to 8 inches thick)

Bt2—8 to 13 inches; brown (10YR 5/3) very gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many fine and very fine roots and few medium roots; common medium and fine interstitial pores and few medium and fine tubular pores; 45 percent pebbles and 5 percent cobbles; common thin and moderately thick clay films on ped faces and lining pores; mildly alkaline (pH 7.6); clear wavy boundary. (0 to 6 inches thick)

Cr—13 inches or more; highly fractured, weathered granitic bedrock.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. The control section is sandy clay loam or coarse sandy loam. Clay content is 18 to 24 percent. The control section is 35 to 55 percent rock fragments; more than 50 percent of the pebble-sized fragments are 2 to 5 millimeters in

diameter. Depth to weathered bedrock is 6 to 14 inches. Reaction is neutral or mildly alkaline.

The A horizon has value of 4 to 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3. Structure is platy or weak and subangular blocky.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Clay content is 18 to 25 percent. The horizon has subangular blocky structure or is massive.

Annaw Series

The Annaw series consists of very deep, well drained soils that formed in alluvium derived from extrusive igneous rock and minor amounts of sedimentary rock. These soils are on alluvial fans and fan piedmonts. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Camborthids.

Typical pedon: Annaw very gravelly loamy sand in a rangeland area of Annaw-Wardenot-Ardivey association, about 150 feet south and 1,500 feet west of the northeast corner of sec. 33, T. 4 N., R. 39 E.

A1—0 to 1 inch; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few fine and very fine roots; many fine and medium vesicular and interstitial pores; 35 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (1 to 3 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) very cobbly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many fine and very fine interstitial pores; 30 percent pebbles and 25 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 3 inches thick)

Bw—3 to 11 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many fine and very fine interstitial pores; 30 percent pebbles and 10 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (8 to 14 inches thick)

Bk—11 to 18 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; common very fine and fine interstitial pores; 40 percent pebbles and 15 percent cobbles; light silica cementation on undersides of rocks; strongly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary. (3 to 8 inches thick)

2C1—18 to 32 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial pores; 45 percent pebbles and 15 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (10 to 20 inches thick)

2C2—32 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine interstitial pores; 60 percent pebbles and 10 percent cobbles; weakly cemented; violently effervescent; moderately alkaline (pH 8.2).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods during winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeters fraction) averages sand, loamy sand, or loamy fine sand. Rock fragment content averages 35 to 60 percent rock fragments, mostly pebbles. Reaction is moderately alkaline or strongly alkaline. The control section is slightly effervescent to violently effervescent. A buried B horizon is not present below a depth of 40 inches in some pedons.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3.

The Bw horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is sandy loam or fine sandy loam. The horizon is 10 to 40 percent pebbles and 0 to 10 percent cobbles. Few thin clay films are in pores at the top of the horizon in some pedons.

The 2C horizon has value or 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loamy sand, sand, loamy fine sand, or loamy coarse sand. Some pedons have thin strata of sandy loam. The horizon has weak and subangular blocky structure or is massive. The horizon is 35 to 65 percent pebbles and 0 to 15 percent cobbles. Some horizons are stratified. Strata of gravelly material are included in some pedons. Lime occurs as pendants on pebbles and is disseminated in most pedons. Lime-coated pebbles are present in some horizons of some pedons.

Aquic Calciorthids

Aquic Calciorthids consist of very deep, very poorly drained soils that formed in mixed alluvium. These soils are on lake plains. Slopes are 0 to 2 percent. The mean

annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Reference pedon: Aquic Calciorthids silty clay loam in a rangeland area of Settlement-Aquic Calciorthids complex, about 1,000 feet east and 800 feet north of the southwest corner of sec. 16, T. 1 S., R. 36 E.

A1—0 to 5 inches; white (10YR 8/1) silty clay loam, light brownish gray (2.5Y 6/2) moist; strong fine and medium granular structure; hard, firm, slightly sticky and slightly plastic; many very fine and fine roots; common fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (3 to 6 inches thick)

A2—5 to 11 inches; white (10YR 8/1) clay loam, light brownish gray (2.5Y 6/2) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine, fine, and medium roots; few fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (4 to 7 inches thick)

C1—11 to 19 inches; white (10YR 8/1) loam, pale brown (10YR 6/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; few fine tubular pores; violently effervescent; 15 percent soft powdery lime; moderately alkaline (pH 8.4); clear smooth boundary. (3 to 10 inches thick)

C2—19 to 27 inches; white (10YR 8/1) clay loam, light gray (10YR 7/2) moist; massive; very hard, firm, sticky and plastic; common fine and medium roots; few fine tubular pores; violently effervescent; 20 percent soft powdery lime; strongly alkaline (pH 8.6); clear smooth boundary. (7 to 15 inches thick)

C3—27 to 41 inches; white (10YR 8/1) clay loam, light gray (10YR 7/2) moist; massive; very hard, firm, sticky and plastic; common fine and medium roots; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (10 to 20 inches thick)

Cqk—41 to 60 inches; white (10YR 8/1) clay loam, light gray (10YR 7/2) moist; massive; hard, firm, slightly sticky and slightly plastic; violently effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The water table usually is at the surface to a depth of 0 to 10 inches below the surface, but it fluctuates to a depth of 60 inches. Soil temperature is 53 to 56 degrees F. Depth to the calcic horizon is 10 to 30 inches. The control section (less than 2 millimeter fraction) is stratified loam to clay. Clay content averages 27 to 45 percent. Reaction is moderately alkaline to very strongly alkaline. The control section is strongly effervescent or violently effervescent.

Ardivey Series

The Ardivey series consists of very deep, well drained soils that formed in alluvium derived from mixed sources. These soils are on fan piedmonts. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Duric Haplargids.

Typical pedon: Ardivey very gravelly sandy loam in a rangeland area of Annaw-Wardenot-Ardivey association, about 2,400 feet east and 1,000 feet south of the northwest corner of sec. 3, T. 5 N., R. 37 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; many very fine and fine vesicular pores; 35 percent pebbles; moderately alkaline (pH 8.3); abrupt smooth boundary. (1 to 3 inches thick)

A2—2 to 4 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; many very fine, fine, and medium vesicular pores; 35 percent pebbles; moderately alkaline (pH 8.3); clear smooth boundary. (1 to 3 inches thick)

Bt—4 to 10 inches; light yellowish brown (10YR 6/4) very gravelly loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to moderate subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 45 percent pebbles and 5 percent cobbles; common moderately thick clay films on ped faces and lining pores; moderately alkaline (pH 8.3); clear smooth boundary. (6 to 13 inches thick)

Btqk—10 to 14 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 50 percent pebbles and 5 percent cobbles; lime and silica coatings on undersides of pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (4 to 8 inches thick)

2Bqk1—14 to 17 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 45 percent pebbles, 15 percent cobbles, and 2 percent stones; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (2 to 6 inches thick)

2Bqk2—17 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, dark brown (10YR

4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine interstitial pores; 50 percent pebbles, 10 percent cobbles, and 2 percent stones; discontinuous weakly cemented layers with 35 percent durinodes; violently effervescent; strongly alkaline (pH 9.0).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July to October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is sandy clay loam, clay loam, or loam. Clay content is 18 to 35 percent. The control section is 45 to 60 percent rock fragments.

The A horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 3 or 4 when moist, and chroma of 2 or 3. Reaction is moderately alkaline or strongly alkaline. Structure is platy or subangular blocky. The horizon is noneffervescent or slightly effervescent.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 to 4. Reaction is neutral to moderately alkaline. Structure is weak or moderate and prismatic or subangular blocky or it is thin or very thin and platy. The horizon commonly is noneffervescent or slightly effervescent, but in some areas it is strongly effervescent in the lower part. The Btk horizon is massive or subangular blocky. The 2Bqk horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 or 3. The horizon is 50 to 70 percent pebbles, 5 to 30 percent cobbles, and 0 to 10 percent stones. Silica cementation ranges from coatings and pendants on undersides of pebbles to weakly cemented lenticular layers. Reaction is moderately alkaline to very strongly alkaline.

Arizo Series

The Arizo series consists of very deep, excessively drained soils that formed in mixed alluvium. These soils are on alluvial fans, fan piedmonts, fan skirts, and alluvial flats. Slopes are 0 to 8 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 57 degrees F.

Taxonomic class: Sandy-skeletal, mixed, thermic Typic Torriorthents.

Typical pedon: Arizo very gravelly loamy sand in a rangeland area of Yermo-Arizo association, about 1,300 feet south and 1,500 feet west of the apparent northeast corner of sec. 30, T. 8 S., R. 43 E.

A—0 to 6 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine vesicular pores and common very fine interstitial pores; 50 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (4 to 7 inches thick)

C1—6 to 12 inches; very pale brown (10YR 7/3) very gravelly sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 50 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (5 to 30 inches thick)

C2—12 to 60 inches; very pale brown (10YR 7/3) extremely gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 65 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 59 to 61 degrees F. Hue is 10YR or 7.5YR, value is 5 to 8 when dry and 4 to 6 when moist, and chroma is 2 to 6. The control section (less than 2 millimeter fraction) averages coarse sand to loamy sand. It is 35 to 85 percent rock fragments, mostly pebbles. Reaction is mildly alkaline to strongly alkaline. The control section is slightly effervescent or strongly effervescent and has thin lime coatings on undersides of rock fragments in some pedons.

The C horizon is single grain or massive.

Armespan Series

The Armespan series consists of very deep, well drained soils that formed in alluvium derived from various kinds of rock. These soils are on fan piedmonts. About 40 percent of the surface is covered with pebbles. Slopes are 4 to 15 percent. The mean annual precipitation is about 8 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Durixerollic Calciorthids.

Typical pedon: Armespan very gravelly sandy loam in a rangeland area of Armespan-Zadvar-Veet association, about 1,000 feet south and 1,100 feet east of the northwest corner of sec. 3, T. 6 S., R. 40 E.

A—0 to 3 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure parting to moderate medium subangular blocky; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and tubular pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; moderately

alkaline (pH 8.2); abrupt smooth boundary. (2 to 7 inches thick)

Bw—3 to 9 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; many coarse, medium, and fine roots; many very fine and fine interstitial and tubular pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (0 to 6 inches thick)

Bk—9 to 15 inches; light brownish gray (10YR 6/2) gravelly loam, brown (10YR 5/3) moist; weak medium or fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common coarse roots and many medium and fine roots; many very fine and fine interstitial and tubular pores; 25 percent pebbles and 5 percent cobbles; visible soft powdery lime; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (6 to 16 inches thick)

Bkq—15 to 30 inches; white (10YR 8/2) very gravelly sandy loam, very pale brown (10YR 7/3) moist; massive; soft, very friable, nonsticky and nonplastic; few medium and fine roots; common very fine interstitial pores; 45 percent pebbles and 5 percent cobbles; strongly silica- and lime-cemented plates and pendants on undersides of rock fragments; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (10 to 25 inches thick)

C—30 to 60 inches; light gray (10YR 7/2) very gravelly loamy sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few medium and fine roots; 45 percent pebbles and 5 percent cobbles; lenses of lime- and silica-cemented material and some lime pendants; violently effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile is moist in winter and spring and is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages sandy loam, loam, or coarse sandy loam. Clay content is 10 to 18 percent. The control section is 35 to 50 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. The control section is strongly effervescent or violently effervescent throughout. Depth to the Bk horizon is 5 to 10 inches. Thickness of the calcic horizon is 15 to 35 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3.

The Bw horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Texture (less than 2 millimeter fraction) is sandy loam or loam.

The Bk horizon has value of 6 to 8 when dry and 5 to 7 when moist, and it has chroma of 2 or 3 when dry or moist. Texture (less than 2 millimeter fraction) is sandy loam or loam. Clay content is 12 to 18 percent rock fragments. The horizon is 15 to 35 percent rock fragments, dominantly pebbles. The horizon is massive or has weak and platy or subangular blocky structure. Soft powdery lime is throughout the horizon. Calcium carbonate equivalent is 10 to 35 percent rock fragments.

The Bkq horizon has value of 7 or 8 when dry and 6 or 7 when moist, and it has chroma of 2 or 3 when dry or moist. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. Clay content is 10 to 18 percent. The profile is 35 to 50 percent rock fragments, mainly pebbles. Calcium carbonate equivalent is 10 to 35 percent. From 20 to 50 percent weak to strong, discontinuous silica-lime cementation in the form of plates and pendants is on undersides of rock fragments.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3 when dry or moist. Texture (less than 2 millimeter fraction) is loamy sand or loamy coarse sand. Clay content is 5 to 10 percent. The horizon is 35 to 65 percent rock fragments, dominantly pebbles. Lime pendants are on undersides of rock fragments.

Armespan Variant

The Armespan Variant consists of shallow, well drained soils that formed in alluvium derived from various kinds of rock. These soils are on fan piedmonts and alluvial fans. Slopes are 4 to 15 percent. The mean annual precipitation is about 14 inches, and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Durixerolls.

Typical pedon: Armespan Variant gravelly fine sandy loam in a woodland area of Armespan Variant-Handpah-Ubehebe association, about 750 feet north and 1,400 feet west of the southeast corner of sec. 8, T. 6 S., R. 40 E.

A—0 to 3 inches; grayish brown (10YR 5/2) gravelly fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure parting to moderate medium and fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; many very fine roots and common medium and fine roots; common medium and fine tubular pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (3 to 6 inches thick)

Bt1—3 to 8 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many

medium and fine roots; many medium and fine tubular and interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (4 to 10 inches thick)

Bt2—8 to 16 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many coarse, medium, and fine roots; many medium and fine tubular and interstitial pores; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (0 to 8 inches thick)

Bqkm—16 to 28 inches; white (10YR 8/2) indurated duripan; massive; hard to brittle; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (12 to 18 inches thick)

C—28 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is moist in winter and spring and early in summer; it usually is dry late in summer and in fall, but it is moist intermittently because of convection storms. It is dry in all parts for at least 45 consecutive days following the summer solstice. Soil temperature is 48 to 53 degrees F. The control section (less than 2 millimeter fraction) is loam, fine sandy loam, or sandy clay loam. Clay content is 15 to 25 percent. Rock fragment content is 35 to 55 percent. Reaction is moderately alkaline or strongly alkaline. The control section is strongly effervescent or violently effervescent throughout. Depth to the duripan is 14 to 20 inches. More than half of the upper boundary of the pan is indurated. The mollic epipedon is 8 to 16 inches thick.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3.

The Bqkm horizon is 6 to 18 inches thick.

The Bqk horizon is moderately alkaline or strongly alkaline. Texture (less than 2 millimeter fraction) is stratified sandy loam or loamy sand. The horizon is 35 to 55 percent rock fragments, mainly pebbles.

Armoine Series

The Armoine series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and hills. About 55 percent of the surface is covered with pebbles. Slopes are 8 to 50 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids.

Typical pedon: Armoine very gravelly sandy loam in a rangeland area of Armoine-Tulecan association, about 400 feet east and 2,600 feet north of the southwest corner of sec. 34, T. 4 S., R. 38 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 4/3) moist; weak thick platy structure parting to moderate medium and fine subangular blocky; soft, very friable, slightly sticky and nonplastic; few fine roots; many medium interstitial pores; 35 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 4 inches thick)

A2—2 to 5 inches; brown (10YR 5/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common medium and many fine roots; common fine tubular pores; 30 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary. (3 to 5 inches thick)

Bt—5 to 12 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, sticky and nonplastic; many very fine and fine roots and common medium roots; many fine tubular pores; 40 percent pebbles; few thin clay films on ped faces and lining pores; moderately alkaline (pH 8.2); clear wavy boundary. (5 to 10 inches thick)

Bk—12 to 15 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common fine tubular pores; 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (0 to 4 inches thick)

Cr—15 inches; highly weathered granitic bedrock.

Range in characteristics

The profile is moist in winter and spring and is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to paralithic contact is 14 to 20 inches. The control section is 18 to 25 percent clay. It is 35 to 55 percent rock fragments, including 5 percent cobbles and stones; more than 50 percent of the pebble-sized fragments are 2 to 5 millimeters in diameter.

The A horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. Reaction is mildly alkaline or moderately alkaline. The horizon is noneffervescent or slightly effervescent.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is sandy clay loam or sandy loam. The profile is 35 to 55 percent rock fragments,

mostly pebbles. Reaction is mildly alkaline to strongly alkaline. The horizon is dominantly noneffervescent, but in some pedons it is slightly effervescent in the lower part.

The Bk horizon is moderately alkaline or strongly alkaline. It is strongly effervescent or violently effervescent.

Beano Series

The Beano series consists of shallow, well drained soils that formed in alluvium derived from various kinds of rock. These soils are on fan piedmonts and alluvial fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Haplic Durargids.

Typical pedon: Beano very gravelly sandy loam in a rangeland area of Beano-Wardenot association, about 900 feet west and 2,200 north of the southeast corner of sec. 4, T. 5 S., R. 38 E.

A1—0 to 1 inch; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, friable, slightly sticky and nonplastic; many coarse, medium, and fine vesicular pores; 40 percent pebbles; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 4 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure parting to moderate fine to medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few very fine interstitial pores; 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (2 to 6 inches thick)

Bt1—3 to 7 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common fine roots; common very fine and fine tubular pores; common thin and moderately thick clay films on ped faces and lining pores; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (3 to 5 inches thick)

Bt2—7 to 11 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common medium roots and many fine and very fine roots; common very fine and fine tubular pores; few thin clay films lining pores; 50 percent pebbles; silica-lime pendants on the bottom of pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (3 to 5 inches thick)

Bqk—11 to 15 inches; yellowish brown (10YR 5/4) extremely gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common medium roots and many fine and very fine roots; many fine and very fine interstitial pores; 65 percent pebbles; silica-lime pendants on the bottom of pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (0 to 6 inches thick)

Bqkm—15 to 28 inches; pale brown (10YR 6/3) strongly cemented duripan, white (10YR 8/1) moist; massive; hard, very firm, nonsticky and nonplastic; 50 percent pebbles and 5 percent cobbles; clear wavy boundary. (10 to 20 inches thick)

2Bk—28 to 60 inches; pale brown (10YR 6/3) stratified extremely gravelly sand to extremely gravelly loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine interstitial pores; 55 percent pebbles and 10 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); abrupt irregular boundary.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods during winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. Depth to the duripan is 15 to 20 inches. The control section (less than 2 millimeter fraction) is loam or clay loam. Clay content is 18 to 35 percent. Content of rock fragments, dominantly pebbles, is 35 to 60 percent.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Reaction is moderately alkaline or strongly alkaline. The horizon is noneffervescent or slightly effervescent.

The Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 3 or 4. Texture (less than 2 millimeter fraction) is heavy loam, sandy clay loam, or clay loam. Clay content is 25 to 35 percent. Content of rock fragments, dominantly pebbles more than 5 millimeters in diameter, is 35 to 60 percent. Structure is strong or moderate and subangular blocky. Reaction is moderately alkaline to very strongly alkaline. The horizon is slightly effervescent to violently effervescent. Lime coats the bottom of coarse fragments in the lower part of the horizon.

The Bqkm horizon has value of 6 to 8, and it has chroma of 1 to 3. It is 35 to 60 percent rock fragments, dominantly pebbles. It has a strongly cemented duripan with alternating strata of weakly cemented or noncemented material; few discontinuous laminar caps bridge coarse fragments in some pedons. The horizon is 10 to 20 inches thick.

The 2Bk horizon has value of 6 or 7 when dry and 5 or 6 when moist, and it has chroma of 2 or 3. Texture (less than 2 millimeter fraction) is coarse sand, sand,

loamy sand, or sandy loam that typically is stratified or occurs as lenses. The horizon is 60 to 75 percent rock fragments, dominantly pebbles. Reaction is strongly alkaline or very strongly alkaline.

Beelem Series

The Beelem series consists of very shallow, well drained soils that formed in residuum and colluvium derived from welded tuff. These soils are on mountain slopes and hills. About 5 percent of the surface is covered with cobbles and 40 percent with pebbles. Slopes are 30 to 75 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic Lithic Xeric Torriorthents.

Typical pedon: Beelem very gravelly sandy loam in a woodland area of Gabbvally-Beelem-Rock outcrop association, about 100 feet north and 1,000 feet west of the southeast corner of sec. 18, R. 34 E., T. 1 N.

A1—0 to 1 inch; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 3 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; many very fine and fine interstitial pores; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (2 to 6 inches thick)

R—3 inches; rhyolitic tuff that is weathered in the upper 1 inch.

Range in characteristics

The profile usually is moist in winter and spring and dry in summer and fall, but it is moist for 10 to 20 days cumulatively from July to October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section is 10 to 18 percent clay. Content of rock fragments, dominantly pebbles 2 to 5 millimeters in diameter, is 15 to 35 percent. Depth to bedrock is 3 to 9 inches. Reaction is mildly alkaline or moderately alkaline. The control section is slightly effervescent to violently effervescent throughout.

The A horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2 to 4 when dry or moist. Color variations are a result of lithochromic influence.

Belcher Series

The Belcher series consists of shallow and very shallow, well drained soils that formed in mixed alluvium and lacustrine sediment. These soils are on alluvial flats, fan piedmonts, and fan skirts. Slopes are 0 to 4 percent. The mean annual temperature is about 53 degrees F, and the mean annual precipitation is about 5 inches.

Taxonomic class: Loamy, mixed, mesic, shallow Entic Durorthids.

Typical pedon: Belcher gravelly sand in a rangeland area of Belcher-Playas-Yomba association, about 1,500 feet north and 1,000 feet east of the southwest corner of sec. 26, T. 4 N., R. 40 E.

A—0 to 3 inches; light gray (10YR 7/2) gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots and few fine and coarse roots; many very fine interstitial pores; 25 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary. (1 to 3 inches thick)

C—3 to 10 inches; light gray (10YR 7/2) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine roots and few fine and coarse roots; many very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (3 to 12 inches thick)

2Bqkm—10 to 18 inches; white (10YR 8/2) lake sediment, pale brown (10YR 6/3) moist; strongly cemented continuous silica laminae; massive; very hard, firm, nonsticky and nonplastic; common very fine roots and few fine and coarse roots; common very fine and few fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary. (5 to 15 inches thick)

2Cr—18 to 60 inches; white (10YR 8/2) consolidated lake sediment, pale brown (10YR 6/3) moist; massive; very hard, firm, nonsticky and nonplastic; strongly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods during winter and early in spring and for 10 to 20 days cumulatively from July to October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the duripan is 5 to 18 inches. Depth to paralithic contact is 10 to 20 inches. The control section averages fine sandy loam or loam. Clay content averages 5 to 16 percent. Rock fragment content averages less than 15 percent. The control section is slightly effervescent to violently effervescent.

The A horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2 or 3. The horizon is single grain, subangular blocky, or platy. Reaction is mildly alkaline to strongly alkaline.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. It has platy structure or is massive. Clay content is 8 to 18 percent. Texture is fine sandy loam or sandy loam. Reaction is moderately alkaline to very strongly alkaline.

Bellehelen Series

The Bellehelen series consists of very shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on hills and mountain slopes. Slopes are 15 to 75 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Argixerolls.

Typical pedon: Bellehelen very stony loam in a woodland area of Bellehelen-Brier-Stewval association, about 2,000 feet north and 900 feet east of the southwest corner of sec. 1, T. 3 S., R. 41 E.

A1—0 to 3 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and common fine roots; many very fine and fine interstitial pores; 30 percent pebbles, 10 percent cobbles, and 3 percent stones; neutral (pH 7.2); clear smooth boundary. (2 to 5 inches thick)

A2—3 to 5 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and tubular pores; 50 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary. (0 to 5 inches thick)

Bt—5 to 13 inches; brown (10YR 5/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; many very fine tubular pores; 50 percent pebbles and 5 percent cobbles; few thin clay films on ped faces and lining pores; mildly alkaline (pH 7.4); clear irregular boundary. (5 to 10 inches thick)

R—13 inches; hard, fractured tuff.

Range in characteristics

The profile is moist in winter and spring and is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 47 to 53 degrees F. Depth to bedrock is 7 to 14 inches. The mollic horizon is 7 to 14 inches thick, and in some pedons it is mixed. The control section averages loam, sandy clay loam, or clay loam. It averages 18 to 35 percent clay. It is 35 to 60 percent rock fragments. Reaction is neutral or mildly alkaline.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is loam, sandy clay loam, or clay loam; in some pedons there are layers that are more than 35 percent clay.

Belted Series

The Belted series consists of very shallow, well drained soils that formed in mixed alluvium. Belted soils are on fan piedmonts and fan skirts. Slopes are 0 to 30 percent. The mean annual temperature is about 53 degrees F. and mean annual precipitation is about 6 inches.

Taxonomic class: Loamy, mixed, mesic, shallow Haplic Durargids.

Typical pedon: Belted gravelly loamy sand, in a rangeland area of Unsel-Belted-Orphant association, about 1,500 feet north and 1,700 feet east of the southwest corner of sec. 17, T. 3 N., R. 42 E.

A1—0 to 2 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; moderate medium and thick platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many fine and very fine vesicular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 3 inches thick)

A2—2 to 6 inches; light brownish gray (10YR 6/2) gravelly sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (1 to 5 inches thick)

Bt—6 to 10 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, common fine, and few coarse roots; many very fine and fine interstitial pores; common thin clay films on peds and in pores; 10 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (4 to 12 inches thick)

Btk—10 to 13 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate very fine, fine, and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and fine interstitial pores; few thin clay films on peds and in pores; strongly

effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (0 to 4 inches thick)

Bqkm—13 to 25 inches; very pale brown (10YR 8/3) strongly cemented duripan, light yellowish brown (10YR 6/4) moist; massive; extremely hard, very firm, nonsticky and nonplastic; few very fine roots; 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (4 to 12 inches thick)

2C1—25 to 49 inches; very pale brown (10YR 7/4) extremely gravelly sand, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common medium and coarse and many very fine and fine interstitial pores; 70 percent pebbles; slightly effervescent; strongly alkaline (pH 9.0); clear wavy boundary. (20 to 40 inches thick)

2C2—49 to 60 inches; very pale brown (10YR 7/3) extremely gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; common very fine and fine pores; 60 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.2)

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the duripan is 6 to 14 inches. Clay content of the control section averages 15 to 28 percent. Rock fragment content averages 0 to 25 percent. Reaction is moderately alkaline to very strongly alkaline.

The A horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon has platy or subangular blocky structure or is massive parting to granular. The horizon is slightly effervescent or strongly effervescent.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. The horizon has subangular blocky or platy structure or is massive parting to granular. Texture (less than 2 millimeter fraction) is sandy clay loam, sandy loam, loam, or light clay loam. Clay content is 18 to 30 percent. The horizon is 0 to 30 percent rock fragments. It is slightly effervescent or strongly effervescent. The Bqkm horizon is platy or massive, strongly cemented, continuous laminae that are rarely more than 0.5 inch thick.

The C1 horizon (less than 2 millimeter fraction) is sandy loam or fine sandy loam. The horizon is 0 to 35 percent rock fragments. The 2C horizon is lake sediment of variable texture. Hue is 10YR or 7.5YR, value is 6 or 7 when dry and 4 or 5 when moist, and chroma is 2 to 4 when dry or moist. Depth to the 2C horizon is 24 to 61 inches. The horizon is noneffervescent to violently effervescent.

Blacktop Series

The Blacktop series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on mountains, hills, mesas, and rock pediments. Slopes are 8 to 75 percent. The mean annual precipitation is about 6 inches, and the mean annual air temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents.

Typical pedon: Blacktop very gravelly sandy loam in a rangeland area of Blacktop-Rock outcrop association, about 2,000 feet east and 600 feet north of the southwest corner of sec. 1, T. 4 S., R. 40 E.

A1—0 to 1 inch; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; many fine and very fine interstitial pores; 50 percent pebbles and 5 percent cobbles; slightly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary. (1 to 5 inches thick)

A2—1 to 4 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; moderate medium and fine subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common fine and very fine roots; many fine and very fine interstitial pores; 40 percent pebbles and 5 percent cobbles; strongly effervescent; mildly alkaline (pH 7.8); abrupt irregular boundary. (1 to 5 inches thick)

R—4 inches; highly fractured tuffaceous bedrock.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to bedrock is 4 to 10 inches. The control section (less than 2 millimeter fraction) averages sandy loam or fine sandy loam. Rock fragment content is 35 to 70 percent. Reaction is mildly alkaline or moderately alkaline. The control section is slightly effervescent or strongly effervescent. Chroma is 2 or 3.

Blappert Series

The Blappert series consists of very shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Haplargids.

Typical pedon: Blappert very gravelly sandy loam in a rangeland area of Blappert-Pumel association, about 450 feet east and 500 feet south of the northwest corner of sec. 18, T. 7 S., R. 41 E., about 1.5 miles northwest of Black Mountain.

A—0 to 3 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; weak thick platy structure parting to moderate medium subangular blocky; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores and common fine and very fine interstitial pores; 30 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.2); clear smooth boundary. (1 to 5 inches thick)

Bt1—3 to 7 inches; light yellowish brown (10YR 6/4) very gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; few medium roots and common very fine and fine roots; common fine tubular pores and few fine interstitial pores; common thin clay films on peds and in pores; 35 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (4 to 8 inches thick)

Bt2—7 to 12 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; common fine tubular pores and few fine interstitial pores; few thin clay films on peds and in pores; 35 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); clear irregular boundary. (0 to 9 inches thick)

Cr—12 inches; decomposed and highly fractured granitic bedrock.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. Depth to paralithic contact is 6 to 14 inches. Clay content of the control section is 18 to 27 percent. The control section is 35 to 55 percent rock fragments, more than 50 percent of which are pebble-sized fragments 2 to 5 millimeters in diameter. The sand fraction is mainly coarse and very coarse sand.

The A horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. Reaction is moderately alkaline or strongly alkaline. The horizon is noneffervescent or slightly effervescent.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is sandy clay loam or coarse sandy loam. The horizon is 35 to 60 percent rock fragments. Reaction is mildly alkaline or moderately alkaline. The horizon is noneffervescent or slightly effervescent.

Breko Series

The Breko series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on fan remnants and alluvial fans. Slopes are 4 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Xerollic Haplargids.

Typical pedon: Breko gravelly sandy loam in a rangeland area of Handpah-Breko-Veet association, about 600 feet north and 850 feet east of the southwest corner of sec. 7, T. 6 S., R. 41 E.

A1—0 to 3 inches; brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium and many fine roots; common very fine and fine interstitial pores; 25 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 4 inches thick)

A2—3 to 6 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; common very fine and fine interstitial pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (2 to 5 inches thick)

Bt1—6 to 13 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; many medium, fine, and very fine roots; common fine tubular pores; 35 percent pebbles; common thin and moderately thick clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (4 to 8 inches thick)

Bt2—13 to 24 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium and fine subangular blocky structure; slightly hard, very friable, sticky and plastic; few very fine roots and many medium and fine roots; common fine and many very fine tubular pores; 40 percent pebbles; common thin and moderately thick clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (3 to 12 inches thick)

Bk—24 to 43 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots and many medium and fine roots; few very fine and fine interstitial pores; 65 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (11 to 20 inches thick)

Bqk—43 to 48 inches; very pale brown (10YR 7/3) extremely gravelly loamy sand, pale brown (10YR 6/3) moist; massive; very hard, very firm; nonsticky and nonplastic; few very fine and common medium and fine roots; few very fine tubular and interstitial pores; weak continuous cementation; 70 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (0 to 5 inches thick)

B'k—48 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots and common medium and fine roots; few very fine interstitial pores; 65 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile is moist in winter and spring and is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 55 to 59 degrees F. Clay content of the control section is 25 to 35 percent. Content of rock fragments, mainly pebbles, is 35 to 60 percent.

The A horizon has value of 5 to 7 when dry and 4 to 6 when moist, and it has chroma of 2 or 3 when dry or moist. Structure is platy, granular, or subangular blocky. The horizon is noneffervescent or slightly effervescent.

The Bt horizon has hue of 7.5YR or 5YR, value of 5 to 7 when dry and 4 to 6 when moist, and chroma of 2 or 4 when dry or moist. Texture (less than 2 millimeter fraction) is clay loam, heavy loam, or sandy clay loam. Clay content is 25 to 35 percent. Content of rock fragments, mostly pebbles, averages 35 to 60 percent, but some layers are as much as 70 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. The horizon is slightly effervescent or strongly effervescent.

The Bk horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. Clay content is 5 to 8 percent. The horizon is 55 to 75 percent rock fragments. It is massive or single grain. Reaction is moderately alkaline or strongly alkaline. The horizon is strongly effervescent or violently effervescent.

The Bqk horizon, where present, has value of 7 or 8 when dry and 6 or 7 when moist, and it has chroma of 1 to 3 when dry or moist. Texture (less than 2 millimeter fraction) is coarse sandy loam or loamy sand. Content of rock fragments, mostly pebbles, is 60 to 75 percent. Reaction is strongly alkaline or very strongly alkaline. The horizon has weak, continuous silica cementation of 30 to 50 percent durinodes in a friable matrix.

The B'k horizon, where present, has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 or 3 when dry or moist. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. The horizon is 65 to 80 percent rock fragments, mostly pebbles. The horizon is strongly effervescent or violently effervescent.

Brier Series

The Brier series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on mountain slopes and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Argixerolls.

Typical pedon: Brier very stony loam in a woodland area of Ravenswood-Wahguyhe-Brier association, about 800 feet north and 800 feet west of the southeast corner of sec. 29, T. 1 S., R. 34 E.

A—0 to 3 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine vesicular pores; 20 percent pebbles, 20 percent cobbles, and 2 percent stones; neutral (pH 7.2); clear smooth boundary. (3 to 7 inches thick)

Bt1—3 to 8 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 15 percent pebbles and 20 percent cobbles; few thin clay films on ped faces and lining pores; neutral (pH 7.2); clear smooth boundary. (4 to 8 inches thick)

Bt2—8 to 15 inches; light yellowish brown (10YR 6/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and medium roots; common fine tubular pores; 25 percent pebbles and 30 percent cobbles; common thin clay films on ped faces, lining pores, and coating rock fragments; neutral (pH 7.2); abrupt wavy boundary. (4 to 8 inches thick)

R—15 inches; hard, fractured volcanic bedrock.

Range in characteristics

The profile is moist in winter and spring and is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 49 to 53 degrees F. Thickness of the mollic epipedon is 7 to 12 inches. Depth to bedrock is 14 to 20 inches. Clay content of the control section averages 18 to 35 percent. The control section is 35 to 60 percent rock fragments, mostly cobbles. Reaction is neutral or mildly alkaline.

The A horizon, where mixed to a depth of 7 inches, has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3 when moist or dry.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4 when moist or dry. Texture (less than 2 millimeter fraction) averages loam, clay loam, or sandy clay loam. Some layers are more than 35 percent clay.

Candelaria Series

The Candelaria series consists of very deep, well drained soils that formed in alluvium derived from various kinds of rock. These soils are on fan piedmonts. About 10 percent of the surface is covered with cobbles and 65 percent with pebbles. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Calciorthids.

Typical pedon: Candelaria very gravelly fine sandy loam in a rangeland area of Candelaria-Izo association, about 200 feet north and 800 feet east of the southwest corner of sec. 17, T. 4 N., R. 36 E.

A1—0 to 1 inch; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; many fine and medium vesicular pores; 40 percent pebbles and 5 percent cobbles; strongly alkaline (pH 8.8); abrupt smooth boundary. (0 to 2 inches thick)

A2—1 to 5 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine and medium vesicular pores; 20 percent pebbles; slightly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary. (1 to 4 inches thick)

Bk—5 to 11 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine tubular pores; 25 percent pebbles and 5 percent cobbles; lime pendants on rock fragments; strongly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary. (0 to 7 inches thick)

2Bkq—11 to 22 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; massive; hard, firm, nonsticky and nonplastic; few fine roots; few fine tubular pores; 50 percent pebbles; 45 percent strong to weak discontinuous silica-lime cemented plates; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary. (6 to 20 inches thick)

2B'k—22 to 37 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; single grain; loose; nonsticky and nonplastic; many very fine and fine interstitial pores; 60 percent pebbles and 5 percent cobbles; 15 percent weakly cemented plates; strongly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary. (10 to 22 inches thick)

2C—37 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; single grain; loose; nonsticky and nonplastic; many very fine and fine interstitial pores; 55 percent pebbles and 5 percent cobbles; strongly effervescent; very strongly alkaline (pH 9.2).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods during winter and spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is sand, loamy sand, loamy coarse sand, or, in the upper part of some pedons, sandy loam. Clay content averages 4 to 10 percent. The control section averages 50 to 70 percent rock fragments, dominantly pebbles; in some pedons some strata average 40 to 80 percent rock fragments. Reaction is strongly alkaline or very strongly alkaline. Depth to the calcic horizon is 1 to 6 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4 when dry or moist. The horizon is noneffervescent or slightly effervescent.

The Bk horizon, where present, has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. It is strongly effervescent or violently effervescent.

The Bkq horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4 when dry or moist. Texture (less than 2 millimeter fraction) is loamy sand or light sandy loam. Clay content is 8 to 15 percent. The horizon is 45 to 65 percent rock fragments, mainly pebbles. Calcium carbonate content is 10 to 25 percent. The horizon has 30 to 60 percent strong to weak silica-lime cemented plates.

The 2C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is sand, loamy sand, or loamy coarse sand. Rock fragment content averages 50 to 70 percent. Calcium carbonate content is less than 5

percent. The horizon is strongly effervescent or violently effervescent.

Celeton Series

The Celeton series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from diatomaceous earth. These soils are on hills. About 50 percent of the surface is covered with pebbles. Slopes are 4 to 30 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents.

Typical pedon: Celeton very gravelly loam in a rangeland area of Celeton-Dumps-Izo association, about 100 feet north and 700 feet east of the southwest corner of sec. 20, T. 2 N., R. 34 E.

A—0 to 2 inches; light brownish gray (10YR 6/2) very gravelly loam, pale brown (10YR 6/3) moist; weak fine and very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; 50 percent soft diatomaceous earth fragments; 45 percent hard pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 6 inches thick)

C—2 to 10 inches; white (10YR 8/1) loam, light gray (10YR 7/2) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and many very fine roots; many very fine interstitial pores; 65 percent soft diatomaceous earth fragments; 5 percent hard pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (2 to 8 inches thick)

Cr—10 to 20 inches; consolidated, soft diatomaceous earth.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring. Soil temperature is 53 to 57 degrees F. The control section (less than 2 millimeter fraction) averages loam or sandy loam. Clay content is 5 to 15 percent. The control section is 5 to 15 percent hard diatomaceous earth and 60 to 80 percent soft diatomaceous earth. Depth to paralithic contact is 4 to 14 inches. The control section is slightly effervescent or strongly effervescent. Reaction is mildly alkaline to strongly alkaline.

The A horizon has value of 4 to 7 when moist and 7 or 8 when dry, and it has chroma of 2 or 3. The horizon is massive or has subangular blocky structure. Consistence is soft to hard when dry and very friable to firm when moist.

The C horizon has value of 7 or 8 when dry, and it has chroma of 0 to 2. Texture (less than 2 millimeter fraction) is sandy loam or loam that is 5 to 20 percent rock fragments. The horizon is massive or has subangular blocky structure. The horizon is 80 to 90 percent fragments of diatomaceous earth, of which 60 to 80 percent is soft and 5 to 20 percent is hard.

Cirac Series

The Cirac series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on alluvial flats, lake plains, and fan skirts. About 40 percent of the surface is covered with pebbles. Slopes are 0 to 4 percent. The mean annual precipitation is about 4 inches, and the mean annual air temperature is about 54 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torrifluvents.

Typical pedon: Cirac sandy loam in a rangeland area of Cirac-Oricto association, 400 feet north and 1,600 feet east of the southwest corner of sec. 14, T. 2 N., R. 36 E.

A1—0 to 1 inch; light gray (10YR 7/2) sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine interstitial pores; slightly effervescent; strongly alkaline (pH 8.6); gradual smooth boundary. (1 to 3 inches thick)

A2—1 to 4 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium and thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine and fine vesicular pores; many fine interstitial pores; slightly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (0 to 4 inches thick)

C1—4 to 9 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; common very fine interstitial pores and common fine tubular pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (3 to 8 inches thick)

C2—9 to 11 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (2 to 6 inches thick)

C3—11 to 60 inches; pale brown (10YR 6/3) stratified gravelly sand to silt loam, grayish brown (10YR 5/2) moist; faint relict mottles; massive; hard, friable, nonsticky to slightly sticky and nonplastic to slightly plastic; few very fine and fine roots; many very fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods during winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages sandy loam or loam. It includes thin layers of sand to silt loam. Content of rock fragments, mainly pebbles 2.0 to 4.6 millimeters in diameter, averages 0 to 15 percent; any layer can contain as much as 35 percent rock fragments. Clay content averages 8 to 18 percent. Reaction is strongly alkaline or very strongly alkaline. The control section is slightly effervescent to violently effervescent throughout. Electrical conductivity is more than 16 millimhos per centimeter. Sodium absorption ratio is more than 13. Organic matter content decreases irregularly with depth.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4.

The C horizon (less than 2 millimeter fraction) is stratified sand to silt loam. The horizon averages 0 to 15 percent rock fragments, but any stratum can contain as much as 35 percent rock fragments. It has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4.

Cucamungo Series

The Cucamungo series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and hills. Slopes are 15 to 75 percent. The mean annual precipitation is about 14 inches, and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid, shallow Typic Argixerolls.

Typical pedon: Cucamungo very gravelly sandy loam in a woodland area of Cucamungo-Tulecan-Ubehebe association, about 2,100 feet west and 2,100 feet north of the southeast corner of sec. 24, T. 6 S., R. 38 E.

O—1 inch to 0; pine needle duff.

A1—0 to 1 inch; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine and fine interstitial pores; 30 percent pebbles and 5 percent cobbles; neutral (pH 7.0); abrupt smooth boundary. (1 to 3 inches thick)

A2—1 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy clay loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 35 percent pebbles and 10 percent cobbles; neutral (pH 7.0); abrupt smooth boundary. (2 to 4 inches thick)

Bt1—3 to 8 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and fine roots, common medium roots, and few coarse roots; common fine and medium tubular pores; 40 percent pebbles and 5 percent cobbles; common moderately thick clay films on ped faces and lining pores; mildly alkaline (pH 7.4); clear smooth boundary. (5 to 8 inches thick)

Bt2—8 to 15 inches; dark yellowish brown (10YR 4/4) very gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; massive; hard, firm, sticky and plastic; common very fine, fine, and medium roots and few coarse roots; common fine and medium tubular pores; 45 percent pebbles and 5 percent cobbles; common moderately thick clay films on ped faces and lining pores; mildly alkaline (pH 7.4); gradual irregular boundary. (4 to 8 inches thick)

Cr—15 inches; fractured and partially weathered granitic rock.

Range in characteristics

The profile usually is moist in winter and spring and early in summer; it usually is dry late in summer and fall, but it is moist intermittently because of convection storms. It is dry in all parts for at least 45 consecutive days following the summer solstice. Soil temperature is 45 to 47 degrees F. Thickness of the mollic epipedon, including the Bt1 horizon, is 7 to 14 inches. The control section (less than 2 millimeter fraction) is sandy clay loam, loam, or clay loam. Clay content is 20 to 30 percent. The control section is 35 to 55 percent rock fragments, mainly 2 to 5 millimeters in diameter. Depth to weathered bedrock is 14 to 20 inches. Reaction is neutral to moderately alkaline.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3.

The Bt1 horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3. The Bt2 horizon has value of 4 to 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4.

Downeyville Series

The Downeyville series consists of very shallow, well drained soils that formed in residuum and colluvium derived from andesite, rhyolite, and metavolcanic rock. These soils are on hills, mountain slopes, rock pediments, and mesas. Slopes are 8 to 50 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Haplargids.

Typical pedon: Downeyville very gravelly fine sandy loam in a rangeland area of Downeyville-Pintwater-Rock outcrop association, about 2,400 feet west and 2,100

feet south of the northeast corner of sec. 13, T. 7 S., R. 41 E.

A1—0 to 2 inches; light brownish gray (10YR 6/2) very gravelly fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 45 percent pebbles and 10 percent cobbles; noneffervescent; moderately alkaline (pH 8.0); clear smooth boundary. (1 to 3 inches thick)

A2—2 to 4 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure and weak fine subangular blocky; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common very fine and fine interstitial and tubular pores; 20 percent pebbles; thin coatings of carbonates on underside of rock fragments; noneffervescent; moderately alkaline (pH 8.0); clear smooth boundary. (0 to 4 inches thick)

Bt—4 to 6 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate thin platy structure and moderate fine subangular blocky; soft, friable, slightly sticky and nonplastic; common very fine, fine, and medium roots; common very fine and fine interstitial and tubular pores; 30 percent pebbles; moderately thick carbonates and silica on underside of rock fragments; few thin clay films on ped faces and lining pores; noneffervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 3 inches thick)

Btk—6 to 9 inches; very pale brown (10YR 7/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine and fine roots; common very fine and fine interstitial and tubular pores; 30 percent pebbles and 20 percent cobbles; moderately thick carbonates on underside of rock fragments; few thin clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (2 to 7 inches thick)

R—9 inches; fractured volcanic tuff; discontinuous lime and silica cementation in fractures; becomes hard at a depth of 13 inches.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. Depth to bedrock is 4 to 14 inches. Clay content of the control section is 14 to 25 percent. The control section is 35 to 60 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. Carbonates and accessory silica in the form of pendants generally are present on the underside of pebbles.

The A horizon has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 3 to 5 when moist, and chroma of 2 or 3.

The Bt horizon has value of 5 to 7 when dry and 3 to 5 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loam or fine sandy loam, but some pedons have layers of silt loam. Clay content is 18 to 25 percent. Rock fragment content averages 5 to 20 percent cobbles and stones and 30 to 50 percent pebbles. Reaction is moderately alkaline or strongly alkaline. The horizon is slightly effervescent to violently effervescent in the lower part.

The Btk horizon is slightly effervescent to violently effervescent.

Eaglepass Series

The Eaglepass series consists of very shallow, well drained soils that formed in residuum and colluvium derived from limestone and dolomite. These soils are on mountain slopes and hills. Slopes are 30 to 75 percent. The mean annual precipitation is about 8 inches, and the mean annual temperature is about 49 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents.

Typical pedon: Eaglepass extremely stony loam in a rangeland area of Eaglepass-Rock outcrop complex, 30 to 75 percent slopes, about 800 feet south and 2,200 feet west of the northeast corner of sec. 15, T. 2 N., R. 34 E.

A—0 to 1 inch; pale brown (10YR 6/3) extremely stony loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 55 percent pebbles and 15 percent stones; moderately alkaline (pH 8.4); violently effervescent; abrupt smooth boundary. (0 to 2 inches thick)

C—1 to 6 inches; pale brown (10YR 6/3) extremely stony sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common fine and many very fine roots; many fine interstitial pores; 45 percent pebbles and 15 percent stones; moderately alkaline (pH 8.4); violently effervescent; abrupt wavy boundary. (2 to 6 inches thick)

R—6 inches; hard bedrock.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 50 to 53 degrees F. Depth to bedrock is 3 to 6 inches. The control section (less than 2 millimeter fraction) is loam, fine sandy loam, or sandy

loam. Clay content is 8 to 18 percent. The control section is 60 to 75 percent pebbles, cobbles, and stones. Reaction is moderately alkaline or strongly alkaline. The less-than-20-millimeter fraction is more than 40 percent calcium carbonate equivalent.

The A horizon has value of 5 to 7 when dry and 3 to 5 when moist, and it has chroma of 3 or 4.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Lime pendants and coatings are on rock fragments in most pedons.

Entero Series

The Entero series consists of very shallow, well drained soils that formed in residuum and colluvium derived from siltstone and related rocks. These soils are on hills and mountain slopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids.

Typical pedon: Entero very channery loam in a rangeland area of Entero-Ubehebe-Penelas association, west of Indian Springs; about 1,300 feet south and 2,200 feet west of the northeast corner of sec. 25, T. 2 S., R. 41 E.

A—0 to 2 inches; brown (10YR 5/3) very channery loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine, fine, and medium vesicular and interstitial pores; 50 percent channery fragments and 5 percent cobbles; mildly alkaline (pH 7.6); abrupt smooth boundary. (1 to 3 inches thick)

Bt1—2 to 7 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and plastic; common very fine, fine, medium, and coarse roots; many very fine tubular pores; 40 percent pebbles and 5 percent cobbles consisting of about equal amounts of flat, elongated fragments and angular compact fragments; mildly alkaline (pH 7.6); abrupt wavy boundary. (3 to 12 inches thick)

Bt2—7 to 10 inches; dark yellowish brown (10YR 4/4) extremely gravelly clay, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; 60 percent pebbles and 5 percent cobbles consisting of about equal amounts of flat, elongated fragments and angular compact fragments that retain about 60 percent rock structure; few thin clay films on ped faces and lining pores; mildly alkaline (pH 7.6); abrupt broken boundary. (0 to 5 inches thick)

Cr—10 to 20 inches; fractured siltstone; few fine medium roots in fractures.

Range in characteristics

The profile is moist in winter and early in spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to soft rock is 5 to 14 inches. Clay content of the control section is 25 to 35 percent. The control section is 35 to 55 percent rock fragments, mainly channery fragments and angular pebbles. Reaction is mildly alkaline or moderately alkaline.

The A horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 2 or 3.

The Bt horizon has hue of 10YR, 7.5YR, or 5YR, value of 5 or 6 when dry and 3 to 5 when moist, and chroma of 4 or 6. Texture (less than 2 millimeter fraction) averages clay loam, but layers of loam or clay are common. The horizon is 35 to 60 percent rock fragments. Structure is subangular blocky or granular. Lime and silica pendants are present in some pedons.

Espint Series

The Espint series consists of very shallow, well drained soils that formed in residuum and colluvium derived from tuffaceous rock and other volcanic rock. These soils are on mountain slopes, hills, and rock pediments. Slopes are 2 to 50 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 52 degrees F.

Taxonomic class: Clayey, montmorillonitic, mesic, shallow Xerollic Haplargids.

Typical pedon: Espint very gravelly fine sandy loam in a rangeland area of Espint-Vindicator association, near Goldfield, about 2,300 feet east and 800 feet north of the southwest corner of sec. 29, T. 2 S., R. 43 E.

A—0 to 1 inch; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure parting to moderate very fine granular; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine interstitial pores; 40 percent pebbles; noneffervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (1 to 2 inches thick)

Bt1—1 to 3 inches; brown (10YR 5/3) gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate very fine granular; soft, very friable, sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial pores; 20 percent pebbles and 2 percent cobbles; few thin clay films lining pores; noneffervescent; moderately alkaline

(pH 8.2); abrupt smooth boundary. (1 to 4 inches thick)

Bt2—3 to 7 inches; yellowish brown (10YR 5/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots and few medium roots; many very fine and fine interstitial and tubular pores; 30 percent pebbles; few thin clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (3 to 8 inches thick)

Cr—7 inches; saprolite weathered from tuff; fractures contain few coarse roots.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to soft rock is 6 to 14 inches. Clay content of the control section is 35 to 50 percent. The control section is 10 to 30 percent rock fragments, dominantly pebbles. Reaction is mildly alkaline or moderately alkaline.

The A horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 2 or 3. The horizon is dominantly noncalcareous, but it ranges to strongly effervescent in some pedons because of eolian deposition.

The Bt1 horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 3 or 4. Texture (less than 2 millimeter fraction) commonly is sandy clay loam or clay loam; some pedons have layers of sandy clay or clay. Clay content is 27 to 40 percent. The horizon is 10 to 30 percent rock fragments, dominantly pebbles and cobbles.

The Bt2 horizon has hue of 10YR, 7.5YR, or 5YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 3, 4, or 6. Texture (less than 2 millimeter fraction) is heavy clay loam, sandy clay, or clay. Clay content is 35 to 60 percent. The horizon is 10 to 30 percent rock fragments, mainly pebbles and cobbles. It is slightly effervescent or strongly effervescent. Thin silica and lime pendants are on rock fragments in some pedons. This layer commonly reflects the color of the saprolitic material from which it formed.

Fuegosta Series

The Fuegosta series consists of well drained soils that formed in mixed alluvium. These soils are on fan piedmont remnants. Slopes are 2 to 4 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees.

Taxonomic class: Clayey, montmorillonitic, mesic, shallow Abruptic Durargids.

Typical pedon: Fuegosta gravelly fine sandy loam in a rangeland area of Fuegosta-Tomel-Izo association, about 600 feet north and 300 feet east of the southwest corner of sec. 21, T. 6 S., R. 43 E.

A—0 to 3 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine, fine, and medium vesicular pores; 20 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.5); abrupt smooth boundary. (3 to 5 inches thick)

Bt—3 to 11 inches; light brown (7.5YR 6/4) gravelly clay, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and medium roots; many very fine tubular pores; 20 percent pebbles and 5 percent cobbles; common thin clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (8 to 13 inches thick)

Bk—11 to 16 inches; light brown (7.5YR 6/4) very gravelly heavy sandy loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and medium roots; many very fine and medium interstitial pores; 35 percent pebbles and 5 percent cobbles; common thin lime pendants on rock fragments; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (0 to 6 inches thick)

Bqkm1—16 to 26 inches; indurated duripan; extremely hard, extremely firm. (6 to 12 inches thick)

Bqkm2—26 to 60 inches; very pale brown (10YR 8/3) strongly silica-lime cemented strata as much as 12 inches thick alternating with strata of gravelly loamy coarse sand as much as 6 inches thick, very pale brown (10YR 7/3) moist; massive; violently effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 54 to 59 degrees F. Depth to the duripan is 16 to 20 inches. Depth to the base of the Bt horizon is 11 to 18 inches. The control section (less than 2 millimeter fraction) is clay loam or clay. Clay content is 25 to 50 percent. Rock fragment content is 20 to 35 percent.

The A horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 or 3. Structure is platy or granular. The horizon is slightly effervescent or strongly effervescent.

The Bt horizon has hue of 5YR or 7.5YR, value of 5 or 6 when dry and 3 to 5 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is clay loam or clay. Clay content is 35 to 50 percent. The horizon is 20

to 30 percent rock fragments, mostly pebbles. It is slightly effervescent or strongly effervescent.

The Bk horizon, where present, has hue of 5YR or 7.5YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 2 to 4. The horizon is 35 to 50 percent rock fragments, mostly pan fragments.

The Bqkm horizon is indurated in the upper part; the lower part is strongly cemented layers alternating with strata of extremely gravelly loamy coarse sand.

Gabbvally Series

The Gabbvally series consists of very shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on hills and mountain slopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids.

Typical pedon: Gabbvally very stony loam in a rangeland area of Gabbvally-Beelem-Rock outcrop association, about 2,000 feet south and 1,100 feet east of the northwest corner of sec. 1, T. 1 N., R. 33 E.

A—0 to 4 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 3/3) moist; weak fine to medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; many fine interstitial pores; 30 percent pebbles, 20 percent cobbles, and 5 percent stones; neutral (pH 7.2); clear smooth boundary. (1 to 4 inches thick)

Bt1—4 to 8 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 35 percent pebbles and 5 percent cobbles; common thin clay films on ped faces and in pores; mildly alkaline (pH 7.4); clear smooth boundary. (2 to 4 inches thick)

Bt2—8 to 13 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; common fine tubular pores; 35 percent pebbles and 5 percent cobbles; common thin clay films on peds and in pores; mildly alkaline (pH 7.4); abrupt wavy boundary. (3 to 7 inches thick)

R—13 inches; hard fractured black ignimbrite.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages loam or sandy loam. It is 15 to 25 percent clay. It is 35 to 50 percent rock fragments, mainly pebbles. Depth to bedrock is 6 to 14 inches.

The A horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4 when dry or moist. Structure is weak and subangular blocky or platy. Reaction is neutral or mildly alkaline.

The Bt horizon is 18 to 27 percent clay. It has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4 when dry or moist. Texture (less than 2 millimeter fraction) is sandy clay loam, loam, or heavy sandy loam. The horizon is 35 to 50 percent rock fragments. Reaction is neutral or mildly alkaline.

Garhill Series

The Garhill series consists of very shallow, well drained soils that formed in residuum weathered from basalt and eolian material. These soils are on hills and mesas. Slopes are 2 to 8 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Typic Durorthids.

Typical pedon: Garhill very stony loamy fine sand in a rangeland area of Garhill-Upspring-Rock outcrop association, about 1,200 feet west and 900 feet east of the southwest corner of sec. 36, T. 9 S., R. 41 E.

A1—0 to 2 inches; light brownish gray (10YR 6/2) very stony loamy fine sand, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular pores; 30 percent pebbles, 15 percent cobbles, and 3 percent stones; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (1 to 2 inches thick)

A2—2 to 5 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine interstitial and vesicular pores; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (3 to 5 inches thick)

Bk—5 to 11 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial pores; 20 percent pebbles; lime on underside of pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary. (3 to 7 inches thick)

2Bqkm—11 to 20 inches; continuous duripan; moderately thick laminar cap; abrupt wavy boundary. (2 to 23 inches thick)

R—20 inches; basalt.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 56 to 59 degrees F. The control section is 10 to 18 percent clay. It is 15 to 25 percent rock fragments. Depth to the duripan is 7 to 14 inches. Depth to bedrock is 12 to 30 inches. Pan fragments and lime accumulations are common in layers immediately above the duripan in most pedons.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It is noneffervescent to violently effervescent. Structure is subangular blocky, platy, or single grain.

The Bk horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is loam or heavy sandy loam. Clay content is 18 to 25 percent. The horizon is 15 to 35 percent rock fragments, mainly pebbles. Structure is weak and subangular blocky or platy. Reaction is moderately alkaline or strongly alkaline.

The Bqkm horizon has value of 7 or 8 when dry and 5 to 7 when moist, and it has chroma of 1 or 2 when dry and 3 or 4 when moist. The horizon has platy structure or is massive. The horizon has a continuous laminar cap 1/8 to 3/4 inch thick. It has a strongly cemented, somewhat fractured, indurated duripan that has pockets of weakly cemented material.

Geer Series

The Geer series consists of very deep, well drained soils that formed in alluvium derived from mixed sources modified by glass and other pyroclastic material. These soils are on fan skirts and alluvial fans. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Geer fine sandy loam, 0 to 4 percent slopes, about 600 feet east and 1,900 feet south of the northwest corner of sec. 25, T. 4 S., R. 41 E.

A1—0 to 1 inch; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 10 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary. (0 to 2 inches thick)

A2—1 to 4 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (2 to 10 inches thick)

C1—4 to 25 inches; pale brown (10YR 6/3) fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common medium, fine, and very fine roots; many very fine and fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.2); abrupt wavy boundary. (15 to 30 inches thick)

C2—25 to 42 inches; light yellowish brown (10YR 6/4) stratified sandy loam to silt loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; many very fine and fine interstitial and tubular pores; violently effervescent; very strongly alkaline (pH 9.0); abrupt smooth boundary. (12 to 25 inches thick)

2Bqk—42 to 60 inches; light yellowish brown (10YR 6/4) gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; many very fine tubular pores; 25 percent pebbles; few thin silica and lime filaments; violently effervescent; moderately alkaline (pH 8.2).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is mainly loam or very fine sandy loam, but it includes thin horizons of fine sandy loam, sandy loam, and silt loam. Clay content averages less than 18 percent. There is an average of 15 to 30 percent sand that is fine or coarser. Mineralogy is influenced by volcanic ash, glass, and other pyroclastic material. Gravelly layers are not present in some pedons below a depth of 40 inches. Reaction is moderately alkaline to very strongly alkaline.

The A horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It has platy structure or is massive. The horizon is slightly effervescent or strongly effervescent.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. It is strongly effervescent or violently effervescent. Some fine or medium lime segregations are present in strata below a depth of 20 inches in some pedons. Few to common, faint, high-chroma iron mottles are below a depth of 40 inches in some cultivated areas.

Gynelle Series

The Gynelle series consists of very deep, somewhat excessively drained soils that formed in mixed alluvium. These soils are on alluvial flats, fan piedmonts, fan skirts, alluvial fans, and alluvial plains. Slopes are 0 to 15 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 56 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents.

Typical pedon: Gynelle very gravelly sand in a rangeland area of Gynelle-Oricto association, 0.4 mile northwest of Highway 95 on the east side of the road running north from McClans, about 2,200 feet north and 500 feet east of the southwest corner of the apparent sec. 1 in an unsurveyed area of T. 2 N., R. 38 E.

A—0 to 2 inches; light gray (10YR 7/2) very gravelly sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; many fine and very fine interstitial pores; 35 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 4 inches thick)

Bw—2 to 10 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many medium and fine roots; many fine and very fine interstitial pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (2 to 10 inches thick)

2Bk—10 to 22 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine and very fine roots; many fine and very fine interstitial pores; few moderately thick white (10YR 8/1) lime pendants on lower surface of pebbles; 50 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary. (5 to 15 inches thick)

3C1—22 to 38 inches; pale brown (10YR 6/3) extremely cobbly sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many fine and very fine interstitial pores; 30 percent pebbles, 30 percent cobbles, and 5 percent stones; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (5 to 20 inches thick)

4C2—38 to 60 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many medium and fine interstitial pores; 35 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, and it is dry in the lower part of the control section throughout the year in most years. It is moist in the upper part in winter and spring and for short periods in summer following storms. Soil temperature is 55 to 59 degrees F. The control section (less than 2 millimeter fraction) is stratified sand, loamy sand, and coarse sand and includes a layer of light sandy loam. It averages loamy coarse sand, coarse sand, or loamy sand. It is slightly effervescent to violently effervescent. Reaction is moderately alkaline to very strongly alkaline. Rock fragment content is 35 to 60 percent. Depth to the 2Bk horizon is 4 to 14 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Layers of gravelly sandy loam or sandy clay loam less than 3 inches thick are present in some pedons.

The B and C horizons have value of 6 or 7 when dry and 4 or 5 when moist, and they have chroma of 2 or 3. They average 35 to 60 percent rock fragments, mostly pebbles; any stratum can have as much as 80 percent rock fragments that include 40 percent cobbles and stones. Electrical conductivity is 4 to 8 millimhos per centimeter. The horizons are massive or have weak and subangular blocky structure. Lime occurs as pendants in one or more horizons in most pedons. Lime-coated pebbles are present in some horizons of some pedons.

Handpah Series

The Handpah series consists of shallow, well drained soils that formed in mixed alluvium of dominantly volcanic rock. These soils are on fan piedmonts. Slopes are 2 to 15 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Xerollic Durargids.

Typical pedon: Handpah very cobbly sandy loam in a rangeland area of Handpah-Breko-Veet association, about 500 feet south and 900 feet east of the northwest corner of sec. 31, T. 5 S., R. 41 E.

A1—0 to 1 inch; pale brown (10YR 6/3) very cobbly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, nonsticky and slightly plastic; many fine, medium, and coarse vesicular pores; 35 percent pebbles and 20 percent cobbles; moderately alkaline (pH 8.2); abrupt smooth boundary. (0 to 2 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common medium roots and many fine and very fine roots; common medium and fine vesicular pores and common fine tubular pores; 20 percent pebbles and 10 percent cobbles; slightly effervescent; moderately

alkaline (pH 8.2); abrupt smooth boundary. (2 to 8 inches thick)

Bt—3 to 10 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; many coarse, medium, and fine roots; many medium and fine and common coarse tubular pores; 25 percent pebbles; common thin and moderately thick clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (6 to 18 inches thick)

Bqk—10 to 18 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard to brittle, very friable to brittle, slightly sticky and slightly plastic; common medium and fine roots; many medium and fine and common coarse tubular pores; 30 percent pebbles and 5 percent cobbles; some weak to strong cementation; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary. (0 to 8 inches thick)

Bqkm1—18 to 24 inches; indurated duripan; silica and lime cementation. (3 to 10 inches thick)

Bqkm2—24 to 60 inches; continuous strong cementation; massive; very hard, brittle; violently effervescent.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages loam, light clay loam, or sandy clay loam, but all pedons have thin layers of heavy clay loam or clay. Clay content averages 25 to 35 percent. The control section is 15 to 30 percent rock fragments. Depth to the duripan is 14 to 20 inches.

The A horizon has value of 6 or 7 when dry and 4 to 5 when moist, and it has chroma of 2 to 4. Reaction is mildly alkaline or moderately alkaline. Structure is single grain, platy, or subangular blocky. The horizon is noneffervescent or slightly effervescent.

The Bt horizon has value of 5 or 6 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Reaction is moderately alkaline or strongly alkaline. The horizon commonly is noneffervescent or slightly effervescent, but in some pedons it is strongly effervescent in the lower part.

The Bqkm horizon is indurated in the upper part and commonly is strongly cemented to a depth of 60 inches. Some pedons have weakly cemented layers within the strongly cemented mass. The duripan is probably degrading; it is fractured but is still in place.

Handpah Variant

The Handpah Variant consists of very deep, well drained soils that formed in alluvium derived from various kinds of rock. These soils are on fan remnants and fan piedmonts. Slopes are 4 to 30 percent. The mean annual precipitation is about 15 inches, and the mean annual air temperature is about 48 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Aridic Argixerolls.

Typical pedon: Handpah Variant gravelly sandy clay loam in a rangeland area of Handpah Variant-Veet-Veet Variant association, about 900 feet west and 1,800 feet south of the northeast corner of sec. 34, T. 6 S., R. 36 E.

A—0 to 8 inches; grayish brown (10YR 5/2) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine subangular blocky structure; soft, friable, slightly sticky and plastic; many medium, fine, and very fine roots; many very fine and fine interstitial pores and common fine tubular pores; 25 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary. (7 to 10 inches thick)

Bt1—8 to 13 inches; brown (10YR 5/3) gravelly clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few coarse roots and many medium, fine, and very fine roots; many very fine and fine tubular pores; 15 percent pebbles; common thin clay films on ped faces and lining pores; mildly alkaline (pH 7.4); abrupt smooth boundary. (4 to 10 inches thick)

Bt2—13 to 23 inches; yellowish brown (10YR 5/4) gravelly clay, brown (10YR 4/3) moist; weak medium columnar structure parting to moderate coarse and medium angular blocky; slightly hard, friable, sticky and plastic; few coarse and medium roots and common fine roots; many very fine, fine, and medium tubular pores; 15 percent pebbles; continuous moderately thick and thick clay films on ped faces, lining pores, and coating pressure faces; mildly alkaline (pH 7.6); clear smooth boundary. (8 to 15 inches thick)

Bt3—23 to 36 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, sticky and plastic; few coarse, medium, and fine roots; few medium and fine tubular pores; 40 percent pebbles and 10 percent cobbles; many thin and moderately thick clay films lining pores and on ped faces; mildly alkaline (pH 7.5); clear wavy boundary. (10 to 15 inches thick)

C—36 to 60 inches; light yellowish brown (10YR 6/4) extremely cobbly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, sticky

and plastic; few medium and fine roots; few medium and fine tubular pores; 25 percent pebbles and 50 percent cobbles; mildly alkaline (pH 7.8).

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 47 to 53 degrees F. The thickness of the mollic epipedon is 11 to 18 inches. The control section (less than 2 millimeter fraction) averages clay loam or clay. Clay content is 35 to 45 percent. Rock fragment content is 15 to 30 percent. The profile is neutral or mildly alkaline.

Hiridge Series

The Hiridge series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on ridges and tops of mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 13 inches, and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, shallow Argic Cryoborolls.

Typical pedon: Hiridge very gravelly sandy loam in a rangeland area of Hiridge-Kiote-Rock outcrop association, about 100 feet west and 600 feet north of the southeast corner of sec. 6, T. 3 S., R. 37 E.

A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores and few very fine vesicular pores; 30 percent pebbles and 10 percent cobbles; neutral (pH 7.2); clear smooth boundary. (1 to 3 inches thick)

A2—2 to 4 inches; grayish brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common fine tubular pores; 30 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary. (2 to 4 inches thick)

Bt1—4 to 8 inches; brown (10YR 4/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; few thin clay films coating pores and ped faces; 35 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary. (3 to 6 inches thick)

Bt2—8 to 17 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; few thin clay films coating pores and ped faces; 50 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear wavy boundary. (6 to 10 inches thick)

Cr—17 to 25 inches; fractured, partially weathered basalt; roots and some clay in fractures. (7 to 10 inches thick)

R—25 inches; hard basalt.

Range in characteristics

The profile is moist in winter and spring and early in summer; it usually is dry late in summer and in fall but is moist intermittently because of convection storms. It is dry in all parts for at least 45 consecutive days following summer solstice. The mean annual soil temperature is 43 to 47 degrees F. The mean summer soil temperature is 53 to 57 degrees F. The control section (less than 2 millimeter fraction) is heavy loam or clay loam. Clay content is 25 to 35 percent. Rock fragment content is 35 to 60 percent. Reaction is neutral or mildly alkaline. Depth to soft bedrock is 14 to 20 inches. Depth to hard bedrock is 21 to 30 inches. Thickness of the mollic epipedon is 7 to 13 inches.

The A horizon has value of 4 or 5 when dry and 3 when moist, and it has chroma of 2 or 3 when dry or moist.

When dry, the Bt horizon has value of 4 or 5; when moist, the upper part has value of 3 and the lower part has value of 3 or 4. The horizon has chroma of 3 or 4. Clay content is 25 to 35 percent. The horizon is 35 to 60 percent rock fragments.

Itme Series

The Itme series consists of very deep, excessively drained soils that formed in alluvium derived dominantly from granitic rock. These soils are on fan piedmonts, alluvial fans, and fan skirts and in drainageways. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual air temperature is about 54 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents.

Typical pedon: Itme very gravelly sand in a rangeland area of Leo-Itme-Izo association, about 300 feet north and 300 feet east of the southwest corner of sec. 12, T. 5 S., R. 37 E.

A1—0 to 3 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 5 inches thick)

C1—3 to 11 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine and fine interstitial pores; 45 percent pebbles and 5 percent cobbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (6 to 20 inches thick)

C2—11 to 41 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; many very fine and fine interstitial pores; 45 percent pebbles and 10 percent cobbles; lime pendants on lower surface of pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (10 to 50 inches thick)

2Btb—41 to 60 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine tubular pores; 20 percent pebbles and 5 percent cobbles; few thin clay films on ped faces; slightly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and from 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Soil reaction is mildly alkaline to strongly alkaline. The control section (less than 2 millimeter fraction) is loamy sand or sand. Clay content is 0 to 8 percent. The control section is 35 to 60 percent rock fragments, mostly pebbles; more than 50 percent of the rock fragments are 2 to 5 millimeters in diameter.

The A horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon is noneffervescent or slightly effervescent.

The C horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. It is slightly effervescent to violently effervescent.

Izo Series

The Izo series consists of very deep, excessively drained soils that formed in alluvium derived from mixed igneous and sedimentary rock. These soils are in channels, on inset fans, and in drainageways. Slopes are 0 to 8 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents.

Typical pedon: Izo very gravelly sand in a rangeland area of Wardenot-Izo association, about 1,000 feet south and 1,800 feet east of the northwest corner of sec. 31, T. 2 N., R. 42 E., about 40 feet north of the road.

A—0 to 1 inch; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 4 inches thick)

C1—1 to 8 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; 35 percent pebbles and 2 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (0 to 8 inches thick)

C2—8 to 22 inches; pale brown (10YR 6/3), stratified gravelly loamy coarse sand and very gravelly coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine, fine, and medium interstitial pores; 45 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (0 to 40 inches thick)

C3—22 to 35 inches; pale brown (10YR 6/3), stratified gravelly loamy coarse sand and extremely gravelly coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine, fine, and medium interstitial pores; 50 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (0 to 40 inches thick)

C4—35 to 60 inches; pale brown (10YR 6/3), stratified very gravelly coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine, fine, and medium interstitial pores; 45 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is stratified coarse sand, loamy sand, or loamy coarse sand. The profile is 50 to 75 percent rock fragments, mainly pebbles. It is slightly effervescent or strongly effervescent. Reaction is moderately alkaline or strongly alkaline, and reaction commonly increases as depth increases. Individual thin strata are noncalcareous.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. It is platy, massive, or single grain.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. It is massive or single grain. Texture (less than 2 millimeter fraction) is coarse sand or loamy coarse sand, commonly stratified. The horizon is 50 to 75 percent rock fragments, mainly

pebbles. Individual strata range from 15 to 85 percent rock fragments.

Kawich Series

The Kawich series consists of deep and very deep, excessively drained soils that formed in eolian sand derived from various kinds of rock. These soils are on stabilized dunes or dune sheets. Slopes are 4 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Mixed, mesic Typic Torripsamments.

Typical pedon: Kawich fine sand in a rangeland area of Yomba-Playas-Kawich association, about 500 feet north and 100 feet east of the southwest corner of sec. 18, T. 3 N., R. 40 E.

A—0 to 6 inches; light gray (10YR 7/2) fine sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few fine and very fine roots; many very fine interstitial pores; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (2 to 6 inches thick)

C—6 to 60 inches; light gray (10YR 7/2) fine sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; common medium roots and many fine and very fine roots; many very fine interstitial pores; slightly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section averages fine sand, but some pedons contain strata of sand or loamy fine sand. It is slightly effervescent to violently effervescent. Depth to unconformable playa sediment is 40 inches to more than 120 inches. Reaction is moderately alkaline to very strongly alkaline. The profile has hue of 10YR or 7.5YR, value of 5 to 8 when dry and 4 to 6 when moist, and chroma of 2 to 4.

Keefa Series

The Keefa series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on fan skirts and lake plains. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Duric Camborthids.

Typical pedon: Keefa sandy loam in a rangeland area of Keefa-Itme association, about 1,500 feet north and 1,700 feet west of the southeast corner of sec. 24, T. 6 S., R. 41 E.

A1—0 to 2 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine vesicular pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 4 inches thick)

A2—2 to 5 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine and common medium vesicular pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (0 to 4 inches thick)

Bw—5 to 11 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine, fine, and medium tubular pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (5 to 15 inches thick)

Bk1—11 to 18 inches; very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; many very fine, fine, and medium tubular pores; 5 percent pebbles; common thin lime pendants on rock fragments; few faint (10YR 7/2) lime filaments; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (5 to 10 inches thick)

Bk2—18 to 27 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; many very fine, fine, and medium tubular pores; 10 percent pebbles; few thin lime pendants on rock fragments; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (0 to 15 inches thick)

Bqk—27 to 36 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm and brittle; common very fine and fine roots; common very fine and fine tubular pores; 15 percent pebbles; continuous weak silica and lime cementation; common thin white (N 8/0) silica-lime filaments and pendants on rock fragments; violently effervescent; very strongly alkaline (pH 9.2); abrupt wavy boundary. (6 to 24 inches thick)

C—36 to 60 inches; light yellowish brown (10YR 6/4), stratified very gravelly sand to gravelly sandy loam,

dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine, fine, and coarse interstitial pores; 30 percent pebbles; discontinuous lenses of weak or strong silica and lime cementation; strongly effervescent; moderately alkaline (ph 8.0).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section is 8 to 15 percent clay. It is 10 to 25 percent rock fragments. Texture (less than 2 millimeter fraction) averages sandy loam or coarse sandy loam. Depth to the duric layer is 20 to 36 inches. The profile is strongly effervescent or violently effervescent in all parts. The A and Bw horizons are affected by recharge of carbonates in the form of dust.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4.

The Bw horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 4 or 6. Texture is sandy loam or coarse sandy loam. The horizon is 0 to 15 percent rock fragments, of which 50 percent or more are less than 5 millimeters in diameter. Structure is moderate to strong and subangular blocky. Reaction is moderately alkaline or strongly alkaline.

The Bk horizon has value of 6 to 8 when dry and 4 or 5 when moist, and it has chroma of 2 to 6. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. The horizon is 0 to 30 percent rock fragments, of which 50 percent or more are less than 5 millimeters in diameter. Reaction is moderately alkaline or strongly alkaline.

The Bqk horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 4 or 6. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam; strata of loamy sand are present in some pedons. The horizon is 15 to 35 percent rock fragments, of which 50 percent or more are less than 5 millimeters in diameter. Reaction is strongly alkaline or very strongly alkaline.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 4 to 6. Texture (less than 2 millimeter fraction) is sandy loam to loamy coarse sand. The horizon is 15 to 30 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. Discontinuous lenses of weakly or strongly silica- and lime-cemented material are present in some pedons.

Kiote Series

The Kiote series consists of very deep, well drained soils that formed in residuum derived from andesitic and rhyolitic rocks. These soils are on mountain slopes. Slopes are 30 to 50 percent. The mean annual precipitation is about 15 inches, and the mean annual temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, mixed Argic Pachic Cryoborolls.

Typical pedon: Kiote very gravelly loam in a rangeland area of Hiridge-Kiote-Rock outcrop association, about 2,200 feet west and 100 feet north of the southeast corner of sec. 16, T. 6 S., R. 40 E.

A1—0 to 4 inches; brown (10YR 4/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 45 percent pebbles; neutral (pH 7.3); clear smooth boundary. (1 to 4 inches thick)

A2—4 to 10 inches; brown (10YR 4/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine tubular pores; 45 percent pebbles; neutral (pH 7.3); clear smooth boundary. (5 to 15 inches thick)

Bt1—10 to 14 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; common fine tubular pores; few thin clay films on peds and pores; 30 percent pebbles and 5 percent cobbles; neutral (pH 7.3); clear smooth boundary. (1 to 15 inches thick)

Bt2—14 to 21 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; common fine tubular pores; common thin clay films on peds; 35 percent pebbles and 5 percent cobbles; neutral (pH 7.3); clear smooth boundary. (6 to 10 inches thick)

B3t—21 to 35 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; common fine tubular pores; common thin clay films on peds; 45 percent pebbles and 5 percent cobbles; neutral (pH 7.3); clear smooth boundary. (3 to 16 inches thick)

2C—35 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; 60 percent pebbles and 10 percent cobbles; neutral (pH 7.3).

Range in characteristics

The profile usually is moist in winter, in spring, and early in summer; it usually is dry late in summer and in fall but is moist intermittently because of convection

storms. It is dry in all parts for at least 45 consecutive days following the summer soltice. Average annual soil temperature is 41 to 45 degrees F. Average soil temperature in summer is 54 to 59 degrees F. The thickness of the mollic epipedon is 16 to 24 inches. The control section (less than 2 millimeter fraction) is loam or clay loam. Clay content is 18 to 25 percent. The control section is 45 to 60 percent rock fragments, mostly pebbles (less than 15 percent cobbles and stones). Depth to bedrock is more than 60 inches.

The A horizon has value of 4 or 5 when dry and 3 when moist, and it has chroma of 2 or 3.

The B horizon has value of 4 or 5 when dry and 3 or 4 when moist, and it has chroma of 2 to 4. Rock fragment content averages 45 to 60 percent, but some pedons have strata that are 60 to 80 percent rock fragments. Clay content averages 18 to 25 percent.

The 2C horizon in some pedons has clay coatings on rock fragments that are the result of vertical and lateral movement of water. The sand grains commonly are bleached clean by lateral movement of water.

Koyen Series

The Koyen series consists of very deep, well drained soils that formed in loamy alluvium derived dominantly from volcanic rock. These soils are on fan piedmonts, fan skirts, and alluvial flats. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Typic Camborthids.

Typical pedon: Koyen fine sandy loam in a rangeland area of Leo-Koyen association, about 1,200 feet north and 1,500 feet east of the southwest corner of sec. 35, T. 4 N., R. 41 E.

A—0 to 4 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; common fine and many very fine interstitial pores; 10 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 4 inches thick)

Bw1—4 to 6 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; many very fine interstitial pores; 10 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 6 inches thick)

Bw2—6 to 15 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine and common fine interstitial pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (8 to 12 inches thick)

Bk—15 to 35 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine roots and common fine and coarse roots; many very fine roots and common fine interstitial pores; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (19 to 45 inches thick)

2C—35 to 60 inches; light gray (10YR 7/2) very gravelly loamy sand, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 40 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the Bk horizon is 14 to 21 inches. Reaction is moderately alkaline or strongly alkaline. The control section (less than 2 millimeter fraction) is sandy loam, but some pedons have strata of fine sandy loam, loam, or loamy sand. Rock fragment content averages 10 to 25 percent, but any one horizon can have as much as 40 percent pebbles. Clay content of the control section is 10 to 18 percent.

The A horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2, 3, or 4. The horizon has very thin to medium and platy or very fine to medium and subangular blocky structure, or it is massive.

The Bw horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. The horizon appears to be massive, but it parts to very weak or weak, coarse or medium, and subangular blocky structure. The horizon is noneffervescent except in the lower part.

The Bk horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. The horizon is strongly effervescent or violently effervescent. It has subangular blocky structure or is massive.

The 2C horizon is not present in some pedons.

Kyler Series

The Kyler series consists of very shallow, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on mountain slopes, rock pediments, and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents.

Typical pedon: Kyler very gravelly fine sandy loam in a rangeland area of Theriot-Kyler-Rock outcrop association, about 1,100 feet east and 400 feet south of the northwest corner of sec. 13, T. 2 N., R. 40 E.; about 150 yards north of Mike's Well Road.

A1—0 to 1 inch; pale brown (10YR 6/3) very gravelly fine sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; many very fine interstitial pores; 45 percent pebbles and 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 2 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine interstitial and tubular pores; 45 percent pebbles and 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 6 inches thick)

Bk—3 to 9 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; many very fine and fine tubular and interstitial pores; 35 percent pebbles and 15 percent cobbles; many moderately thick lime pendants on rock fragments; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary. (3 to 10 inches thick)

R—9 inches; hard limestone.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is mainly loam, but it includes strata of fine sandy loam, very fine sandy loam, or silt loam in some pedons. Clay content is 7 to 18 percent. Rock fragment content is 35 to 60 percent. Depth to bedrock is 6 to 14 inches. Reaction is moderately alkaline or strongly alkaline. The control section is 40 percent calcium carbonate equivalent. Some pedons do not have a Bk horizon.

The A horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. It has platy or subangular blocky structure or is massive.

The C horizon has hue of 10YR or 7.5YR, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loam, but strata of fine sandy loam, very sandy loam, or silt loam are included. The horizon is 35 to 60 percent rock fragments. Some strata have as much as 70 percent rock fragments in some pedons. The horizon is massive or has subangular blocky structure.

Lathrop Series

The Lathrop series consists of very deep, well drained soils that formed in alluvium derived from various kinds of rock. These soils are on alluvial fans and fan piedmonts. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, mesic Duric Haplargids.

Typical pedon: Lathrop very stony fine sandy loam in a rangeland area of Lathrop-Leo association, about 1,200 feet south and 1,300 feet east of the northwest corner of sec. 11, T. 2 N., R. 42 E., south of Mount Butler.

A—0 to 5 inches; pale brown (10YR 6/3) very stony fine sandy loam, brown (10YR 4/3) moist; strong thick platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 30 percent pebbles, 10 percent cobbles, and 5 percent stones; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (2 to 8 inches thick)

Bt—5 to 9 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to strong medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few medium roots; many very fine tubular pores; few thin clay films coating ped faces and common thin clay films lining pores; 30 percent pebbles; mildly alkaline (pH 7.4); clear wavy boundary. (4 to 11 inches thick)

Btk—9 to 11 inches; yellowish brown (10YR 5/4) gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; few thin clay films lining pores and coating ped faces; 30 percent pebbles; common thin lime coatings on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 7.9); abrupt wavy boundary. (2 to 8 inches thick)

2Bqk1—11 to 19 inches; light yellowish brown (10YR 6/4) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; common very fine roots; many very fine tubular pores; 50 percent pebbles and 10 percent cobbles; many thick lime and silica pendants coating rock fragments; fine earth fraction is weakly silica and lime cemented with some strongly cemented masses; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary. (4 to 10 inches thick)

3Bqk2—19 to 30 inches; light yellowish brown (10YR 6/4) very gravelly coarse sand, yellowish brown

(10YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine and fine interstitial pores; 40 percent pebbles and 10 percent cobbles; many thin to thick lime and silica pendants on rock fragments; weakly lime and silica cemented with some strongly cemented masses; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary. (0 to 15 inches thick)

4Bqk3—30 to 60 inches; very pale brown (10YR 7/4) extremely gravelly coarse sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; many very fine and fine interstitial pores; 50 percent pebbles, 15 percent cobbles, and 5 percent stones; lime and silica pendants common on rock fragments; occasional weakly and strongly cemented lenses; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the 2B horizon is 10 to 27 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon has platy structure or is massive. Reaction is moderately alkaline or strongly alkaline. The horizon is slightly effervescent to violently effervescent.

The Bt and Btk horizons have hue of 10YR or 7.5YR, value of 5 to 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is clay loam, sandy clay loam, or loam. Clay content is 20 to 30 percent. The horizon is 10 to 30 percent rock fragments, dominantly pebbles. Reaction is mildly alkaline to strongly alkaline. Lime is present as thin filaments or masses in some pedons.

The 2Bqk horizon has value of 6 to 8 when dry and 5 to 7 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loamy sand, loamy coarse sand, sand, or coarse sand. The horizon is 50 to 90 percent rock fragments. Reaction is moderately alkaline to very strongly alkaline. The horizon is strongly effervescent or violently effervescent. It is hard or very hard when dry, friable or firm when moist, and weakly silica-lime cemented. Pedons that have a friable matrix have 20 to 40 percent durinodes.

The 2Bk horizon has value of 6 to 8 when dry and 5 to 7 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loamy sand, loamy coarse sand, sand, or coarse sand. The horizon is 50 to 90 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. The matrix is noncalcareous, but lime coats the undersides of rock fragments.

Laxal Series

The Laxal series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from various kinds of rock. These soils are on fan piedmonts. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Durorthidic Torriorthents.

Typical pedon: Laxal very gravelly sandy loam in a rangeland area of Laxal-Wardenot-Ardivey association, about 2,100 feet east and 900 feet south of the northwest corner of sec. 18, T. 5 S., R. 43 E.

A—0 to 4 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine, fine, and medium vesicular pores; 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary. (3 to 8 inches thick)

Bqk1—4 to 14 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common very fine, fine, and medium interstitial pores; 45 percent pebbles; common thin lime-silica pendants; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (4 to 16 inches thick)

Bqk2—14 to 34 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, firm, nonsticky and nonplastic; many very fine, fine, and medium roots; common very fine and fine interstitial pores; 50 percent pebbles and 5 percent cobbles; common thin lime-silica coats, common moderately thick lime-silica pendants, and discontinuous weakly lime- and silica-cemented lenses; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (6 to 20 inches thick)

Bqk3—34 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common very fine and fine interstitial and tubular pores; 35 percent pebbles; common thin lime-silica pendants, coatings, and filaments in root channels and pores; discontinuous weakly cemented lenses; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to

59 degrees F. The control section (less than 2 millimeter fraction) is stratified very gravelly fine sandy loam, sandy loam, coarse sandy loam, and loamy coarse sand, commonly with thin strata of sand and clay loam. It averages fine sandy loam, sandy loam, or coarse sandy loam after mixing. It is 35 to 60 percent rock fragments, mainly pebbles. Reaction is strongly alkaline or very strongly alkaline. A buried very gravelly clay loam Bt horizon or pebble layers are below a depth of 40 inches in some pedons. Reaction is strongly effervescent or violently effervescent.

The A horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 3 to 5 when moist, and chroma of 2 or 3 when dry and 2 to 4 when moist. It has platy structure or is massive.

The Bqk horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 3 to 5 when moist, and chroma of 2 or 3 when dry and 2 to 4 when moist. Discontinuous weak silica cementation bridges rock fragments in some strata above a depth of 40 inches. Lime and silica coatings and pendants are common on undersides of rock fragments.

Lazan Series

The Lazan series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and rock pediment remnants. Slopes are 30 to 75 percent. The mean annual precipitation is about 13 inches, and the mean annual temperature is about 49 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic, shallow Typic Xerorthents.

Typical pedon: Lazan very gravelly coarse sand in a woodland area of Lazan-Rock outcrop-Cucamungo association, about 300 feet north and 800 feet east of the southwest corner of sec. 25, T. 6 S., R. 38 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many medium and fine interstitial pores; 50 percent pebbles; mildly alkaline (pH 7.8); abrupt smooth boundary. (1 to 4 inches thick)

A2—2 to 6 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many medium and fine interstitial pores; 55 percent pebbles; slightly effervescent; mildly alkaline (pH 7.8); clear wavy boundary. (3 to 6 inches thick)

Cr—6 inches; decomposed hydrothermally altered granitic rock; strongly effervescent in cracks.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 47 to 50 degrees F. The control section (less than 2 millimeter fraction) is coarse sand, loamy coarse sand, and, in some pedons, thin horizons of coarse sandy loam. Clay content is 3 to 10 percent. The control section is 35 to 60 percent rock fragments, mainly pebbles 2 to 5 millimeters in diameter. Reaction is neutral or mildly alkaline. The control section is noneffervescent or slightly effervescent. Depth to weathered bedrock is 4 to 10 inches.

The A horizon has value of 5 or 6 when dry and 4 or 5 when moist, and it has chroma of 2 to 4 when dry or moist. Structure is single grain or weak and subangular blocky.

Leo Series

The Leo series consists of very deep, excessively drained soils that formed in alluvium derived from tuffaceous rock and small amounts of basalt and related rock. These soils are on alluvial fans, mountain-valley fans, fan piedmonts, and fan skirts. Slopes are 0 to 15 percent. The mean annual precipitation is about 8 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents.

Typical pedon: Leo gravelly sandy loam in a rangeland area of Leo-Koyen association, about 900 feet south and 800 feet east of the northwest corner of sec. 34, T. 4 N., R. 41 E.

A—0 to 4 inches; light brownish gray (10YR 6/2) gravelly sandy loam, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and common fine interstitial pores; 15 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary. (4 to 7 inches thick)

C1—4 to 12 inches; light brownish gray (10YR 6/2) gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine tubular pores and many micro and very fine interstitial pores; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (8 to 12 inches thick)

C2—12 to 16 inches; light brownish gray (10YR 6/2) loamy sand with thin strata of sandy loam, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and common fine interstitial pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (2 to 6 inches thick)

C3—16 to 21 inches; pale brown (10YR 6/3) very gravelly loamy sand with thin strata of sandy loam,

brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine roots; many very fine and common fine and medium interstitial pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (3 to 7 inches thick)

C4—21 to 60 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and common fine and medium interstitial pores; 50 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Soil reaction is moderately alkaline or strongly alkaline. The control section (less than 2 millimeter fraction) averages loamy sand or sand; it includes strata of sandy loam or fine sandy loam in all pedons. Clay content is 0 to 5 percent. The control section is 35 to 55 percent rock fragments, dominantly pebbles. Individual strata range from 10 to 100 percent rock fragments in some pedons.

The A horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It is noneffervescent or slightly effervescent. The horizon is massive or has platy structure.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It includes strata of fine sandy loam or sandy loam, as well as sand, loamy sand, and pebbles in some pedons. The horizon is 35 to 55 percent rock fragments, dominantly pebbles; individual strata range from 10 to 100 percent rock fragments. It is slightly effervescent or strongly effervescent. The horizon is massive or single grain. There is a strong influence from pyroclastic material.

Logring Series

The Logring series consists of very shallow, well drained soils that formed in residuum and colluvium derived from limestone, dolomite, and other highly calcareous sedimentary rocks. These soils are on mountain slopes. Slopes are 15 to 30 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents.

Typical pedon: Logring very gravelly loam in a woodland area of Ubehebe-Logring-Penelas association, about 1,000 feet south and 2,100 feet west of the northeast corner of sec. 7, T. 6 S., R. 40 E.

A—0 to 2 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 45 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (1 to 3 inches thick)

Bw—2 to 7 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots and few coarse roots; common very fine and fine interstitial and tubular pores; 35 percent pebbles and 10 percent cobbles; common thin lime pendants on rock fragments; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (0 to 6 inches thick)

C—7 to 14 inches; pale brown (10YR 6/3) extremely cobbly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; many very fine and fine interstitial and tubular pores; 30 percent pebbles and 30 percent cobbles; common medium lime pendants on rock fragments; violently effervescent; moderately alkaline (pH 8.4); gradual irregular boundary. (5 to 9 inches thick)

R—14 inches; fractured limestone; lime fills fractures.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 47 to 50 degrees F. The control section (less than 2 millimeter fraction) is loam, fine sandy loam, or sandy loam. Clay content is 8 to 18 percent. The control section is 35 to 60 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. The control section is strongly effervescent or violently effervescent throughout and has 40 to 60 percent calcium carbonate equivalent. From 15 to 40 percent finely divided lime is in the upper 7 inches. Organic carbon content is 1.0 to 1.5 percent in the upper 7 inches. Depth to bedrock is 7 to 14 inches.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 to 4.

The Bw horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 2 to 4.

Lomoine Series

The Lomoine series consists of very shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and rock pediments. They have a surface pavement that is 45 percent pebbles, 10 percent

cobbles, and 3 percent stones. Slopes are 30 to 50 percent. The mean annual precipitation is about 8 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Xeric Torriorthents.

Typical pedon: Lomoine very gravelly sandy loam in a rangeland of Lomoine-Pumel-Rock outcrop association, about 500 feet east of the road on a mountain slope, about 500 feet north and 1,400 feet west of the southeast corner of sec. 26, T. 2 N., R. 40 E.

A—0 to 4 inches; grayish brown (10YR 5/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 45 percent pebbles, mostly less than 5 millimeters in diameter, and 10 percent cobbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary. (1 to 5 inches thick)

C—4 to 8 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 45 percent pebbles, mostly less than 5 millimeters in diameter, and 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt irregular boundary. (0 to 9 inches thick)

R—8 inches; fractured granite; occasional thin clay coats on top of the contact and in fractures; few fine and very fine roots in fractures; becomes hard at a depth of 17 inches.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to rock is 3 to 14 inches. The control section (less than 2 millimeter fraction) averages coarse sandy loam or sandy loam. It is 35 to 55 percent rock fragments and has a high percentage of pebbles 2 to 5 millimeters in diameter. Clay content is 8 to 15 percent. Soil reaction is mildly alkaline or moderately alkaline. The control section is slightly effervescent or strongly effervescent in all parts; the calcium carbonate equivalent is 5 percent.

The A horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3.

The C horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is coarse sandy loam or sandy loam. The horizon is 35 to 55 percent rock fragments that include numerous fine (less than 5 millimeters in diameter) pebbles.

The Cr horizon is hard, fractured granite that can be dug with difficulty with a spade.

Louderback Series

The Louderback series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from various kinds of rock. Louderback soils are on alluvial flats and lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Sandy, mixed, mesic Aquic Torriorthents.

Typical pedon: Louderback sand in a rangeland area of Rustigate-Louderback-Cirac association, about 700 feet south and 1,200 feet west of the northeast corner of sec. 25, T. 3 N., R. 39 E.

A—0 to 3 inches; very pale brown (10YR 7/3) sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; many fine interstitial pores and common fine vesicular pores; 10 percent pebbles; slightly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary. (2 to 6 inches thick)

C1—3 to 13 inches; pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and slightly plastic; common fine and medium roots; many very fine and fine interstitial pores; strongly effervescent; very strongly alkaline (pH 9.2); abrupt wavy boundary. (0 to 10 inches thick)

C2—13 to 40 inches; very pale brown (10YR 7/3) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common fine and medium roots; many very fine and fine interstitial pores; 10 percent pebbles; slightly effervescent; very strongly alkaline (pH 9.0); clear smooth boundary. (20 to 30 inches thick)

2C3—40 to 60 inches; light gray (10YR 7/2) very gravelly sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few medium roots; many fine and medium interstitial pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and September because of convection storms. The water table fluctuates between depths of 36 and 60 inches. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages sand or loamy sand. Clay content averages 2 to 10 percent. The control section is slightly effervescent to violently effervescent.

The A horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 or 3. It has platy structure or is single grain.

The C horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. It is massive or single grain.

The 2C horizon, where present, has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. Reaction is moderately alkaline or strongly alkaline.

Luning Series

The Luning series consists of very deep, somewhat excessively drained soils. These soils formed in alluvium derived from mixed sources. Luning soils are on fan piedmonts, fan skirts, and alluvial flats. Slopes are 0 to 8 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Sandy, mixed, mesic Typic Torriorthents.

Typical pedon: Luning gravelly loamy sand in a rangeland area of Itme-Luning-Wardenot association, about 2,200 feet north and 2,200 feet west of the southeast corner of sec. 22, T. 3 S., R. 35 E.

A—0 to 3 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many fine interstitial pores; 25 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.8); abrupt smooth boundary. (3 to 7 inches thick)

C1—3 to 6 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine interstitial and tubular pores; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (2 to 7 inches thick)

C2—6 to 11 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine interstitial and tubular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (3 to 7 inches thick)

C3—11 to 22 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine interstitial and tubular pores; 20 percent pebbles, 5 percent cobbles, and 5 percent stones; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (8 to 12 inches thick)

C4—22 to 36 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; common fine interstitial and tubular pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (10 to 15 inches thick)

2C5—36 to 60 inches; pale brown (10YR 6/3), stratified very gravelly loamy sand to gravelly coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many fine interstitial pores; 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages loamy sand or sand. Clay content is 2 to 8 percent. The control section is 10 to 30 percent rock fragments, dominantly 2 to 5 millimeters in diameter, but some strata have more than 35 percent rock fragments. Reaction is mildly alkaline to strongly alkaline. Discontinuous strata of light sandy loam 0.5 inch to 2.0 inches thick are present in some pedons.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon is massive, single grain, or platy. Reaction is mildly alkaline to strongly alkaline. The horizon is noneffervescent to strongly effervescent.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Texture (less than 2 millimeter fraction) is loamy sand, sand, or coarse sand that includes thin strata of light sandy loam. The horizon is slightly effervescent to violently effervescent. It is massive or subangular blocky.

Lyda Series

The Lyda series consists of very shallow, well drained soils that formed in mixed alluvium derived mainly from volcanic sources. These soils are on fan piedmonts. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Durargids.

Typical pedon: Lyda very gravelly fine sandy loam in a rangeland area of Terlco-Lyda-Lathrop association, about 2,600 feet south and 900 feet east of the northwest corner of sec. 26, T. 5 N., R. 37 E.

A—0 to 1 inch; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many fine and medium vesicular pores; 55 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary. (1 to 3 inches thick)

E—1 to 4 inches; light gray (10YR 7/2) very gravelly silt loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine vesicular pores; 35 percent pebbles; strongly alkaline (pH 8.6); clear smooth boundary. (1 to 4 inches thick)

Bt—4 to 10 inches; pale brown (10YR 6/3) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; few fine tubular pores; 45 percent pebbles; strongly alkaline (pH 8.6); clear smooth boundary. (6 to 10 inches thick)

Btk—10 to 12 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 50 percent pebbles and 5 percent cobbles; lime pendants on undersides of rock fragments; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (1 to 3 inches thick)

Bqkm1—12 to 14 inches; very pale brown (10YR 7/3) indurated duripan with continuous laminar cap, yellowish brown (10YR 5/4) moist; extremely hard, extremely firm; violently effervescent; strongly alkaline (pH 8.8). (1 to 3 inches thick)

Bqkm2—14 to 40 inches; strongly cemented hardpan.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively from July to October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the duripan is 8 to 14 inches. Reaction is strongly alkaline or very strongly alkaline. The control section (less than 2 millimeter fraction) is clay loam or sandy clay loam. Clay content averages 25 to 35 percent. The horizon averages 35 to 50 percent rock fragments, of which 30 to 50 percent is pebbles and 0 to 15 percent is cobbles.

The A and E horizons have value of 6 or 7 when dry and 3 or 4 when moist, and they have chroma of 2 or 3. They have platy or subangular blocky structure or are massive. The horizon is noneffervescent to violently effervescent.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 2 to 4. Clay content is 30 to 40 percent. The horizon is 35 to 50 percent rock fragments.

The Btk horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is sandy clay loam or sandy loam. The horizon is 40 to 60 percent rock fragments. It is strongly effervescent or violently effervescent.

The Bqkm horizon has value of 5 to 8, and it has chroma of 2 to 4. It typically is 24 to 48 inches thick and is indurated in the upper part.

Malmesa Series

The Malmesa series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on mountain slopes, mesas, and hills. Slopes are 2 to 15 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 53 degress F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Durargids.

Typical pedon: Malmesa very cobbly fine sandy loam in a rangeland area of Malmesa-Stewval-Gabbvally association, on Malpais Mesa, south of Pozo Canyon; about 2,000 feet north and 100 feet west of the southeast corner of sec. 15, T. 3 S., R. 42 E.

A—0 to 3 inches; pale brown (10YR 6/3) very cobbly fine sandy loam, dark brown (10YR 3/3) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and coarse vesicular pores; 30 percent pebbles and 20 percent cobbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (1 to 4 inches thick)

Bt—3 to 7 inches; light yellowish brown (10YR 6/4) very cobbly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and medium roots; many very fine tubular and interstitial pores; 20 percent pebbles and 15 percent cobbles; few thin clay films on ped faces and common thin clay films bridging sand grains; noneffervescent; mildly alkaline (pH 7.8); abrupt smooth boundary. (2 to 5 inches thick)

Btk—7 to 11 inches; light yellowish brown (10YR 6/4) very cobbly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and medium roots; many very fine tubular pores; 25 percent cobbles and 25 percent pebbles; few thin clay films lining pores and many moderately thick clay films on pressure faces; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (3 to 12 inches thick)

Bqk—11 to 15 inches; light yellowish brown (10YR 6/4) extremely cobbly loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and slightly plastic; common very fine and medium roots; common very fine tubular pores; 35 percent pebbles and 25 percent cobbles; 10 percent pan fragments and silica pendants on undersides of rock fragments; violently effervescent; strongly alkaline

(pH 8.6); abrupt broken boundary. (2 to 5 inches thick)
Bqkm—15 to 16 inches; indurated laminar cap; silica plugs all fractures. (1 millimeter to 5 centimeters thick)
R—16 inches; fractured basalt.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 52 to 59 degrees F. Depth to the indurated pan is 14 to 20 inches. Depth to bedrock is 14 to 20 inches. The control section (less than 2 millimeter fraction) averages clay loam. Clay content is 27 to 35 percent. The profile is 35 to 50 percent rock fragments, dominantly cobbles and pebbles.

The A horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. It is noneffervescent or slightly effervescent. Reaction is mildly alkaline or moderately alkaline.

The Bt horizon has value of 5 or 6 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is loam or clay loam and includes strata of clay or sandy clay loam in some pedons. The horizon is noneffervescent or slightly effervescent. Reaction is mildly alkaline or moderately alkaline.

The Btk horizon has value of 5 or 6 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is clay loam, but strata of loam, sandy clay loam, or clay are in some pedons. The horizon is strongly effervescent or violently effervescent. Reaction is mildly alkaline or moderately alkaline.

The Bqk horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 4 or 6. Texture (less than 2 millimeter fraction) is loam or sandy loam. Clay content is 10 to 18 percent. The horizon is 45 to 65 percent rock fragments, mainly cobbles and pebbles. It is strongly effervescent or violently effervescent. Reaction is moderately alkaline or strongly alkaline. This horizon commonly has many pan fragments and thick coatings on rock fragments.

The Bqkm horizon commonly consists of a thin laminar cap 1 millimeter to 2 centimeters thick that coats the bedrock.

Mohocken Series

The Mohocken series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from porphyritic latite. These soils are on mountain slopes. Slopes are 8 to 30 percent. The mean annual precipitation is about 15 inches, and the mean annual temperature is about 44 degrees F.

Taxonomic class: Fine, montmorillonitic, frigid Typic Palexerolls.

Typical pedon: Mohocken very gravelly loam in a woodland area of Mohocken-Cucamungo-Ravenswood association, about 2 miles north-northwest of Mohawk Mine, about 200 feet south and 800 feet east of the apparent northwest corner of sec. 25, T. 2 S., R. 37 E.

A1—0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine and fine interstitial and tubular pores; 35 percent pebbles and 10 percent cobbles; mildly alkaline (pH 7.6); clear smooth boundary. (2 to 4 inches thick)
A2—2 to 5 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine and fine interstitial and tubular pores; 25 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary. (2 to 6 inches thick)
A3—5 to 8 inches; yellowish brown (10YR 5/4) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine and fine interstitial pores and few very fine tubular pores; 30 percent pebbles and 5 percent cobbles; neutral (pH 7.0); abrupt smooth boundary. (1 to 3 inches thick)
Bt1—8 to 14 inches; brown (7.5YR 4/4) gravelly clay, brown (7.5YR 4/4) moist; moderate medium and coarse angular blocky structure; very hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; few very fine, fine, and medium interstitial and tubular pores; 15 percent pebbles; continuous moderately thick clay films on ped faces and lining pores; neutral (pH 7.0); clear smooth boundary. (6 to 15 inches thick)
Bt2—14 to 24 inches; brown (7.5YR 5/4) very gravelly sandy clay, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine roots and few fine and medium roots; few very fine interstitial and tubular pores; 35 percent pebbles; common moderately thick clay films and many thin clay films on ped faces and lining pores; neutral (pH 7.0); gradual wavy boundary. (8 to 12 inches thick)
Cr—24 inches; partially weathered latite; very hard, extremely firm; few very fine roots; rock structure.

Range in characteristics

The profile usually is moist in winter and spring and early in summer; it is dry late in summer and in fall, although it is moist intermittently because of convection storms. It is dry in all parts at least 45 consecutive days

following summer solstice. Soil temperature is 44 to 47 degrees F. The mollic epipedon is 7 to 10 inches thick. The control section (less than 2 millimeter fraction) averages clay loam or clay. Clay content is 35 to 50 percent. The control section is 20 to 35 percent rock fragments, mostly 2 to 5 millimeters in diameter. Depth to soft rock is 20 to 30 inches.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 to 4 when dry and 2 or 3 when moist. Structure is weak to moderate, very fine to medium, and subangular blocky. Consistence is soft or slightly hard, very friable or friable, and nonsticky and nonplastic or slightly sticky and slightly plastic. Clay content averages 15 to 25 percent. The horizon averages 35 to 50 percent rock fragments, mostly pebbles. Reaction is neutral or mildly alkaline. An A & B or B & A horizon less than 2 inches thick is present in some pedons.

The Bt1 horizon has hue of 10YR or 7.5YR, value of 4 or 5 when dry and 4 when moist, and chroma of 3 or 4 when moist or dry. Clay content is 40 to 55 percent. The horizon is 15 to 35 percent rock fragments, mostly 2 to 5 millimeters in diameter. Structure is moderate or strong, medium or coarse, and subangular blocky, angular blocky, or prismatic. The horizon is hard or very hard when dry.

The Bt2 horizon has hue of 10YR or 7.5YR, value of 4 to 6 when dry and 3 or 4 when moist, and chroma of 3 or 4 when moist or dry. Texture (less than 2 millimeter fraction) is clay loam, clay, or sandy clay. Clay content is 35 to 45 percent. The horizon is 35 to 45 percent rock fragments. The horizon has weak, fine or medium, and subangular blocky structure or is massive.

Noyson Series

The Noyson series consists of moderately deep, well drained soils that formed in alluvium derived from rhyolite, andesite, and some granite. These soils are on fan piedmonts and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Entic Durorthids.

Typical pedon: Noyson gravelly sandy loam in a rangeland area of Noyson-Lathrop-Itme association, about 500 yards east of an old cemetary; 2,000 feet west and 2,500 feet south of the northeast corner of sec. 14, T. 3 N., R. 40 E.

A1—0 to 1 inch; light gray (10YR 7/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; many very fine interstitial pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 4 inches thick)

A2—1 to 3 inches; light gray (10YR 7/2) gravelly loamy sand, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine vesicular pores; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (1 to 6 inches thick)

Bk—3 to 12 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; common medium interstitial pores and few fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (3 to 12 inches thick)

Bqk1—12 to 25 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; lime and silica pendants on lower surface of the plates; hard, firm, slightly sticky and nonplastic; common very fine and few medium roots matted between the plates; few fine tubular pores; 30 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (5 to 15 inches thick)

Bqk2—25 to 28 inches; very pale brown (10YR 7/3) very gravelly loamy sand, brown (10YR 4/3) moist; moderate thin platy structure; lime and silica pendants on the lower surface of the plates and carbonates disseminated throughout; hard, firm, nonsticky and nonplastic; few very fine and medium roots; few fine tubular pores; 50 percent pebbles; violently effervescent strongly alkaline (pH 9.0); abrupt smooth boundary. (3 to 20 inches thick)

Bqkm—28 to 45 inches; light gray (10YR 7/2) strongly cemented duripan with some discontinuous silica lamella, pale brown (10YR 6/3) moist; white (10YR 8/1) lime coating the underside of pan fragments; massive; very hard, very firm; roots matted horizontally on top of the pan; violently effervescent; very strongly alkaline (pH 9.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the Bqk horizon is 6 to 18 inches. Depth to the duripan is 20 to 36 inches. The control section (less than 2 millimeter fraction) is stratified sand, loamy sand, and sandy loam and is less than 15 percent clay; it averages sandy loam. Content of rock fragments, consisting of pebbles, averages less than 30 percent, but any one horizon can be very gravelly.

The A horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. It is single grain, platy, or massive. Reaction is moderately alkaline or strongly alkaline. The horizon is noneffervescent to strongly effervescent.

The Bk and Bqk horizons have value of 6 or 7 when dry and 3 to 5 when moist, and they have chroma of 2

or 3. They are massive or have platy structure. Reaction is moderately alkaline or strongly alkaline. The horizon is strongly effervescent or violently effervescent.

The Bqkm horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 1 to 3. Content of rock fragments, consisting of pebbles, is 30 percent in some pedons. Consistence is extremely firm or very firm in one or more horizons. Reaction is strongly alkaline or very strongly alkaline.

Nuyobe Series

The Nuyobe series consists of very deep, poorly drained soils that formed in lacustrine sediment derived from various kinds of rock and volcanic ash. These soils are on alluvial flats and lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Aeric Halaquepts.

Typical pedon: Nuyobe silt loam in a rangeland area of Nuyobe-Rustigate-Playas association, about 1,900 feet west and 1,800 feet north of the southeast corner of sec. 27, T. 3 N., R. 39 E.

A1—0 to 4 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and plastic; common fine interstitial pores; very few lime nodules; strongly effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary. (2 to 7 inches thick)

C1—4 to 15 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and plastic; few fine roots; common fine interstitial pores; few lime nodules; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary. (10 to 20 inches thick)

2C2—15 to 60 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, sticky and plastic; few fine roots; few very fine interstitial pores; few lime nodules; strongly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile is saturated in some horizon between depths of 24 and 36 inches for a brief period in most years. The capillary fringe moistens the soil to within 6 inches of the surface. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is stratified very fine sandy loam to silt clay loam; where mixed, it has less than 15 percent sand that is coarser than very fine sand and 18 to 27 percent clay. The sodium absorption ratio is more than 13 and decreases as depth increases below a depth of 20 inches. The control section is strongly effervescent or violently effervescent. It has hue of 10YR, 2.5Y, or 5Y, value of 6 to 8 when dry and 4 to 6 when moist, and chroma of 2 to 4; thin layers of volcanic ash have chroma of 1.

The A horizon is strongly alkaline or very strongly alkaline.

The C horizon is moderately alkaline or strongly alkaline.

Oricto Series

The Oricto series consists of very deep, well drained soils that formed in mixed alluvium derived from rhyolite, andesite, and granodiorite. These soils are on fan piedmonts and beach plains. Slopes are 0 to 8 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 56 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Haplargids.

Typical pedon: Oricto very cobbly fine sandy loam in a rangeland area of Gynelle-Oricto association, about 2,400 feet west and 500 feet south of the apparent northeast corner of sec. 15 in an unsurveyed area of T. 2 N., R. 38 E.

A—0 to 2 inches; light gray (10YR 7/2) very cobbly fine sandy loam, brown (10YR 4/3) moist; moderate coarse prismatic structure; hard, very friable, slightly sticky and slightly plastic; many medium and fine vesicular pores; 25 percent pebbles and 25 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (1 to 4 inches thick)

Bt—2 to 7 inches; very pale brown (10YR 7/3) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, very friable, sticky and plastic; many fine tubular pores; common moderately thick clay films on ped faces and in pores; 30 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary. (3 to 6 inches thick)

Bk—7 to 19 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; common medium and fine roots; many medium and fine interstitial pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (3 to 12 inches thick)

2C1—19 to 27 inches; very pale brown (10YR 7/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few medium and fine roots; many medium and fine interstitial pores; 45 percent pebbles and 15 percent cobbles; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (0 to 20 inches thick)

3C2—27 to 60 inches; light gray (10YR 7/1) very gravelly coarse sand, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many medium and fine pores; 30 percent pebbles and 5 percent cobbles; slightly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 55 to 59 degrees F. Depth to base of the Bt horizon is 6 to 9 inches. The control section (less than 2 millimeter fraction) averages loamy sand or sand. It is 35 to 60 percent rock fragments, mainly pebbles. Reaction is strongly alkaline or very strongly alkaline. Depth to the 2C horizon is 9 to 19 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It is slightly effervescent to violently effervescent. Structure is subangular blocky or prismatic.

The Bt horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is loam or sandy clay loam. The horizon is 35 to 55 percent rock fragments. Clay content is 20 to 27 percent.

The Bk horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. The horizon is 40 to 70 percent rock fragments. It is massive or has subangular blocky structure. The horizon is strongly effervescent or violently effervescent.

The 2C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 1 to 3. Texture (less than 2 millimeter fraction) is stratified coarse sand and loamy sand. The horizon is 40 to 70 percent rock fragments. It is slightly effervescent to violently effervescent.

Orphant Series

The Orphant series consists of shallow, well drained soils that formed in mixed alluvium or in material derived dominantly volcanic rock. These soils are on fan piedmonts and fan skirts. Slopes are 2 to 4 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Haplic Durargids.

Typical pedon: Orphant gravelly sandy loam in a rangeland area of Unsel-Belted-Orphant association, about 2,200 feet south and 2,100 feet west of the northeast corner of sec. 7, T. 3 N., R. 41 E.

A—0 to 2 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 4/3) moist; weak thick platy structure; slightly hard, friable, nonsticky and nonplastic; few very fine roots; many fine and very fine vesicular pores and many very fine interstitial pores; 30 percent pebbles; strongly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary. (1 to 6 inches thick)

E—2 to 5 inches; light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; 10 percent pebbles; strongly effervescent; mildly alkaline (pH 7.8); clear wavy boundary. (2 to 5 inches thick)

Bt—5 to 9 inches; light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; few thin clay films in pores and coating sand grains; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary. (2 to 8 inches thick)

Btqk—9 to 17 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; many very fine interstitial pores; few thin clay films in pores and coating sand grains; 5 percent pebbles; seams of lime and silica pendants on rock fragments; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (2 to 8 inches thick)

Bqkm—17 to 28 inches; white (10YR 8/2) strongly cemented duripan, pale brown (10YR 6/3) moist; massive; very hard, very firm, nonsticky and nonplastic; common very fine and fine roots in pockets; strong continuous cementation; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (4 to 11 inches thick)

2Bqk—28 to 36 inches; white (10YR 8/2) extremely gravelly sand, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots in pockets; 65 percent pebbles and 5 percent cobbles; pockets and coatings of lime; strongly effervescent; mildly alkaline (pH 7.6); clear wavy boundary. (8 to 20 inches thick)

2Bqkm—36 to 60 inches; white (10YR 8/2) strongly cemented duripan, pale brown (10YR 6/3) moist; massive; very hard, very firm, nonsticky and nonplastic; common very fine and fine roots in pockets; violently effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the duripan is 14 to 20 inches.

The control section (less than 2 millimeter fraction) averages heavy fine sandy loam, loam, or sandy clay loam. Clay content is 18 to 25 percent. Rock fragment content averages 0 to 30 percent. The control section is noneffervescent to violently effervescent.

The A horizon has value of 6 or 7 when dry and 3 or 4 when moist, and it has chroma of 2 or 3. Structure is single grain or platy. Reaction is neutral or mildly alkaline.

The E horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 1 to 3. It is massive or has subangular blocky structure. Reaction is neutral or mildly alkaline.

The Bt and Btk horizons have value of 5 to 7 when dry and 4 to 6 when moist, and they have chroma of 2 to 4. Texture (less than 2 millimeter fraction) is heavy fine sandy loam, loam, or sandy clay loam. Clay content is 18 to 25 percent. The horizon is 0 to 30 percent cobbles and pebbles. Structure is prismatic, platy, or subangular blocky. Reaction is mildly alkaline to very strongly alkaline.

The Bqkm horizon has more than one duripan in most pedons. The horizon has platy structure or is massive. Reaction is mildly alkaline to very strongly alkaline.

The 2Bqk horizon has hue of 10YR or 7.5YR, value of 5 to 8 when dry and 3 to 6 when moist, and chroma of 2 to 4. The horizon is massive or single grain.

Orwash Series

The Orwash series consists of very deep, somewhat excessively drained soils that formed in alluvium derived dominantly from granitic material. These soils are on fan skirts and alluvial flats. About 40 percent of the surface is covered with pebbles and 5 percent with cobbles. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 59 degrees F.

Taxonomic class: Sandy, mixed, thermic Typic Torriorthents.

Typical pedon: Orwash gravelly fine sandy loam in a rangeland area of Orwash-Arizo association, about 2,400 feet north and 2,000 feet east of the apparent southwest corner of sec. 32, T. 8 S., R. 43 E.

A1—0 to 3 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular pores; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (1 to 4 inches thick)

A2—3 to 8 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine vesicular and interstitial pores; 20 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (3 to 7 inches thick)

C1—8 to 18 inches; very pale brown (10YR 7/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (0 to 15 inches thick)

C2—18 to 29 inches; very pale brown (10YR 7/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (8 to 12 inches thick)

C3—29 to 60 inches; very pale brown (10YR 7/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 59 to 63 degrees F. The control section (less than 2 millimeter fraction) averages loamy coarse sand or coarse sand. It is 15 to 35 percent pebbles that is mainly 2 is 5 millimeters in diameter. Reaction is moderately alkaline or strongly alkaline. The control section is slightly effervescent to violently effervescent.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is dominantly loamy coarse sand, but thin strata of coarse sandy loam are present in some pedons. Rock fragment content averages 15 to 35 percent, but all pedons have horizons that are 35 to 60 percent rock fragments.

Papoose Series

The Papoose series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on alluvial fans, fan piedmonts, and lake plains. Slopes are 0 to 8 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Typic Haplargids.

Typical pedon: Papoose sandy loam in a rangeland area of Papoose-Izo association, about 200 feet north

and 1,100 feet west of the southeast corner of sec. 19, T. 4 S., R. 42 E.

A1—0 to 3 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 4 inches thick)

A2—3 to 6 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 4 inches thick)

Bt—6 to 11 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine tubular and interstitial pores; 5 percent pebbles; common thin clay films lining pores and bridging sand grains; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (4 to 14 inches thick)

Bk1—11 to 24 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and medium roots; many very fine and fine interstitial pores; 10 percent pebbles; common thin lime pendants on rock fragments; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (8 to 15 inches thick)

Bk2—24 to 36 inches; very pale brown (10YR 7/3) gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine and fine interstitial pores; 15 percent pebbles; common thin lime pendants on rock fragments; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (8 to 14 inches thick)

2C—36 to 60 inches; light yellowish brown (10YR 6/4) very gravelly coarse sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine, fine, medium, and coarse interstitial pores; 55 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The profile is noneffervescent to violently effervescent. Reaction is moderately alkaline or strongly alkaline. The control section (less than 2 millimeter fraction) averages light sandy clay loam, sandy loam, or fine sandy loam. It is 0 to 5 percent rock fragments. Clay content is 18 to 27 percent. Depth to the 2C horizon is 22 to 38 inches. Depth to the base of the Bt horizon is 10 to 20 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. The horizon has platy structure or is massive.

The Bt horizon has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 4 to 6 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) averages light sandy clay loam, sandy loam, or fine sandy loam. Clay content is 18 to 27 percent. The horizon is 0 to 5 percent rock fragments. It has prismatic or subangular blocky structure or is massive.

The Bk horizon has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 4 to 6 when moist, and chroma of 2 to 4. The horizon has subangular blocky granular structure or is massive.

The 2C horizon has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 4 to 6 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loamy sand or coarse sand. The horizon is 15 to 60 percent rock fragments; some strata at a depth of less than 40 inches are 35 to 60 percent rock fragments.

Penelas Series

The Penelas series consists of very shallow, well drained soils that formed in residuum and colluvium derived from soft sedimentary rock. These soils are on mountain slopes and hills. Slopes are 2 to 50 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids.

Typical pedon: Penelas very channery loam in a rangeland area of Entero-Penelas-Rodad association, about 5 miles east of Palmetto Mountain; 800 feet east and 80 feet south of the northwest corner of sec. 29, T. 5 S., R. 41 E.

A—0 to 3 inches; pale brown (10YR 6/3) very channery loam, brown (7.5YR 5/4) moist; moderate thick platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine vesicular pores; 55 percent channery fragments; mildly alkaline (pH 7.6); abrupt smooth boundary. (1 to 4 inches thick)

Bt—3 to 9 inches; dark yellowish brown (10YR 4/4) extremely channery clay loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and plastic; common very fine, fine, and medium roots; many

very fine and fine tubular pores; few thin clay films on ped faces and in pores; 60 percent channery fragments and 5 percent flagstones; mildly alkaline (pH 7.6); abrupt irregular boundary. (3 to 13 inches thick)

Cr—9 inches; platy medisedimentary rock with hardness of less than 3; clay films line fracture planes in upper part.

Range in characteristics

The profile is moist in winter and early in spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is dominantly loam or light clay loam where mixed. It is 60 to 75 percent rock fragments, mainly channery or flaggy fragments. Clay content is 20 to 30 percent. Depth to soft rock is 5 to 14 inches. Reaction is mildly alkaline to strongly alkaline. The control section is dominantly noneffervescent, but it is slightly effervescent in the A1 horizon or has some lime coatings on the shale rocks in some pedons.

The A horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 3 to 5 when moist, and chroma of 2 to 4. The horizon is massive or has very thin to thick and platy structure.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 to 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. The horizon is massive or has moderate to strong, very fine to medium, and angular or subangular blocky structure. Texture is clay loam or silty clay loam that is less than 35 percent clay and less than 35 percent sand.

The Cr horizon consists of bedrock that generally is platy but is massive in some pedons.

Penoyer Series

The Penoyer series consists of very deep, well drained soils that formed in silty alluvium derived from limestone, volcanic rock, and lacustrine sediment. These soils are on flood plains and alluvial fans. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Penoyer silt loam in a rangeland area of Koyen-Stumble-Penoyer association, about 900 feet south and 1,400 feet west of the northeast corner of sec. 25, T. 5 S., R. 37 E.

A1—0 to 2 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and nonplastic; common fine vesicular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (1 to 4 inches thick)

A2—2 to 4 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; many very fine and fine vesicular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (1 to 6 inches thick)

C1—4 to 8 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (2 to 6 inches thick)

C2—8 to 13 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (4 to 8 inches thick)

C3—13 to 22 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (8 to 10 inches thick)

C4—22 to 23 inches; light gray (10YR 7/2) very fine sandy loam, grayish brown (10YR 5/2) moist; massive; hard, friable, nonsticky and nonplastic; common fine roots; common fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (0 to 2 inches thick)

C5—23 to 31 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (7 to 9 inches thick)

C6—31 to 60 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; violently effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is silt loam, but some pedons have strata of very fine sandy loam, loam, or silty clay loam. Clay content is 10 to 18 percent. The control section is strongly effervescent or violently effervescent. Reaction is moderately alkaline to very strongly alkaline. The control section has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 3 to 5 when moist, and chroma of 2 to 4.

Pintwater Series

The Pintwater series consists of shallow, well drained soils that formed in residuum and colluvium derived from rhyolite, tuff, and related rocks. These soils are on mountain slopes, rock pediments, and hills. Slopes are 4 to 75 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents.

Typical pedon: Pintwater very cobbly fine sandy loam in a rangeland area of Downeyville-Pintwater-Rock outcrop association, about 1,000 feet north and 600 feet east of the southwest corner of sec. 33, T. 7 N., R. 38 E.

A—0 to 3 inches; pale brown (10YR 6/3) very cobbly fine sandy loam, brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and very fine roots; many fine and medium vesicular pores; 30 percent pebbles and 20 percent cobbles; strongly effervescent; strongly alkaline (pH 8.0); clear smooth boundary. (3 to 7 inches thick)

Bkq—3 to 11 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine and very fine interstitial pores; 50 percent pebbles and 20 percent cobbles; common thin lime and silica filaments coating undersides of rock fragments; strongly effervescent; moderately alkaline (pH 8.0); clear irregular boundary. (5 to 17 inches thick)

R—11 inches; fractured hard bedrock.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. The control section (less than 2 millimeter fraction) is fine sandy loam or sandy loam. It is 35 to 70 percent rock fragments. Clay content is 10 to 18 percent. Depth to rock is 10 to 20 inches. Reaction is moderately alkaline or strongly alkaline.

The A horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 or 3. The horizon has platy or subangular blocky structure or is massive. The horizon is slightly effervescent to strongly effervescent.

The Bkq horizon is 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is fine sandy loam or sandy loam. The horizon is 45 to 70 percent rock fragments, including stones, cobbles, and pebbles. Lime occurs as pendants or coatings on rock fragments or as soft masses or filaments. The horizon is strongly effervescent or violently effervescent. Silica pendants or coatings are not present in some pedons.

Pumel Series

The Pumel series consists of very shallow, well drained soils that formed in residuum and colluvium derived from granodiorite. These soils are on mountain slopes and hills. Slopes are 8 to 75 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic, shallow Typic Torriorthents.

Typical pedon: Pumel very gravelly sandy loam in a rangeland area of Pumel-Thike-Rock outcrop association, about 2.1 miles west and 2.6 miles south of the northeast corner of T. 5 S., R. 37 E., in an unsurveyed area, about 3,400 feet west-southwest of bench mark 5472.

A—0 to 3 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine and very fine interstitial pores; 50 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (1 to 4 inches thick)

C—3 to 9 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; many fine and very fine interstitial pores; 50 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (0 to 13 inches thick)

Cr—9 inches; weathered and fractured granitic rock; few fine roots in fractures; common discontinuous thin clay coatings and silica and lime coatings in fractures and on the surface of the contact.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is sandy loam or coarse loam. It is 50 to 70 percent rock fragments, mainly pebbles. Depth to soft rock is 4 to 14 inches. Reaction is moderately alkaline or strongly alkaline. The control section is strongly effervescent or violently effervescent.

The A horizon has hue of 10YR or 2.5Y, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 2 or 3. It has platy or granular structure or is massive.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 2 or

3. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. Clay content is 8 to 15 percent. The horizon is 50 to 70 percent rock fragments, dominantly pebbles. It has platy or granular structure or is massive.

Ravenswood Series

The Ravenswood series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from volcanic, metavolcanic, and metamorphic rocks. These soils are on mountain slopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches, and the mean annual temperature is about 44 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, frigid Typic Argixerolls.

Typical pedon: Ravenswood very stony loam in a woodland area of Ravenswood-Brier association, about 300 feet south and 1,300 feet west of the apparent northeast corner of sec. 18, T. 3 S., R. 37 E.

A1—0 to 4 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 15 percent pebbles, 20 percent cobbles, and 2 percent stones; neutral (pH 7.0); clear smooth boundary. (2 to 4 inches thick)

A2—4 to 8 inches; brown (10YR 5/3) gravelly heavy loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine roots and common fine and medium roots; many very fine tubular pores and common very fine and fine interstitial pores; 15 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary. (2 to 7 inches thick)

Bt1—8 to 13 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine, and medium roots; common very fine and fine interstitial and tubular pores; 40 percent pebbles and 5 percent cobbles; few thin clay films on ped faces and lining pores; neutral (pH 7.0); clear smooth boundary. (3 to 8 inches thick)

Bt2—13 to 24 inches; yellowish brown (10YR 5/4) very gravelly heavy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine and fine interstitial and tubular pores; 35 percent pebbles; few moderately thick and common thin clay films on ped faces and lining pores; neutral (pH 7.0); clear wavy boundary. (8 to 19 inches thick)

Bt3—24 to 32 inches; light yellowish brown (10YR 6/4) very gravelly heavy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and slightly plastic; few very fine, fine, and medium roots; few very fine and fine interstitial and tubular pores; 50 percent pebbles and 5 percent cobbles; common thin clay films on ped faces and lining pores; mildly alkaline (pH 7.4); abrupt wavy boundary. (0 to 8 inches thick)

R—32 inches; hard and somewhat fractured basalt.

Range in characteristics

The profile usually is moist in winter, in spring, early in summer, and in fall. It is dry in all parts for at least 45 consecutive days following the summer soltice. Soil temperature is 43 to 47 degrees F; it is more than 41 degrees from May to November. The thickness of the mollic epipedon, which includes the upper part of the argillic horizon, is 10 to 16 inches. Thickness of the solum and depth to unweathered bedrock are 30 to 40 inches. Clay content of the control section is 35 to 50 percent. The profile is 35 to 60 percent rock fragments, mainly pebbles and cobbles. Reaction is slightly acid to mildly alkaline, and it increases as depth increases.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3.

The Bt horizon has hue of 10YR or 7.5YR. It has value of 5 when dry in the upper part and 5 or 6 when dry in the lower part and of 3 when moist in the upper part and 3 to 5 when moist in the lower part. It has chroma of 3 in the upper part and 3 to 6 in the lower part. The upper part of the Bt horizon is very gravelly clay loam, and the lower strata are very gravelly clay or very gravelly clay loam. Structure is angular blocky in the upper part and angular blocky or prismatic in the lower part.

Ravenswood Variant

The Ravenswood Variant consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on mountains. Slopes are 4 to 15 percent. The mean annual precipitation is about 18 inches, and the mean annual air temperature is about 46 degrees F.

Taxonomic class: Fine-loamy, mixed, frigid Typic Argixerolls.

Typical pedon: Ravenswood Variant stony loam in a woodland area of Hiridge-Ravenswood Variant-Rock outcrop association, about 60 feet north and 2,200 feet west of the southeast corner of sec. 32, T. 1 S., R. 34 E.

A—0 to 9 inches; grayish brown (10YR 5/2) stony loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common fine vesicular pores; 15 percent pebbles, 15 percent cobbles, and 2 percent stones; neutral

(pH 7.0); clear smooth boundary. (7 to 11 inches thick)

Bt1—9 to 16 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate fine to medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine roots; common fine tubular pores; 15 percent pebbles and 20 percent cobbles; neutral (pH 7.0); clear smooth boundary. (3 to 10 inches thick)

Bt2—16 to 23 inches; light yellowish brown (10YR 6/4) cobbly clay loam, dark yellowish brown (10YR 4/4) moist; strong fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots; common fine tubular pores; 5 percent pebbles and 10 percent cobbles; neutral (pH 6.9); clear wavy boundary. (6 to 22 inches thick)

Cr—23 inches; weathered andesite.

Range in characteristics

The profile usually is moist in winter and spring and early in summer; it usually is dry in late summer and in fall but is moist intermittently because of convection storms. It is dry in all parts for at least 45 consecutive days following the summer solstice. Soil temperature is 47 to 49 degrees F. The thickness of the mollic epipedon is 10 to 18 inches. Depth to rock is 20 to 40 inches. The control section (less than 2 millimeter fraction) averages loam, sandy clay loam, or clay loam. Clay content averages 25 to 35 percent. Rock fragment content averages 15 to 35 percent.

Rodad Series

The Rodad series consists of very shallow, well drained soils that formed in residuum and colluvium derived from sedimentary rock. These soils are on hills, mountain slopes, and rock pediments. Slopes are 8 to 50 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Haplargids.

Typical pedon: Rodad very channery loam in a rangeland area of Slatery-Rodad association, in the Goldfield Hills; about 2,400 feet south and 900 feet west of the northeast corner of sec. 15, T. 4 S., R. 42 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very channery sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine, fine, and medium interstitial and vesicular pores; 40 percent channery fragments; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (1 to 4 inches thick)

A2—2 to 4 inches; pale brown (10YR 6/3) very channery loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine interstitial and tubular pores; 35 percent channery fragments; slightly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary. (0 to 3 inches thick)

Bt1—4 to 7 inches; pale brown (10YR 6/3) very channery loam, brown (10YR 4/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 40 percent channery fragments; common thin clay films on ped faces and lining pores; few thin lime and silica pendants on rock fragments; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary. (0 to 5 inches thick)

Bt2—7 to 12 inches; light yellowish brown (10YR 6/4) extremely channery clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine, and medium roots; many very fine tubular pores; 60 percent channery fragments; common thin clay films on ped faces and lining pores; common thin lime and silica pendants on rock fragments; strongly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary. (2 to 10 inches thick)

Cr—12 to 20 inches; fractured siltstone; common roots in fractures in upper part.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to soft rock is 4 to 14 inches. The control section averages 27 to 35 percent clay. It is 35 to 60 percent rock fragments, mainly channery fragments and angular pebbles. Reaction is moderately alkaline or strongly alkaline. The control section is slightly effervescent to violently effervescent.

The A horizon has hue of 10YR or 7.5YR, value of 5 to 7 when dry and 4 or 5 when moist, and chroma of 3 or 4.

The Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 3 to 6. Texture (less than 2 millimeter fraction) averages clay loam; strata of clay are common. The horizon is 35 to 60 percent rock fragments. Clay content is 30 to 40 percent. Structure is subangular blocky or granular. Rock structure commonly is retained in the lower part. Lime and silica pendants are present in some pedons.

Roic Series

The Roic series consists of very shallow, well drained soils that formed in residuum and colluvium derived from tuffaceous sandstone, shale, and other hard lacustrine materials. These soils are on rock pediments and hills. Slopes are 2 to 30 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents.

Typical pedon: Roic very gravelly fine sandy loam in a rangeland area of Roic-Oricto-Wardenot association, about 1,800 feet east and 2,800 feet south of the northwest corner of sec. 24, T. 2 N., R. 37 E.

A—0 to 3 inches; yellowish brown (10YR 6/4) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; few fine and very fine roots; common fine and very fine interstitial pores; 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (0.5 to 4.0 inches thick)

C—3 to 8 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine and very fine roots; common fine and very fine interstitial pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (2 to 10 inches thick)

Cr1—8 to 23 inches; light brown (7.5YR 6/4) weathered semiconsolidated lacustrine sediment, brown (7.5YR 4/4) moist; few fine distinct strong brown (7.5YR 5/6) iron mottles; massive; very hard, very firm; common fine roots matted in fracture planes; common fine and very fine pores; few lime pendants on lower surface of plates; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary. (5 to 15 inches thick)

2Cr2—23 to 60 inches; semiconsolidated lacustrine sediment.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. Depth to paralithic contact is 4 to 14 inches. Hue is 7.5YR, 10YR, or 2.5Y, value is 6 or 7 when dry and 4 or 5 when moist, and chroma is 2 to 4. The control section (less than 2 millimeter fraction) is fine sandy loam, very fine sandy loam, or loam and is less than 18 percent clay. Rock fragment content averages less than 35 percent. The control section is noneffervescent to strongly effervescent. Reaction is moderately alkaline or strongly alkaline. The lacustrine material is very firm or extremely firm, has a hardness of less than 3, and can be dug with difficulty with a spade when moist.

The A horizon is platy or massive.

Rustigate Series

The Rustigate series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed sources. These soils are on lake plains and alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Fine-loamy, mixed (calcareous), mesic Aquic Torriorthents.

Typical pedon: Rustigate silt loam in a rangeland area of Rustigate-Nuyobe association, about 100 feet west and 900 feet south of the northeast corner of sec. 23, T. 2 S.,R. 35 E.

A1—0 to 4 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots and common coarse roots; common very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (2 to 5 inches thick)

A2—4 to 11 inches; light yellowish brown (10YR 6/4) silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots and few coarse roots; common fine tubular and interstitial pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (6 to 12 inches thick)

C1—11 to 26 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; slightly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (8 to 15 inches thick)

C2—26 to 34 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (8 to 18 inches thick)

C3—34 to 41 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (7 to 22 inches thick)

C4—41 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. The water table fluctuates between depths of 36 and 60 inches in winter, in spring, and early in summer. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is loam or sandy loam. Clay content averages 18 to 27 percent. The profile is slightly effervescent to violently effervescent.

The A horizon has value of 6 to 8 when dry and 5 or 6 when moist, and it has chroma of 2 to 4. The horizon has platy or granular structure or is massive. Reaction is moderately alkaline to very strongly alkaline.

The C horizon has value of 6 to 8 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. Reaction is moderately alkaline or strongly alkaline.

Scottcas Series

The Scottcas series consists of very deep, well drained soils that formed in mixed alluvium derived mainly from volcanic tuff. These soils are on fan piedmonts. Slopes are 4 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 59 degrees F.

Taxonomic class: Loamy-skeletal, mixed, thermic Duric Haplargids.

Typical pedon: Scottcas very gravelly sandy loam in a rangeland area of Scottcas-Skelon-Yermo association, about 1,500 feet south and 1,100 feet east of the apparent northwest corner of sec. 26, T. 10 S., R. 42 E.

A—0 to 3 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine and fine vesicular pores; 40 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (2 to 4 inches thick)

Bt—3 to 9 inches; light brown (7.5YR 6/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; few very fine and fine interstitial and tubular pores; 35 percent pebbles; common thin clay films on faces of peds; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (4 to 7 inches thick)

Bqk1—9 to 18 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial pores; 60 percent pebbles and 10 percent durinodes; discontinuous cementation; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (7 to 9 inches thick)

Bqk2—18 to 28 inches; white (10YR 8/2) very gravelly loamy coarse sand, brown (10YR 7/3) moist; massive; very hard, very firm (brittle); 50 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary. (6 to 10 inches thick)

Bqk3—28 to 60 inches; very pale brown (10YR 7/3) extremely gravelly loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; 70 percent pebbles; few thin duric layers; discontinuous cementation; lime coating undersides of most pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 59 to 64 degrees F. Depth to a discontinuous cemented layer is 10 to 20 inches. Clay content of the control section averages 7 to 15 percent. The control section averages 60 to 75 percent rock fragments, mostly pebbles.

The A horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. Structure is platy, granular, or prismatic. The horizon is slightly effervescent or strongly effervescent.

The Bt horizon has hue of 5YR or 7.5YR, value of 5 or 6 when dry and 4 or 5 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is clay loam, loam, or sandy clay loam. Clay content is 20 to 30 percent. The horizon is 35 to 60 percent rock fragments, mostly pebbles. Depth to the lower boundary of the Bt horizon is 6 to 10 inches. The horizon is slightly effervescent or strongly effervescent.

The Bqk1 horizon has hue of 5YR, 7.5YR, or 10YR, value of 6 or 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. Clay content is 5 to 15 percent. The horizon is 60 to 85 percent rock fragments, mostly pebbles. The horizon is strongly effervescent or violently effervescent.

The Bqk2 horizon has value of 7 or 8 when dry and 6 or 7 when moist, and it has chroma of 2 to 4. Discontinuous, weakly to strongly silica-lime cemented plates and lenses make up about 50 to 75 percent of the horizon by volume. The horizon is 40 to 60 percent rock fragments. Reaction is strongly alkaline or very strongly alkaline.

The Bqk3 horizon has value of 6 or 7 when dry and 5 or 6 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is stratified sandy loam, loamy sand, coarse sandy loam, and loamy coarse sand. Clay content is 4 to 10 percent. The horizon is 55 to 85 percent rock fragments, mostly pebbles. Some pedons have weakly silica-lime cemented strata. Reaction is

strongly alkaline or very strongly alkaline. The horizon is strongly effervescent or violently effervescent.

Scottcas Variant

The Scottcas Variant consists of very shallow, well drained soils that formed in mixed alluvium. These soils are on partial ballenas. Slopes are 4 to 30 percent. The mean annual precipitation is about 8 inches, and the mean annual air temperature is about 58 degrees F.

Taxonomic class: Loamy-skeletal, mixed, thermic, shallow Haplic Durargids.

Typical pedon: Scottcas Variant very gravelly sandy loam, 4 to 30 percent slopes, about 6 miles east of Scotty's Castle, California; about 500 feet north and 500 feet west of the apparent southeast corner of sec. 26, T. 10 S., R. 42 E.

A1—0 to 1 inch; grayish brown (10YR 5/2) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine vesicular and interstitial pores; 40 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (0.5 to 2.0 inches thick)

A2—1 to 3 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial and tubular pores; 35 percent pebbles; strongly effervescent; moderately alkaline (ph 8.4); clear smooth boundary. (1 to 3 inches thick)

Bt—3 to 8 inches; light brown (7.5YR 6/4) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine roots and common fine and medium roots; common very fine and fine interstitial pores; 50 percent pebbles and 5 percent cobbles; few lime pendants on undersides of pebbles; few thin clay films on ped faces and lining pores; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (4 to 7 inches thick)

Bqk—8 to 12 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 45 percent pebbles and 5 percent cobbles; thin discontinuous weak cementation; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary. (2 to 5 inches thick)

Bqkm—12 to 60 inches; strongly cemented continuous duripan; discontinuous thin indurated laminar cap; few thin weakly cemented discontinuous strata of loamy sand; massive; very hard, very firm, nonsticky and nonplastic; few fine roots; violently effervescent.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 59 to 62 degrees F. Depth to the continuous, strongly cemented hardpan is 8 to 14 inches. The control section (less than 2 millimeter fraction) averages loam. Clay content averages 10 to 20 percent. Rock fragment content averages 35 to 60 percent. The control section is slightly effervescent to violently effervescent.

Settlement Series

The Settlement series consists of very deep, poorly drained soils that formed in alluvium derived from mixed sources. These soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Aeric Halaquepts.

Typical pedon: Settlement clay in a rangeland area of Settlement-Aquic Calciorthids association, about 1,200 feet south and 800 feet west of the northeast corner of sec. 29, T. 1 S., R. 36 E.

A—0 to 2 inches; very pale brown (10YR 7/3) clay, grayish brown (10YR 5/2) moist; strong thick platy structure parting to strong medium subangular blocky; very hard, very firm, sticky and plastic; many very fine and medium roots and common coarse roots; common very fine and fine tubular pores; strongly effervescent; strongly alkaline (pH 8.5); abrupt smooth boundary. (1 to 3 inches thick)

Bw—2 to 11 inches; light brownish gray (10YR 6/2) silty clay, dark brown (7.5YR 4/2) moist; moderate medium prismatic structure; very hard, very firm, sticky and plastic; common very fine and fine roots; common very fine and fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary. (6 to 9 inches thick)

Bk1—11 to 28 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 4/4) moist; massive; very hard, very firm, sticky and plastic; few fine and very fine roots; few fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary. (15 to 21 inches thick)

Bk2—28 to 42 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 4/4) moist; massive; very hard, very firm, sticky and plastic; few fine roots; few fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary. (12 to 16 inches thick)

C—42 to 60 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 4/4) moist; massive; very hard, very firm, sticky and plastic; slightly effervescent; very strongly alkaline (pH 9.6).

Range in characteristics

The profile usually is moist in winter and spring and early in summer and for 10 to 20 days cumulatively between July and October because of convection storms; it is dry late in summer and in fall. The water table is at a depth of 12 to 36 inches late in winter and early in spring, and it drops below a depth of 60 inches late in summer and in fall. Soil temperature is 53 to 59 degrees F. Depth to the Bk horizon is 10 to 18 inches. The control section (less than 2 millimeter fraction) averages clay or silty clay. Clay content is 45 to 60 percent. The profile is slightly effervescent to violently effervescent.

The A horizon has value of 6 to 8 when dry and 5 or 6 when moist, and it has chroma of 2 to 4. Structure is weak to medium and platy or subangular blocky. Reaction is moderately alkaline or strongly alkaline.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 to 8 when dry and 4 to 6 when moist, and chroma of 2 to 4. Structure is weak to strong and subangular blocky or prismatic. Reaction is strongly alkaline or very strongly alkaline.

The Bk horizon has hue of 10YR or 7.5YR, value of 5 to 7 when dry and 4 to 6 when moist, and chroma of 3 or 4. The horizon is massive or has subangular blocky or prismatic structure. Reaction is moderately alkaline to very strongly alkaline.

Silverbow Series

The Silverbow series consists of very shallow, well drained soils that formed in colluvium and alluvium derived from basalt and related rocks. These soils are on alluvial fans, fan piedmonts, ballenas, and hills. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Durargids.

Typical pedon: Silverbow very stony fine sandy loam in a rangeland area of Unsel-Silverbow-Izo association, about 600 feet west and 700 feet south of the northeast corner of sec. 18, T. 2 N., R. 42 E.

A—0 to 2 inches; light brownish gray (10YR 6/2) very stony fine sandy loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many fine and very fine interstitial pores; 30 percent pebbles, 15 percent cobbles, and 3 percent stones; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (2 to 4 inches thick)

Bt—2 to 6 inches; light yellowish brown (10YR 6/4) very cobbly clay loam, brown (10YR 4/3) moist; moderate medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, sticky and plastic; common medium and fine roots; common fine interstitial and tubular pores; 30 percent pebbles and 20 percent cobbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (4 to 7 inches thick)

Btk—6 to 10 inches; light yellowish brown (10YR 6/4) very cobbly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common medium and fine roots and few very fine roots; common fine interstitial and tubular pores; 30 percent pebbles and 25 percent cobbles; common moderately thick clay films on ped faces and in pores; distinct carbonate pendants on lower surface of coarse fragments; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary. (2 to 7 inches thick)

Bqkm—10 to 18 inches; white (10YR 8/2) indurated duripan, light gray (10YR 7/2) moist; massive; extremely hard, extremely firm; common fine and very fine roots matted on top and in horizontal fracture plates; continuous laminar cap; 30 percent pebbles, 30 percent cobbles, and 10 percent stones; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary. (2 to 8 inches thick)

Bqk—18 to 40 inches; weakly to strongly cemented hardpan.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Solum thickness and depth to the duripan are 8 to 14 inches. The control section (less than 2 millimeter fraction) is clay loam or sandy clay loam. Clay content is 20 to 35 percent. The control section is 50 to 70 percent rock fragments, dominantly stones or cobbles. Reaction is moderately alkaline or strongly alkaline. Some pedons have strongly cemented layers below the indurated duripan.

The A horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3. The horizon has granular or platy structure or is massive. It is noneffervescent to strongly effervescent.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 3 or 4. Texture (less than 2 millimeter fraction) is clay loam or sandy clay loam. The horizon is 50 to 70 percent rock fragments, dominantly stones or cobbles. It is slightly effervescent or strongly effervescent.

The Btk horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 3 or 4. Texture (less

than 2 millimeter fraction) is clay loam or sandy clay loam. The horizon is 50 to 70 percent rock fragments, mainly cobbles or stones. It is slightly effervescent to violently effervescent. Secondary lime occurs as soft masses or filaments and as concretions in some pedons.

Skelon Series

The Skelon series consists of moderately deep, well drained soils that formed in alluvium derived primarily from limestone, basalt, shale, quartzite, and obsidian. These soils are on alluvial fans and fan piedmonts. Slopes are 2 to 15 percent. The mean annual precipitation is about 4 inches, and the mean annual air temperature is about 58 degrees F.

Taxonomic class: Loamy-skeletal, mixed, thermic Typic Durorthids.

Typical pedon: Skelon very gravelly sandy loam in a rangeland area of Skelon-Yermo-Arizo association, about 2,300 feet north and 2,000 feet east of the apparent southwest corner of sec. 5, T. 10 S., R. 42 E.

A—0 to 3 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common fine and medium vesicular pores; 50 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 6 inches thick)

Bw—3 to 9 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular and interstitial pores; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (6 to 10 inches thick)

Bqk1—9 to 16 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial pores; 45 percent pebbles; few thin discontinuous layers of weakly silica-cemented material; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (6 to 12 inches thick)

Bqk2—16 to 23 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 3/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; very faint lime coatings in some fractures and pores; 45 percent pebbles; many thin lime coats on undersides of pebbles; few thin discontinuous layers of weakly silica-cemented material; strongly effervescent; strongly alkaline (pH 9.0); abrupt wavy boundary. (6 to 14 inches thick)

Bqkm—23 to 40 inches; indurated continuous massive duripan; moderately thick laminar cap; very gravelly; strongly cemented between lamella.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July to October because of convection storms. Soil temperature is 59 to 63 degrees F. The control section (less than 2 millimeter fraction) averages coarse sandy loam, sandy loam, or fine sandy loam. Clay content is 3 to 10 percent. The control section is 35 to 60 percent rock fragments, mostly pebbles. Depth to the duripan is 20 to 40 inches.

The A horizon has value of 6 or 7 when dry and 3 to 6 when moist, and it has chroma of 2 or 3 when dry and 3 or 4 when moist. The horizon is strongly effervescent or violently effervescent.

The Bw, Bqk1, and Bqk2 horizons have value of 6 to 8 when dry and 3 to 7 when moist, and they have chroma of 2 to 4 when dry and 3 to 6 when moist. Texture is fine sandy loam or coarse sandy loam. Content of rock fragments (weighted average), mostly pebbles, is 35 to 60 percent. Reaction is mildly alkaline to strongly alkaline. These horizons are strongly effervescent or violently effervescent.

Slatery Series

The Slatery series consists of very shallow, well drained soils that formed in residuum and colluvium derived from siltstone and related sedimentary rocks. These soils are on hills and mountain slopes. About 65 percent of the surface is covered with pebbles and 15 percent with cobbles. Slopes are 8 to 50 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents.

Typical pedon: Rangeland area of Slatery very gravelly loam, 8 to 30 percent slopes, about 1,300 feet south and 1,900 feet east of the northwest corner of sec. 36, T. 7 S., R. 41 1/2 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular pores; 45 percent pebbles and 10 percent cobbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (1 to 4 inches thick)

A2—2 to 6 inches; pale brown (10YR 6/3) gravelly loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and common fine interstitial pores; 20 percent hard pebbles, 20 percent soft flat pebbles that break down upon wetting, and 5 percent cobbles; strongly

effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (0 to 6 inches thick)

Bk—6 to 10 inches; light gray (10YR 7/2) gravelly loam, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine and fine interstitial pores; 20 percent hard pebbles, 25 percent soft flat pebbles that break down upon wetting, and 5 percent cobbles; many thin lime filaments coating undersides of pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (3 to 5 inches thick)

Cr—10 inches; highly fractured siltstone; many lime coatings on surface of fragments.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to paralithic contact is 4 to 12 inches. The control section (less than 2 millimeter fraction) averages loam. It is 15 to 35 percent rock fragments after wetting and 35 to 50 percent before wetting. Clay content is 10 to 18 percent.

The A horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3. Structure is platy or subangular blocky. The horizon is slightly effervescent or strongly effervescent.

The Bk horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon is massive or has subangular blocky structure. The horizon is strongly effervescent or violently effervescent.

Slaw Series

The Slaw series consists of very deep, well drained soils that formed in alluvium derived from mixed sources. These soils are on alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches, and the mean annual air temperature is about 53 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Typic Torrifluvents.

Typical pedon: Slaw loam in a rangeland area of Slaw-Playas complex, about 1,800 feet south and 2,500 feet west of the northeast corner of sec. 30, R. 37 1/2 E., T. 6 N.

A1—0 to 2 inches; very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many fine interstitial pores; violently effervescent; strongly alkaline (pH 8.5) clear smooth boundary. (2 to 5 inches thick)

A2—2 to 8 inches; very pale brown (10YR 7/3) silt loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure parting to weak medium platy; slightly hard, friable, slightly sticky and nonplastic; few very fine roots; common fine interstitial pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (3 to 7 inches thick)

C1—8 to 15 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores; violently effervescent; strongly alkaline (pH 8.7); clear smooth boundary. (3 to 8 inches thick)

2C2—15 to 20 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; few fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (4 to 7 inches thick)

3C3—22 to 38 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (15 to 26 inches thick)

3C4—38 to 60 inches; light yellowish brown (10YR 6/4), stratified very fine sandy loam to silty clay loam, brown (10YR 4/3) moist; soft, very friable, sticky to nonsticky and slightly plastic to nonplastic; few fine roots; few fine tubular pores; violently effervescent; strongly alkaline (pH 9.0).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. The control section (less than 2 millimeter fraction) is light silty clay loam or silt loam. Clay content is 18 to 35 percent. Calcium carbonate equivalent is 1 to 4 percent. Organic matter content decreases irregularly as depth increases.

The A horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. Structure is platy, blocky, or granular. Reaction is strongly alkaline or very strongly alkaline. The horizon is slightly effervescent to violently effervescent.

The C horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. The horizon has subangular blocky or platy structure or is massive. Reaction is strongly alkaline or very strongly alkaline. The horizon is strongly effervescent or violently effervescent.

Sodaspring Series

The Sodaspring series consists of very deep, well drained soils that formed in alluvium derived from various

kinds of rock. These soils are on fan piedmonts. Slopes are 2 to 4 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 54 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Sodaspring loamy sand in a rangeland area of Sodaspring-Izo association, about 800 feet south and 200 feet west of the northeast corner sec. 24, T. 6 N., R. 37 E.

A—0 to 3 inches; light brownish gray (10YR 6/2) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (1 to 6 inches thick)

C1—3 to 6 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine interstitial pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (2 to 5 inches thick)

C2—6 to 10 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (3 to 5 inches thick)

C3—10 to 17 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine tubular pores; 5 percent pebbles and 5 percent cobbles; few thin carbonates on underside of rock fragments; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (5 to 11 inches thick)

2C4—17 to 19 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine tubular pores; 45 percent pebbles and 5 percent cobbles; few thin lime coatings on underside of rock fragments; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (1 to 4 inches thick)

3C5—19 to 31 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (10 to 15 inches thick)

4C6—31 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine interstitial pores; 30 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods during winter and early in spring and for 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages coarse sandy loam. Clay content averages 10 to 18 percent, but individual horizons range from 6 to 18 percent clay. Rock fragment content averages 15 to 35 percent, but some strata have as much as 60 percent rock fragments in some pedons; more than 50 percent of the rock fragments are pebbles 2 to 5 millimeters in diameter. Reaction is moderately alkaline to very strongly alkaline. Electrical conductivity is 4 to 16 millimhos per centimeter. Sodium adsorption ratio is 30 to 50. The control section is slightly effervescent to violently effervescent throughout.

The A horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 to 4 when dry or moist. It is massive or single grain.

The C horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 3 or 4 when dry or moist. Texture is very gravelly coarse sand to sandy loam but averages gravelly coarse sandy loam. The horizon is massive or has subangular blocky or platy structure.

Squawtip Series

The Squawtip series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on mountain slopes and hills. Slopes are 15 to 75 percent. The mean annual precipitation is about 14 inches, and the mean annual air temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Typic Argixerolls.

Typical pedon: Squawtip very stony loam in a woodland area of Squawtip-Gabbvally-Rock outcrop association, about 250 feet north and 400 feet west of the southeast corner of sec. 10, T. 1 N., R. 33 E.

O—1 inch to 0; pinyon needle duff.

A1—0 to 4 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few fine roots; many fine interstitial pores and few fine vesicular pores; 10 percent pebbles, 25 percent cobbles, and 3 percent stones; neutral (pH 7.2); clear smooth boundary. (2 to 6 inches thick)

A2—4 to 10 inches; brown (10YR 5/3) cobbly loam, dark brown (10YR 3/3) moist; weak coarse subangular

blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common fine tubular pores; 5 percent pebbles and 20 percent cobbles; neutral (pH 7.2); clear smooth boundary. (4 to 7 inches thick)

Bt1—10 to 18 inches; yellowish brown (10YR 5/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; few thin clay films on ped faces and lining pores; 20 percent pebbles and 20 percent cobbles; neutral (pH 7.2); clear smooth boundary. (4 to 15 inches thick)

Bt2—18 to 24 inches; light yellowish brown (10YR 6/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; strong fine subangular blocky structure; hard, firm, sticky and slightly plastic; common moderately thick clay films on ped faces and lining pores; 25 percent pebbles and 25 percent cobbles; neutral (pH 7.2); clear wavy boundary. (5 to 25 inches thick)

Cr—24 inches; weathered andesitic tuff.

Range in characteristics

The profile usually is moist in winter, spring, and fall and is dry for at least 45 consecutive days following the summer solstice. Soil temperature is 43 to 47 degrees F. Depth to soft rock is 20 to 40 inches. Depth to hard rock is more than 40 inches. The control section is 18 to 25 percent clay. It is 35 to 60 percent rock fragments. Thickness of the mollic epipedon is 10 to 18 inches.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3. Reaction is slightly acid or neutral.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is loam, heavy sandy loam, or sandy clay loam. Reaction is neutral or mildly alkaline.

Stargo Series

The Stargo series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from various kinds of rock. These soils are on flood plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy, mixed, mesic Durorthidic Torrifluvents.

Typical pedon: Stargo loam in a rangeland area of Stargo-Playas association, about 1,200 feet south and 300 feet west of the northeast corner of sec. 7, T. 6 S., R. 43 E.

A1—0 to 1 inch; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine, fine, and medium vesicular pores; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (0 to 4 inches thick)

A2—1 to 4 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine, fine, medium, and coarse vesicular pores; many thin clay films bridging sand grains; few thin clay films lining pores; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 5 inches thick)

C1—4 to 10 inches; light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate thick platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial pores; many thin clay films bridging sand grains; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (4 to 7 inches thick)

C2—10 to 13 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable; nonsticky and nonplastic; many very fine and fine roots; many very fine interstitial and tubular pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (2 to 6 inches thick)

Bqk—13 to 60 inches; very pale brown (10YR 7/3), stratified sandy loam to very gravelly sand, brown (10YR 5/3) moist; massive; very hard, firm, brittle, nonsticky and nonplastic; few very fine tubular pores; 10 percent pebbles; 40 percent weakly cemented durinodes; common thin lime coatings on durinodes; strongly effervescent; strongly alkaline (pH 8.8)

Range in characteristics

The profile usually is moist in some part for short periods in winter and spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages light loamy sand or sand but includes strata of sand, loamy sand, loamy fine sand, and sandy loam. Rock fragment content averages less than 15 percent, but there are thin strata consisting of 15 to 35 percent pebbles in some pedons. Reaction is mildly alkaline to strongly alkaline. The control section is noneffervescent to strongly effervescent. Organic matter content decreases irregularly as depth increases.

The A horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 2 to 4. Organic matter content varies irregularly with depth.

The C horizon has prismatic or platy structure or is massive.

Stewval Series

The Stewval series consists of very shallow, well drained soils that formed in residuum and colluvium derived from rhyolite and related rock. These soils are on hills, mountain slopes, mesas, and rock pediments. Slopes are 8 to 50 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids.

Typical pedon: Stewval very stony fine sandy loam in a rangeland area of Stewval-Downeyville-Rock outcrop association, about 2,400 feet north and 1,000 feet east of the southwest corner of sec. 19, T. 2 N., R. 43 E.

A—0 to 1 inch; brown (10YR 5/3) very stony fine sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; many very fine vesicular pores; 30 percent pebbles, 15 percent cobbles, and 3 percent stones; slightly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary. (1 to 3 inches thick)

Bt—1 to 7 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine tubular pores; common thin clay films lining pores and coating ped faces; 40 percent pebbles, 10 percent cobbles, and 5 percent stones; few thin lime and silica pendants on rock fragments; slightly effervescent; mildly alkaline (pH 7.6); clear wavy boundary. (3 to 7 inches thick)

R—7 inches; fractured rhyolite; common thin lime and silica coatings on fracture planes and capping the surface; few fine roots; becomes hard at a depth of 13 inches.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages loam or sandy loam. It is 35 to 55 percent pebbles, 0 to 10 percent cobbles, and 0 to 15 percent stones. Clay content is 18 to 27 percent. Depth to bedrock is 4 to 14 inches. Reaction is mildly alkaline or moderately alkaline. The control section is slightly effervescent to violently effervescent.

The A horizon has hue of 10YR or 7.5YR, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 2 or 3. Structure is platy or subangular blocky.

The Bt horizon has hue of 10YR, 7.5YR, or 5YR, value of 5 or 6 when dry and 3 or 4 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loam or light clay loam. Structure is subangular blocky or granular. Silica and line pendants are on rock fragments in some pedons.

Stonell Series

The Stonell series consists of very deep, well drained soils that formed in alluvium derived from various kinds of rock, including volcanic tuff and sedimentary rock. These soils are on erosional fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Typic Haplargids.

Typical pedon: Stonell very gravelly fine sandy loam in a rangeland area of Wardenot-Gynelle-Stonell association, about 50 feet west and 90 feet north of the apparent southeast corner of sec. 7, T. 1 S., R. 40 E.

A—0 to 1 inch; light brownish gray (10YR 6/2) very gravelly sand, grayish brown (10YR 5/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.5); abrupt smooth boundary. (0 to 2 inches thick)

A2—1 to 5 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, grayish brown (10YR 5/2) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary. (2 to 5 inches thick)

Btk—5 to 10 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots and common medium and coarse roots; common very fine and fine tubular pores; few thin clay films lining pores; 45 percent pebbles; few thin lime coatings on undersides of rock fragments; violently effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary. (4 to 7 inches thick)

Bqk1—10 to 20 inches; pale brown (10YR 6/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine tubular and interstitial pores; 45 percent pebbles and 5 percent cobbles; common thin pendants coating undersides of rock fragments; discontinuous weak cementation in lower part of horizon; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary. (5 to 15 inches thick)

Bqk2—20 to 60 inches; light gray (10YR 7/2), stratified extremely gravelly coarse sand to very gravelly sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; many very fine and fine interstitial pores; 50 percent pebbles and 5 percent cobbles; few very thin (less than 1 inch) discontinuous silica- and lime-cemented lenses; violently effervescent; strongly alkaline (pH 8.6)

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Clay content of the control section 7 to 12 percent. The control section is 35 to 55 percent rock fragments, mostly pebbles. It is strongly effervescent or violently effervescent. Depth to the lower boundary of the Bt horizon is 6 to 10 inches.

The A horizon has value of 6 or 7 when dry and 5 or 6 when moist, and it has chroma of 2 to 4. Structure is platy or granular. Reaction is moderately alkaline or strongly alkaline.

The Btk horizon has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 4 to 6 when moist, and chroma of 2 to 4 when moist or dry. Texture (less than 2 millimeter fraction) is sandy clay loam, clay loam, or loam. Clay content is 20 to 30 percent. The horizon is 35 to 60 percent rock fragments, mostly pebbles. It has subangular blocky structure or is massive. Reaction is moderately alkaline or strongly alkaline.

The Bqk horizon has value of 6 to 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4 when moist or dry. Texture is stratified very gravelly sandy loam to very gravelly loamy sand. Clay content is 5 to 10 percent. Reaction is strongly alkaline or very strongly alkaline.

Stumble Series

The Stumble series consists of very deep, somewhat excessively drained soils that formed in mixed sandy alluvium. These soils are on fan skirts, fan piedmonts, alluvial flats, alluvial fans, and sand sheets. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Mixed, mesic Typic Torripsamments.

Typical pedon: Rangeland area of Stumble loamy fine sand, 0 to 4 percent slopes, about 1,200 feet south and 1,600 feet east of the northwest corner of sec. 27, T. 4 N., R. 41 E.

A—0 to 4 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary. (4 to 7 inches thick)

C1—4 to 10 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and medium roots; common very fine and fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary. (5 to 17 inches thick)

Bk—10 to 21 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; common fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (8 to 15 inches thick)

C—21 to 60 inches; pale brown (10YR 6/3) gravelly loamy fine sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common fine roots; common fine interstitial pores; 15 percent pebbles and 5 percent cobbles; carbonates on rock fragments; strongly effervescent to violently effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is loamy sand or loamy fine sand and has strata of fine sand and sand. It is as much as 35 percent rock fragments, dominantly pebbles.

The A horizon is neutral to moderately alkaline.

The Bk horizon is slightly effervescent or strongly effervescent.

The C horizon is slightly effervescent to violently effervescent. Reaction is moderately alkaline or strongly alkaline. The horizon has value of 5.5 to 7 when dry and 3.5 to 5 when moist, and it has chroma of 2 or 3. The finer textured layers are at a depth of more than 40 inches in some pedons. The horizon is single grain, subangular blocky, or massive.

Sylvaniam Series

The Sylvaniam series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from dolomite, limestone, and other highly calcareous sedimentary rocks. These soils are on mountain side slopes and ridges. About 40 percent of the surface is covered with pebbles and 5 percent with cobbles. Slopes are 30 to 50 percent. The mean annual precipitation is about 14 inches, and the mean annual temperature is about 45 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, frigid Typic Calcixerolls.

Typical pedon: Sylvaniam gravelly loam in a woodland area of Trailamp-Sylvaniam association, about 1 mile southeast of Lida Summit, about 800 feet west and 550 feet south of the northeast corner of sec. 17, T. 6 S., R. 40 E.

A1—0 to 3 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; few fine and medium roots and many very fine roots; common medium and fine pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (3 to 8 inches thick)

A2—3 to 11 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; few coarse roots and many medium, fine, and very fine roots; common medium and fine tubular pores; 20 percent pebbles; common thin lime pendants on undersides of rock fragments; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (0 to 10 inches thick)

Bw1—11 to 17 inches; yellowish brown (10YR 5/4) very gravelly fine sandy loam, dark brown (10YR 3/3) moist; strong medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common coarse roots and many medium and fine roots; few medium and fine tubular pores; 50 percent pebbles; very few moderately thick lime pendants on undersides of rock fragments; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (5 to 10 inches thick)

Bw2—17 to 26 inches; yellowish brown (10YR 5/4) very gravelly loam, brown (10YR 4/3) moist; strong medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common coarse roots and many medium and fine roots; few medium tubular pores; 45 percent pebbles; few moderately thick lime pendants coating rock fragments; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (8 to 15 inches thick)

Bk—26 to 32 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few coarse, medium, and fine roots; few medium and fine tubular and interstitial pores; 45 percent pebbles; common moderately thick lime pendants on undersides of rock fragments; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (6 to 10 inches thick)

R—32 inches; hard limestone.

Range in characteristics

The profile usually is moist in winter and spring and early in summer; it usually is dry late in summer and in fall but is moist intermittently because of convection storms. The profile is dry in all parts for at least 45 consecutive days following the summer solstice. Soil temperature is 45 to 47 degrees F. Mollic epipedon is 12 to 17 inches thick. The control section (less than 2 millimeter fraction) is loam and fine sandy loam. It is 35 to 55 percent rock fragments. Clay content is 15 to 25 percent. Reaction is moderately alkaline or strongly alkaline. The calcium carbonate equivalent is 40 to 60 percent.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3. Structure is subangular blocky or granular. The horizon is slightly effervescent or strongly effervescent.

The Bw1 horizon has chroma of 3 or 4 when dry. Structure is moderate or strong and subangular blocky. The horizon is slightly effervescent or strongly effervescent.

The Bw2 horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4 when moist or dry. Structure is moderate or strong and subangular blocky. The horizon is slightly effervescent or strongly effervescent.

The Bk horizon has value of 4 or 5 when moist, and it has chroma of 3 or 4 when moist or dry. The horizon has weak and subangular blocky structure or is massive. The horizon is 50 to 70 percent calcium carbonate equivalent.

The R horizon is limestone or dolomite that has a calcium carbonate equivalent of about 40 percent.

Terlco Series

The Terlco series consists of very deep, well drained soils that formed in alluvium derived from andesitic, rhyolitic, and granitic rock. These soils are on fan piedmonts. Slopes are 0 to 30 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Typic Natrargids.

Typical pedon: Terlco very gravelly fine sandy loam in a rangeland area of Wardenot-Terlco-Badland association, about 900 feet south and 100 feet west of the northeast corner of sec. 27, T. 1 N., R. 37 E.

A—0 to 2 inches; light gray (10YR 7/2) very gravelly fine sandy loam, grayish brown (10YR 5/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; many fine interstitial pores; 50 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (2 to 6 inches thick)

Btn1—2 to 3 inches; very pale brown (10YR 7/3) gravelly clay loam, brown (10YR 5/3) moist; moderate medium and thick platy structure; slightly hard, friable, sticky and plastic; few medium roots and many fine and very fine roots; common fine tubular pores; common moderately thick clay films lining pores; 30 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary. (1 to 3 inches thick)

Btn2—3 to 8 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong medium and coarse prismatic structure; slightly hard, friable, sticky and plastic; many medium and fine roots and few very fine roots; common fine tubular pores; many moderately thick clay films on ped faces and lining pores; 30 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary. (3 to 6 inches thick)

Btkn—8 to 12 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many medium and fine roots; many fine and very fine tubular pores; 30 percent pebbles; violently effervescent; few distinct carbonate coatings on undersides of pebbles; very strongly alkaline (pH 9.4); clear smooth boundary. (4 to 7 inches thick)

Bk1—12 to 19 inches; light yellowish brown (10YR 6/4), very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common fine and very fine roots; common medium and fine interstitial pores; 50 percent pebbles; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary. (6 to 9 inches thick)

2Bk2—19 to 60 inches; light yellowish brown (10YR 6/4) stratified extremely gravelly loamy sand to very gravelly sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many medium and fine interstitial pores; 50 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0)

Range in characteristics

The profile usually is dry in some part for a short period in winter and spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the bottom of the natric horizon is 10 to 18 inches. The control section (less than 2 millimeter fraction) is clay loam, loam, and heavy sandy loam. Layers of sandy clay are present in some pedons. Clay content is 18 to 35 percent. The control section is 15 to 30 percent pebbles. It is slightly effervescent to violently effervescent. Major accumulations of secondary carbonates occur in bands or pockets in some pedons. Reaction is moderately alkaline to very strongly alkaline.

The A horizon has value of 6 to 8 when dry and 3 to 6 when moist, and it has chroma of 2 or 3.

The Btn horizon has value of 5 to 7 when dry and 4 to 6 when moist, and it has chroma of 3 or 4. Structure is platy to prismatic and parts to subangular blocky in some pedons. Clay content is 18 to 35 percent; it is as much as 40 percent in the upper part of the argillic horizon in some pedons. Secondary calcium carbonate accumulates in the lower part of the argillic horizon. The sodium absorption ratio is 13 to 30.

The Btkn horizon has value of 5 to 7 when dry and 4 to 6 when moist, and it has chroma of 3 or 4.

The Bk horizon has value of 5 to 8 when dry and 4 to 7 when moist, and it has chroma of 2 or 4. Clay content is 8 to 15 percent. The horizon is 35 to 60 percent pebbles and 0 to 20 percent cobbles.

The 2Bk horizon has value of 5 to 8 when dry and 4 to 7 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is loamy sand or sand. Clay content is 3 to 10 percent. The horizon is 35 to 60 percent pebbles and 0 to 20 percent cobbles.

Theriot Series

The Theriot series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from limestone and dolomite. These soils are on mountain slopes, hills, and rock pediments. There is a weak surface pavement that is 50 percent pebbles and 20 percent cobbles. Slopes are 15 to 75 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is 53 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Torriorthents.

Typical pedon: Theriot very gravelly sandy loam in a rangeland area of Theriot-Kyler-Rock outcrop association, about 1,000 feet east and 600 feet south of the northwest corner of sec. 13, T. 2 N., R. 40 E.

A—0 to 4 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 35 percent pebbles and 10 percent cobbles; few thin lime pendants on rock fragments in the lower part; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (3 to 6 inches thick)

Bk—4 to 8 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine tubular and interstitial pores; 25 percent pebbles and 30 percent cobbles; many moderately thick lime

pendants on rock fragments; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (1 to 14 inches thick)
R—8 inches; limestone.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is loam, fine sandy loam, or sandy loam. The horizon is 50 to 80 percent rock fragments, dominantly stones or cobbles, but some pedons are gravelly. Depth to bedrock is 4 to 20 inches. Reaction is moderately alkaline to very strongly alkaline. Value is 6 or 7 when dry and 4 or 5 when moist, and chroma is 2 to 4. Thin to thick lime pendants are commonly on rock fragments in the lower part of the profile. Thin, noncemented or cemented horizons cap the bedrock in some pedons.

Thike Series

The Thike series consists of very shallow, well drained soils that formed in residuum and colluvium derived from granite. These soils are on mountain slopes. About 40 percent of the surface is covered with pebbles, 30 percent with cobbles, and 10 percent with stones. Slopes are 15 to 75 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids.

Typical pedon: Thike very cobbly sandy loam in a rangeland area of Thike-Rock outcrop association, about 2 miles east of Willow Springs, 2,600 feet south and 2,600 feet east of the northwest corner of sec. 17, T. 8 S., R. 42 E.

A—0 to 2 inches; pale brown (10YR 6/3) very cobbly sandy loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular and interstitial pores; 35 percent pebbles, 15 percent cobbles, and 5 percent stones; neutral (pH 7.2); abrupt smooth boundary. (I to 4 inches thick)
Bt1—2 to 5 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and common fine tubular and interstitial pores; few thin clay films lining pores and coating ped faces; 30 percent pebbles and 10 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary. (2 to 5 inches thick)
Bt2—5 to 8 inches; yellowish brown (10YR 5/4) extremely cobbly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, firm, sticky and plastic; few very fine and fine roots; common very fine and fine interstitial pores; common thin clay films lining pores and coating ped faces; 30 percent pebbles and 40 percent cobbles; mildly alkaline (pH 7.6); abrupt wavy boundary. (2 to 6 inches thick)
R—8 inches; fractured and weathered granite; some clay and roots in cracks in upper 4 inches; becomes hard at a depth of 12 inches.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days between July and October because of convection storms. Soil temperature is 47 to 52 degrees F. Depth to bedrock is 5 to 14 inches. Reaction is neutral or mildly alkaline. The control section is 12 to 18 percent clay. It is 50 to 70 percent rock fragments, of which less than 5 percent is stones, 15 to 40 percent is cobbles, and 20 to 50 percent is pebbles (more than 50 percent of the pebble-sized fragments are 2 to 5 millimeters in size).

The A horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3. Structure is platy or subangular blocky.

The Bt1 horizon has value of 4 or 5 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is sandy loam or coarse sandy loam. Clay content is 10 to 18 percent. The horizon is 40 to 70 percent rock fragments.

The Bt2 horizon has hue of 7.5YR or 10YR, value of 4 or 5 when dry and 3 or 4 when moist, and chroma of 3 or 4. Texture (less than 2 millimeter fraction) is coarse sandy loam, loam, or sandy clay loam. Clay content is 18 to 27 percent. The horizon is 50 to 70 percent rock fragments.

Timper Series

The Timper series consists of very shallow or shallow, well drained soils that formed in mixed alluvium. These soils are on fan skirts, fan piedmonts, and alluvial flats. Slopes are 0 to 4 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Entic Durorthids.

Typical pedon: Timper gravelly sandy loam in a rangeland area of Belcher-Timper-Noyson association, about 1,700 feet north and 2,100 feet east of the southwest corner of sec. 2, T. 3 N., R. 40 E.

A—0 to 3 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 5/3) moist; weak medium and thick platy structure; soft, very friable, nonsticky and nonplastic; few fine roots; many very fine and few fine interstitial pores; 15 percent pebbles; strongly

effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 5 inches thick)

Bw—3 to 14 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few coarse and medium roots; many very fine and few fine interstitial pores; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary. (6 to 16 inches thick)

Bqkm—14 to 24 inches; light gray (10YR 7/2) strongly cemented duripan, brown (10YR 5/3) moist; weak thick platy structure; very hard, very firm; common very fine and fine roots between plates; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary. (5 to 10 inches thick)

2Bqk—24 to 30 inches; light brownish gray (10YR 6/2) gravelly loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; many very fine roots; many fine and medium interstitial pores; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (4 to 12 inches thick)

2C—30 to 60 inches; light gray (10YR 7/2), stratified very gravelly loamy sand to fine sandy loam, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; averages 40 percent pebbles; strongly effervescent; mildly alkaline (pH 7.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the duripan is 10 to 20 inches. Reaction is moderately alkaline to very strongly alkaline, except in the unconformable material, which is mildly alkaline in some pedons. The control section (less than 2 millimeter fraction) is sandy loam or fine sandy loam. Clay content is 5 to 18 percent. The control section is as much as 50 percent rock fragments in any horizon, but when the control section is mixed it averages less than 35 percent rock fragments.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 1 to 3. It is slightly effervescent or strongly effervescent.

The Bw horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It is slightly effervescent to violently effervescent. Structure is granular or subangular blocky.

The 2Bqk horizon is 30 to 60 inches deep to unconformable material. Texture is stratified loam to very gravelly coarse sand. The horizon is noneffervescent to strongly effervescent.

Tognoni Series

The Tognoni series consists of very shallow, well drained soils that formed in residuum and colluvium derived from basalt. These soils are on mountain slopes, mesas, plateaus, and hills. Slopes are 2 to 50 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Haplargids.

Typical pedon: Tognoni extremely cobbly fine sandy loam in a rangeland area of Tognoni-Blacktop-Downeyville association, about 500 feet from the Nye County line, about 400 feet east and 800 feet north of the southwest corner of sec. 4, T. 2 S., R. 43 E.

A1—0 to 2 inches; pale brown (10YR 6/3) extremely cobbly fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine vesicular pores; 45 percent pebbles, 20 percent cobbles, and 5 percent stones; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (I to 3 inches thick)

A2—2 to 4 inches; pale brown (10YR 6/3) very cobbly fine sandy loam, brown (10YR 4/3) moist; strong medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine vesicular and tubular pores; 25 percent pebbles and 25 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (I to 3 inches thick)

Bt1—4 to 7 inches; brown (10YR 5/3) very cobbly clay loam, brown (10YR 4/3) moist; moderately fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine tubular pores; common thin clay films lining pores and few thin clay films on ped faces; 20 percent pebbles and 20 percent cobbles; moderately alkaline (pH 8.2); clear smooth boundary. (0 to 3 inches thick)

Bt2—7 to 14 inches; yellowish brown (10YR 5/4) very cobbly clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine roots; common very fine tubular pores; common moderately thick clay films on ped faces and lining pores; 30 percent pebbles and 20 percent cobbles; common moderately thick silica and lime pendants on rock fragments in the lower part of the horizon; slightly effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary. (3 to 10 inches thick)

R—14 inches; fractured basalt; very thin discontinuous silica-lime laminar cap and coatings in fractures.

Range in characteristics:

The profile usually is dry, but it is moist in some part for short periods late in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms in summer. Soil temperature is 50 to 55 degrees F. The control section is 27 to 35 percent clay. It is 45 to 70 percent rock fragments. Depth to bedrock is 5 to 14 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Reaction is moderately alkaline or strongly alkaline. The horizon is slightly effervescent to violently effervescent. The lower boundary is abrupt or very abrupt.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5 when dry and 3 or 4 when moist, and chroma of 3 or 4. Texture (less than 2 millimeter fraction) is heavy clay loam or clay. Layers of light clay loam are present in some pedons. Clay content averages 35 to 45 percent. The horizon is 45 to 70 percent rock fragments, dominantly cobbles. Structure is blocky or granular. The horizon is slightly effervescent or noneffervescent. Silica and lime pendants are common in the lower part in most pedons.

Tokoper Series

The Tokoper series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium derived from tuff, rhyolite, and basalt. These soils are on hills, rock pediments, and mesas. The surface has a partial cover that is 60 percent pebbles, 20 percent cobbles, and 5 percent stones. Slopes are 4 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Durargids.

Typical pedon: Tokoper very cobbly sandy loam in a rangeland area of Tokoper-Ardivey association, about 2,000 feet east and 700 feet north of the southwest corner of sec. 18, T. 3 S., R. 43 E.

A—0 to 2 inches; very pale brown (10YR 7/3) very cobbly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 30 percent pebbles, 25 percent cobbles, and 2 percent stones; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 5 inches thick)

Bt1—2 to 8 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; soft, very friable, sticky and slightly plastic; many very fine and common medium roots; many very fine, fine, and medium interstitial and tubular pores; 40 percent pebbles and 10 percent cobbles; few thin clay films on ped faces and lining pores; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (5 to 7 inches thick)

Bt2—8 to 10 inches; light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; few fine tubular pores; 35 percent pebbles and 15 percent cobbles; few thin clay films on ped faces; strongly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary. (2 to 6 inches thick)

Bqkm—10 to 11 inches; continuous laminar cap 1 millimeter to 3 centimeters thick.

R—11 inches; hard tuff.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 57 degrees F. The control section (less than 2 millimeter fraction) averages loam or sandy loam. Clay content averages 18 to 27 percent. Rock fragment content averages 35 to 60 percent. Depth to the duripan is 8 to 14 inches. Reaction is moderately alkaline or strongly alkaline. The control section is slightly effervescent to violently effervescent.

The A horizon has hue of 7.5YR or 10YR, value of 6 or 7 when dry and 4 to 6 when moist, and chroma of 2 or 3 when dry or moist. Structure is platy or granular.

The Bt horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 0 to 4 when dry or moist. Texture (less than 2 millimeter fraction) is sandy clay loam or clay loam in the upper part and loam or sandy loam in the lower part. Clay content averages 18 to 28 percent. Rock fragment content is 35 to 55 percent in the upper part and 50 to 75 percent in the lower part; average content is 40 to 60 percent.

Tomel Series

The Tomel series consists of shallow, well drained soils that formed in alluvium derived from shale, siltstone, limestone, chert, and interbedded quartz. These soils are on fan piedmonts and alluvial fans. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Durargids.

Typical pedon: Tomel very gravelly sandy loam in a rangeland area of Tomel-Ardivey-Wardenot association, about 2,600 feet west and 1,000 feet north of the southeast corner of sec. 8, T. 1 N., R. 40 E.

A—0 to 3 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist;

moderate thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common medium and fine roots; many medium and fine vesicular pores; 35 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (2 to 8 inches thick)

Bt1—3 to 7 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak fine prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, sticky and plastic; many medium, fine, and very fine roots; few medium vesicular pores and many medium and fine tubular pores; 25 percent pebbles; few moderately thick and thin clay films on ped faces and in pores; strongly alkaline (pH 8.8); abrupt smooth boundary. (3 to 6 inches thick)

Bt2—7 to 12 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; many medium, fine, and very fine roots; common medium and fine tubular pores; 40 percent pebbles and 5 percent cobbles; few thin clay films in pores; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (2 to 6 inches thick)

Bk—12 to 19 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, dark brown (10YR 4/3) moist; massive; hard, very friable, slightly sticky and slightly plastic; common fine roots; few medium and fine tubular pores; 55 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary. (0 to 8 inches thick)

Bqkm—19 to 26 inches; white (10YR 8/2) extremely gravelly indurated duripan, very pale brown (10YR 7/3) moist; massive; extremely hard, very firm; few very fine roots; few fine interstitial pores; 60 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (6 to 18 inches thick)

2Bqk—26 to 60 inches; very pale brown (10YR 7/3) very gravelly sand, pale brown (10YR 6/3) moist; massive; very hard, firm, nonsticky and nonplastic; few fine roots; few fine interstitial pores; 40 percent pebbles and 5 percent cobbles; white (10YR 8/1) silica and lime coatings on undersides of rock fragments; violently effervescent; strongly alkaline (pH 9.0).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is clay loam or sandy clay loam. Clay content is 20 to 30 percent. The control section is 35 to 50 percent rock fragments. It is noneffervescent to violently effervescent. Depth to the duripan is 10 to 20 inches.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon is massive or has platy structure.

The Bt1 horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 3 or 4. Structure is prismatic or blocky. The horizon is 10 to 35 percent rock fragments.

The Bt2 horizon is massive or subangular blocky. It is 40 to 65 percent rock fragments.

The 2Bqk horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 1 to 3. The horizon is 50 to 75 percent rock fragments.

Trailamp Series

The Trailamp series consists of very shallow, well drained soils that formed in residuum and colluvium derived from siltstone, shale, quartzite, and other sedimentary rock. These soils are on mountain slopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches, and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid, shallow Typic Argixerolls.

Typical pedon: Trailamp very gravelly loam in a woodland area of Trailamp-Sylvaniam association, about 700 feet south and 200 feet east of the northwest corner of sec. 17, T. 6 S., R. 40 E.

O—1 inch to 0; brown (10YR 4/3) pine needle duff.

A—0 to 2 inches; brown (10YR 4/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure parting to weak fine subangular blocky; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine interstitial pores; 35 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary. (2 to 4 inches thick)

Bt1—2 to 5 inches; brown (10YR 4/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few coarse roots and many medium, fine, and very fine roots; many very fine interstitial and tubular pores; 40 percent pebbles; few thin clay films lining pores and on ped faces; mildly alkaline (pH 7.6); clear irregular boundary. (3 to 6 inches thick)

Bt2—5 to 9 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and fine roots; common very fine interstitial and tubular pores; 50 percent pebbles and 10 percent cobbles; mildly

alkaline (pH 7.6); clear wavy boundary. (0 to 5 inches thick)
Cr—9 inches; weathered and highly fractured siltstone.

Range in characteristics

The profile usually is moist in winter and spring and early in summer; it usually is dry in summer and fall but is intermittently moist because of convection storms. It is dry in all parts for at least 45 consecutive days following the summer solstice. Soil temperature is 45 to 47 degrees F. The control section (less than 2 millimeter fraction) averages loam or fine sandy loam. It is 35 to 55 percent rock fragments. Clay content averages 15 to 25 percent. Reaction is mildly alkaline or moderately alkaline. Depth to soft bedrock is 7 to 14 inches. The mollic epipedon is 7 to 10 inches thick; it includes part or all of the Bt horizon.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3.

The Bt1 horizon has value of 4 or 5 when dry and 3 when moist, and it has chroma of 2 or 3 in the upper part. Texture (less than 2 millimeter fraction) is loam, fine sandy loam, or sandy clay loam.

The Bt2 horizon has value of 4 or 5 when dry and 3 or 4 when moist, and it has chroma of 3 or 4.

Tulecan Series

The Tulecan series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rock. These soils are on mountain slopes and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Aridic Argixerolls.

Typical pedon: Tulecan very cobbly coarse sandy loam in a woodland area of Armoine-Tulecan association, about 1,200 feet west and 900 feet north of the southeast corner of sec. 11, T. 6 S., R. 38 E.

A1—0 to 1 inch; grayish brown (10YR 5/2) very cobbly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine tubular pores; many fine interstitial pores; 25 percent pebbles and 30 percent cobbles; neutral (pH 7.2); abrupt smooth boundary. (1 to 3 inches thick)
A2—1 to 4 inches; brown (10YR 5/3) very cobbly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; many fine interstitial pores; 25 percent pebbles and 30 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary. (3 to 5 inches thick)
Bt1—4 to 8 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine tubular and interstitial pores; 40 percent pebbles and 10 percent cobbles; few thin clay films on ped faces and lining pores; mildly alkaline (pH 7.6); abrupt wavy boundary. (3 to 6 inches thick)
Bt2—8 to 15 inches; yellowish brown (10YR 5/4) very cobbly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; few very fine tubular pores; 30 percent pebbles and 20 percent cobbles; few thin clay films on ped faces and lining pores; mildly alkaline (pH 7.6); gradual wavy boundary. (7 to 10 inches thick)
Cr—15 to 20 inches; weathered granitic bedrock.

Range in characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 47 to 53 degrees F. Reaction is neutral or mildly alkaline. The mollic epipedon is 7 to 12 inches thick; it includes the upper part of the Bt horizon. The control section (less than 2 millimeter fraction) averages sandy clay loam or coarse sandy loam. It is 35 to 50 percent rock fragments, mainly 2 to 5 millimeters in diameter. Clay content is 18 to 27 percent. Depth to soft bedrock is 14 to 20 inches.

The A horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3. Structure is subangular blocky or granular.

The Bt1 horizon has value of 4 or 5 when dry and 2 or 3 when moist, and it has chroma of 2 or 3.

The Bt2 horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4.

Ubehebe Series

The Ubehebe series consists of shallow, well drained soils that formed in residuum and colluvium derived from siltstone and related sedimentary rock. These soils are on hills and mountain slopes. About 40 percent of the surface is covered with pebbles, 15 percent with cobbles, and 1 percent with stones. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Aridic Argixerolls.

Typical pedon: Ubehebe very gravelly sandy loam in a woodland area of Ubehebe-Weepah association, about 0.5 mile southwest of the microwave station, about 1,000

feet west of the northeast corner of sec. 33, T. 7 S., R. 42 E.

A1—0 to 2 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular pores; 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (1 to 4 inches thick)

A2—2 to 4 inches; brown (10YR 4/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 35 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (2 to 5 inches thick)

Bt1—4 to 7 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, sticky and plastic; common very fine and fine roots; many very fine and fine interstitial pores; 35 percent pebbles and 5 percent cobbles; few thin clay films on ped faces and lining pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (1 to 4 inches thick)

Bt2—7 to 17 inches; brown (10YR 5/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine, and medium roots; common very fine and fine tubular and interstitial pores; 40 percent pebbles and 10 percent cobbles; common thin clay films on ped faces and lining pores; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (4 to 12 inches thick)

Cr—17 inches; partially weathered, somewhat altered siltstone.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days during July to October because of convection storms. Soil temperature is 47 to 53 degrees F. The mollic epipedon, which includes the Bt1 horizon, is 7 to 12 inches thick. Depth to paralithic contact is 14 to 20 inches. Depth to hard bedrock is 20 to 40 inches. The control section (less than 2 millimeter fraction) averages loam. It is 35 to 55 percent rock fragments. Clay content is 18 to 27 percent rock fragments. Reaction is mildly alkaline or moderately alkaline.

The A horizon has value of 4 or 5 when dry, and it has chroma of 2 or 3. It is noneffervescent or slightly effervescent.

The Bt1 horizon has value of 4 or 5 when dry, and it has chroma of 2 or 3. It is slightly effervescent or strongly effervescent.

The Bt2 horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 3 or 4. Clay content is 18 to 27 percent. The horizon is strongly effervescent or violently effervescent.

Unsel Series

The Unsel series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on alluvial fans. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is 53 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Duric Haplargids.

Typical pedon: Unsel gravelly loam in a rangeland area of Unsel-Belted-Orphant association, about 500 feet north and 1,500 feet east of the southwest corner of sec. 17, T. 3 N., R. 42 E.

A1—0 to 2 inches; very pale brown (10YR 7/3) gravelly loam, yellowish brown (10YR 5/4) moist; moderate medium and thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and very fine vesicular pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 3 inches thick)

A2—2 to 7 inches; light gray (10YR 7/2) gravelly loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine and few coarse vesicular pores; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary. (1 to 6 inches thick)

Bt—7 to 11 inches; light yellowish brown (10YR 6/4) gravelly clay loam, yellowish brown (10YR 5/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and fine roots and common coarse roots; many very fine and few fine interstitial pores; common thin clay films lining pores and on peds; 25 percent pebbles; moderately alkaline (pH 8.4); abrupt wavy boundary. (2 to 8 inches thick)

Bqk—11 to 20 inches; very pale brown (10YR 8/3) gravelly sandy loam, light yellowish brown (10YR 6/4) moist; massive; extremely hard, firm, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; continuous weak cementation; 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (6 to 24 inches thick)

2C—20 to 47 inches; very pale brown (10YR 7/4) very gravelly sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine, fine, and medium interstitial pores; 55 percent pebbles; silica and

carbonate coatings on undersides of pebbles; noneffervescent; strongly alkaline (pH 8.6). (5 to 30 inches thick)

3C—47 to 60 inches; very pale brown (10YR 8/3) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; 40 percent pebbles; violently effervescent; strongly alkaline (pH 9.0).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the Bqk horizon is 10 to 22 inches. Depth to the 2C horizon is 20 to 36 inches. The control section (less than 2 millimeter fraction) is clay loam or sandy clay loam. Clay content is 27 to 35 percent. The control section is 15 to 30 percent rock fragments. It is noneffervescent to violently effervescent.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. The horizon has subangular blocky or platy structure or is massive. Reaction is moderately alkaline to very strongly alkaline.

The Bt horizon has value of 5 to 7 when dry and 3 to 6 when moist, and it has chroma of 2 to 4. Texture (less than 2 millimeter fraction) is clay loam or sandy clay loam. The horizon is 15 to 30 percent rock fragments. Clay content is 27 to 35 percent. The horizon has weak or moderate, fine or medium subangular blocky structure, has weak, medium, or coarse prismatic structure, or is massive. Reaction is mildly alkaline to strongly alkaline.

The Bqk horizon has value of 7 or 8 when dry and 4 to 6 when moist, and it has chroma of 2 to 4.

The 2C horizon has value of 7 or 8 when dry and 3 to 5 when moist, and it has chroma of 2 to 4. The horizon is 50 to 70 percent rock fragments.

Unsel Variant

The Unsel Variant consists of very deep, well drained soils that formed in alluvium derived from tuff and other volcanic rock. These soils are on alluvial fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches, and the mean annual air temperature is about 54 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Typic Haplargids.

Typical pedon: Unsel Variant gravelly loamy sand in a rangeland area of Unsel Variant-Vindicator-Espint association, about 1,300 feet north and 600 feet west of the southeast corner of sec. 29, T. 2 S., R. 43 E.

A1—0 to 4 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (3 to 5 inches thick)

A2—4 to 6 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine interstitial pores; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (1 to 4 inches thick)

Bt—6 to 12 inches; light yellowish brown (10YR 6/4) gravelly clay loam, yellowish brown (10YR 5/4) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine tubular pores; 15 percent pebbles; common moderately thick clay films on ped faces and lining pores; slightly effervescent; mildly alkaline (pH 7.8); clear wavy boundary. (4 to 8 inches thick)

Btk—12 to 25 inches; pale brown (10YR 6/3) very gravelly loam, yellowish brown (10YR 5/4) moist; moderate medium and coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; many very fine, fine, and medium tubular pores; 35 percent pebbles; common thin clay films on ped faces and lining pores; common fine lime filaments in pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (10 to 15 inches thick)

Bk—25 to 60 inches; light yellowish brown (10YR 6/4), stratified extremely gravelly sandy loam to extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine, fine, and medium interstitial pores; 60 percent pebbles; common fine lime pendants on rock fragments; violently effervescent; strongly alkaline (pH 9.0)

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 55 to 56 degrees F. The control section (less than 2 millimeter fraction) averages clay loam or loam, but there are strata of clay or sandy clay loam in some pedons. Clay content averages 20 to 35 percent. The control section is 15 to 30 percent rock fragments. It is slightly effervescent to violently effervescent.

Upspring Series

The Upspring series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic tuff and basalt. These soils are on mesas, mountain slopes, and hills. Slopes are 4 to 50 percent. The mean annual precipitation is about 6 inches, and the mean annual air temperature is about 57 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), thermic Lithic Torriorthents.

Typical pedon: Upspring very cobbly sandy loam in a rangeland area of Tokoper-Upspring-Rock outcrop association, about 2,000 feet south and 2,000 feet west of the northeast corner of sec. 17, T. 8 S., R. 43 E.

A—0 to 2 inches; pale brown (10YR 6/3) very cobbly sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular pores; 35 percent pebbles and 20 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 4 inches thick)

Bk—2 to 12 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial pores; 45 percent pebbles and 15 percent cobbles; lime coatings on underside of rock fragments; slightly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary. (3 to 12 inches thick)

R—12 inches; hard fractured volcanic tuff; common lime coatings on surface of rock.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 59 to 63 degrees F. Depth to bedrock is 4 to 14 inches. The control section (less than 2 millimeter fraction) averages fine sandy loam or sandy loam. Rock fragment content averages 35 to 60 percent. The profile is slightly effervescent to strongly effervescent.

The A horizon has value of 5 or 6 when dry and 3 to 5 when moist, and it has chroma of 3 or 4. It is massive or subangular blocky.

The Bk horizon has value of 5 to 7 when dry and 4 to 6 when moist, and it has chroma of 3 or 4. It is massive or subangular blocky.

Veet Series

The Veet series consists of very deep, well drained soils that formed in mixed alluvium derived from andesitic and granitic rocks. These soils are on alluvial fans, inset fans, fan piedmonts, and axial stream terraces. Slopes are 2 to 15 percent. The mean annual precipitation is about 9 inches, and mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Xerollic Camborthids.

Typical pedon: Veet very gravelly sandy loam in a rangeland area of Lathrop-Belted-Veet association, about 2,400 feet north and 2,400 feet west of the southeast corner of sec. 7, T. 1 N., R. 34 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few fine and very fine roots; many fine interstitial pores; 40 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary. (1 to 3 inches thick).

A2—2 to 4 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; common fine tubular pores and many fine and medium vesicular pores; 35 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary. (2 to 5 inches thick).

Bw—4 to 14 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few medium roots and many very fine and fine roots; common very fine interstitial and tubular pores; 25 percent pebbles and 10 percent cobbles; mildly alkaline (pH 7.8); clear smooth boundary. (8 to 18 inches thick).

Bk1—14 to 20 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common fine roots; few fine pores; 40 percent pebbles and 20 percent cobbles; lime coatings on underside of rock fragments; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 20 inches thick).

Bk2—20 to 60 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine roots; few fine pores; 50 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2).

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages sandy loam or coarse sandy loam. Clay content is 10 to 18 percent. The control section is 35 to 65 percent rock fragments. Depth to lime is 12 to 20 inches.

The A horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 or 3. Structure is weak to medium, fine to moderate, and granular or subangular blocky or is single grain. Reaction is mildly alkaline or moderately alkaline. The horizon is noneffervescent or slightly effervescent.

The Bw horizon has value of 5 or 6 when dry and 3 or 4 when moist, and it has chroma of 2 to 4. Structure is weak to moderate, fine to medium, and subangular blocky. Reaction is mildly alkaline or moderately alkaline. The horizon is noneffervescent or slightly effervescent.

The Bk horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. Reaction is moderately alkaline or strongly alkaline. The horizon is strongly effervescent or violently effervescent.

Veet Variant

The Veet Variant consists of very deep, artificially drained soils that formed in alluvium derived from various kinds of rock. These soils are on stream terraces and alluvial flats. Slopes are 0 to 4 percent. The mean annual precipitation is about 9 inches, and the mean annual air temperature is about 48 degrees F.

Taxonomic class: Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Fluvaquentic Haploxerolls.

Typical pedon: Veet Variant fine sandy loam in a rangeland area of Wardenot-Roic association, about 1,200 feet east and 50 feet north of the southwest corner of sec. 36, T. 5 S., R. 40 E.

A1—0 to 1 inch; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; less than 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (1 to 4 inches thick)

A2—1 to 4 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium and thin platy structure; soft, very friable, slightly sticky and slightly plastic; many medium and fine roots and few coarse roots; many fine and very fine interstitial pores; less than 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (2 to 5 inches thick)

A3—4 to 11 inches; brown (10YR 5/3), stratified fine sandy loam to loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many coarse, medium, and fine roots; many fine and very fine interstitial pores; less than 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (4 to 8 inches thick)

C1—11 to 24 inches; brown (10YR 5/3), stratified sandy loam to loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many coarse, medium, and fine roots; many fine and very fine interstitial pores; less than 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (10 to 26 inches thick)

2C2—24 to 60 inches; pale brown (10YR 6/3), stratified gravelly sandy loam to very gravelly sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many coarse, medium, and fine roots; common medium and many fine interstitial pores; 40 percent pebbles; few faint relict mottles; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile is moist in winter and spring; it is dry in summer, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 49 to 52 degrees F. The thickness of the mollic epipedon is 10 to 14 inches. Depth to mottles is 20 to 30 inches. Organic carbon content decreases irregularly as depth increases. The upper part of the control section (less than 2 millimeter fraction) is stratified sandy loam to loam that averages light loam; rock fragment content is 0 to 5 percent. The lower part (less than 2 millimeter fraction), between depths of 20 and 40 inches, is stratified gravelly sandy loam to very gravelly sand that averages loamy sand. Rock fragment content averages 35 to 60 percent. The A and C horizons are mildly alkaline or moderately alkaline. The 2C horizon is moderately alkaline or strongly alkaline.

Vigus Series

The Vigus series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on alluvial fans, fan skirts, and fan piedmonts. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Duric Haplargids.

Typical pedon: Vigus gravelly sandy loam in a rangeland area of Vigus-Unsel-Izo association, about 2,200 feet north and 2,000 feet west of the apparent southeast corner of sec. 21, T. 4 S., R. 36 E., 300 yards north of the California State line and Highway 3A.

A1—0 to 3 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine vesicular pores; 25 percent pebbles; slightly

effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 5 inches thick).

A2—3 to 8 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; common very fine and fine tubular pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (3 to 7 inches thick).

Bt—8 to 12 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common very fine and fine tubular pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (4 to 12 inches thick).

Bk—12 to 17 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common very fine and fine tubular pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.3); clear smooth boundary. (2 to 12 inches thick).

Bqk—17 to 28 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; massive; soft to brittle, very friable to brittle; few very fine and fine roots; few fine tubular pores; 15 percent pebbles and 25 percent durinodes; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (5 to 12 inches thick).

2B'k—28 to 60 inches; very pale brown (10YR 7/3) gravelly loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 30 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) is heavy fine sandy loam, loam, or light sandy clay loam. Clay content is 18 to 27 percent. Gravel content is less than 15 percent. Depth to durinodes is 10 to 24 inches. A strongly cemented duripan is below a depth of 40 inches in some pedons. A 2Bk horizon is not present in some pedons.

The A horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. The horizon is platy, subangular blocky, massive, or single grain. It commonly is noneffervescent, but it is slightly effervescent in some pedons. Reaction is neutral to moderately alkaline.

The Bt horizon has value of 5 or 6 when dry and 4 or 5 when moist, and it has chroma of 2 to 4. Structure is columnar or subangular blocky. Reaction is moderately alkaline or strongly alkaline. The horizon commonly is noneffervescent, but in some pedons it is slightly effervescent.

The Bq and Bqk horizons have value of 5 to 7 when dry and 4 to 6 when moist, and they have chroma of 2 to 4. Consistence is soft or slightly hard and friable in the Bqk horizon; the durinodes are hard or very hard when dry and are firm or very firm when moist. Reaction of the Bq and Bqk horizons is moderately alkaline to very strongly alkaline. The horizons are less than 30 percent rock fragments.

Vindicator Series

The Vindicator series consists of very shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock. These soils are on hills, mountain slopes, and rock pediments. Slopes are 2 to 50 percent. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Haplargids.

Typical pedon: Vindicator gravelly sandy loam in a rangeland area of Espint-Stewval-Vindicator association, south of Vindicator Mountain; about 200 feet east and 2,500 feet north of the southwest corner of sec. 31, T. 2 S., R. 43 E.

A—0 to 2 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure parting to moderate fine granular; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; 15 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (I to 4 inches thick)

Bt—2 to 7 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 40 percent pebbles and 5 percent cobbles; common thin clay films on ped faces and lining pores; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (3 to 11 inches thick)

Cr—7 to 16 inches; soft tuffaceous rock; roots extend into numerous fractures.

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to soft rock is 4 to 14 inches. The control section (less than 2 millimeter fraction) averages loam. It is 35 to 50 percent rock fragments, mainly pebbles. Clay content is 18 to 27 percent. Reaction is mildly alkaline or moderately alkaline. The control section is slightly effervescent to violently effervescent.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4.

The Bt horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Texture (less than 2 millimeter fraction) is clay loam or loam. Clay content is 20 to 30 percent. The horizon is 35 to 50 percent rock fragments, mainly pebbles. It normally contains 5 to 15 percent soft rock fragments that break down when shaken.

Wahguyhe Series

The Wahguyhe series consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from volcanic rock and tuff. These soils are on mountain slopes and hills. About 60 percent of the surface is covered with pebbles and 2 percent with cobbles. Slopes are 15 to 75 percent. The mean annual precipitation is about 11 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, nonacid, mesic Lithic Xeric Torriorthents.

Typical pedon: Wahguyhe very gravelly sandy loam in a rangeland area of Ravenswood-Wahguyhe-Brier association, about 100 feet north and 300 feet east of the southwest corner of sec. 20, T. 1 N., R. 34 E.

A1—0 to 4 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine vesicular pores; 35 percent pebbles and 5 percent cobbles; noneffervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (1 to 5 inches thick)

A2—4 to 8 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common fine and very fine roots; common fine tubular pores; 35 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.0); clear smooth boundary. (1 to 5 inches thick)

C1—8 to 15 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; many fine and medium roots; common fine tubular pores; 30 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 15 inches thick)

C2—15 to 19 inches; pale brown (10YR 6/3) very cobbly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular pores; 30 percent pebbles and 15 percent cobbles; moderately alkaline (pH 8.0); abrupt wavy boundary. (0 to 5 inches thick)

R—19 inches; hard rhyolitic bedrock.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to lithic contact is 14 to 20 inches. The control section (less than 2 millimeter fraction) averages sandy loam. It is 35 to 60 rock fragments. Clay content is 5 to 15 percent.

The A horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Structure is subangular blocky or platy.

The C horizon has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 3 or 4.

Wardenot Series

The Wardenot series consists of very deep, excessively drained soils that formed in alluvium derived from various kinds of rock. These soils are on alluvial fans, fan skirts, fan piedmonts, and inset fans. Slopes are 0 to 15 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents.

Typical pedon: Wardenot gravelly fine sandy loam in a rangeland area of Unsel-Wardenot-Izo association, about 2,400 feet north and 3,350 feet east of the southwest corner of sec. 20, T. 3 N., R. 37 E.

A1—0 to 2 inches; pale brown (10YR 6/3) gravelly loamy sand, dark brown (10YR 4/3) moist; moderate thick platy structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine vesicular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 5 inches thick)

A2—2 to 7 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and common fine roots; many very fine and fine vesicular pores and common very fine interstitial pores; 35 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear wavy boundary. (0 to 6 inches thick)

2C—7 to 14 inches; pale brown (10YR 6/3) very gravelly sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine roots; many fine interstitial pores and common very fine tubular pores; 50 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary. (5 to 10 inches thick)

3Bqk—14 to 19 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine interstitial and tubular pores; 55 percent pebbles; lime and silica coating on undersides of pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (3 to 10 inches thick)

4Bk—19 to 60 inches; light yellowish brown (10YR 6/4), stratified extremely gravelly loamy sand and very gravelly sandy loam, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; few fine interstitial and tubular pores; 65 percent pebbles and 10 percent cobbles; lime coatings on undersides of rock fragments; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages loamy sand. It is 40 to 75 percent rock fragments and includes cobbles and stones. Reaction is mildly alkaline to strongly alkaline and commonly increases as depth increases.

The A horizon has value of 6 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. It commonly is noneffervescent to strongly effervescent, but it is violently effervescent in some areas that are influenced by eolian deposits. The horizon is massive or has platy or subangular blocky structure.

The Bqk and Bk horizons have value of 5 to 7 when dry and 3 to 5 when moist, and they have chroma of 2 to 4. Texture (less than 2 millimeter fraction) is stratified extremely gravelly fine sandy loam to cobbly loamy sand. Strata of very gravelly or cobbly sandy loam or fine sandy loam are present in the upper part of the substratum in all pedons. The horizon averages 40 to 75 percent rock fragments, but individual strata have as little as 25 percent rock fragments. Lime and silica pendants commonly are present in some part of the B horizon. The horizon is strongly effervescent or violently effervescent. It is single grain or massive.

Weepah Series

The Weepah series consists of very shallow, well drained soils that formed in residuum and colluvium derived from sedimentary rock. These soils are on mountain slopes. About 40 percent of the surface is covered with channers and 5 percent with flagstones. Slopes are 15 to 75 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic, shallow Xeric Torriorthents.

Typical pedon: Weepah very gravelly loam in a rangeland of Weepah-Kyler-Rock outcrop association, mine exploratory cut on a north-facing slope, about 2,200 feet south and 1,800 feet west of the northeast corner of sec. 20, T. 1 N., R. 40 E.

A—0 to 2 inches; light brownish gray (10YR 6/2) very gravelly loam, grayish brown (10YR 5/2) moist; moderate medium platy structure parting to moderate medium and fine subangular blocky; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many fine and very fine interstitial pores; 45 percent pebbles (about 15 percent of these will break down in 15 hours of shaking in water or in sodium hexametaphosphate) and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary. (1 to 3 inches thick)

Bk—2 to 8 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots and few medium roots; many fine and very fine interstitial pores; 40 percent pebbles (about 10 percent of these will break down in 15 hours of shaking in water or in sodium hexametaphosphate) and 15 percent cobbles; common thin lime coatings and pendants on undersides of rock fragments; strongly effervescent; strongly alkaline (pH 8.6); clear irregular boundary. (3 to 11 inches thick)

Cr—8 inches; soft, highly fractured shale; common very fine and fine roots matted in fractures.

Range in characteristics

The profile is moist in winter and spring, and it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 49 to 55 degrees F. Depth to paralithic contact is 4 to 12 inches. Reaction is moderately alkaline or strongly alkaline. Calcium carbonate equivalent is 15 to 35 percent. The profile is strongly effervescent or violently effervescent. The control section (less than 2 millimeter fraction) averages loam or fine sandy loam. It is 35 to 65 percent rock

fragments, mostly gravel. Clay content is 10 to 18 percent.

The A horizon has value of 4 to 6 when dry and 3 to 5 when moist, and it has chroma of 1 to 3. Structure is subangular blocky or platy.

The Bk horizon has hue of 10YR or 7.5YR, value of 4 to 6 when dry and 2 to 4 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) is fine sandy loam or loam. The horizon has subangular blocky structure or is massive.

Wrango Series

The Wrango series consists of very deep, excessively drained soils that formed in alluvium derived from various kinds of rock. These soils are on alluvial fans and fan piedmonts. Slopes are 2 to 8 percent. The mean annual precipitation is about 8 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Xeric Torriorthents.

Typical pedon: Wrango stony fine sandy loam in a rangeland area of Wrango-Zadvar-Veet association, about 2,100 feet east and 2,400 feet south of the northwest corner of sec. 32, T. 1 S., R. 38 E.

A—0 to 2 inches; light brownish gray (10YR 6/2) gravelly loamy sand, dark grayish brown (10YR 4/2) moist; weak thin platy structure parting to moderate medium subangular blocky; soft, very friable, nonsticky and nonplastic; few fine roots; few fine vesicular pores and many fine and very fine interstitial pores; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary. (1 to 4 inches thick)

C—2 to 14 inches; pale brown (10YR 6/3) gravelly fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, slightly sticky and nonplastic; common medium roots and many very fine and fine roots; many very fine and fine interstitial pores and few fine tubular pores; 30 percent pebbles; few thin lime pendants on undersides of rock fragments in the lower part; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 12 inches thick)

2Bk1—14 to 25 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few coarse roots and many fine and medium roots; many fine and medium interstitial pores; 60 percent pebbles; 5 percent cobbles; common thin lime pendants on rock fragments; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 13 inches thick)

3Bk2—25 to 34 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few coarse roots and many fine and medium roots; many fine and medium interstitial pores; 65 percent pebbles and 5 percent cobbles; common thin lime pendants on rock fragments; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 12 inches thick)

4Bk3—34 to 60 inches; pale brown (10YR 6/3) extremely gravelly sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common coarse and many fine and medium interstitial pores; 65 percent pebbles and 5 percent cobbles; common thin lime pendants on rock fragments; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile is moist in winter and spring; it is in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Reaction is mildly alkaline or moderately alkaline. The profile is noneffervescent to violently effervescent. The control section (less than 2 millimeter fraction) averages loamy coarse sand and sand. Clay content is 0 to 8 percent. Rock fragment content averages 60 to 75 percent. The control section has value of 6 or 7 when dry and 3 or 4 when moist, and it has chroma of 2 or 3.

The A horizon is platy, subangular blocky, massive, or single grain.

Yermo Series

The Yermo series consists of very deep, well drained soils that formed in mixed alluvium. These soils are on alluvial fans, fan piedmonts, and alluvial flats. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches, and the mean annual air temperature is about 57 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), thermic Typic Torriorthents.

Typical pedon: Yermo very gravelly sandy loam in a rangeland area of Yermo-Arizo association, about 500 feet north and 500 feet west of the southeast corner of sec. 20, T. 8 S., R. 43 E.

A—0 to 6 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine vesicular and common very fine interstitial pores; 35 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (4 to 12 inches thick)

C—6 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 45 percent pebbles and 10

percent cobbles; strongly effervescent; moderately alkaline (pH 8.4).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 59 to 61 degrees F. The control section (less than 2 millimeter fraction) averages sandy loam but thin layers of loamy sand are present in some pedons. Clay content is 8 to 18 percent. The control section is 35 to 60 percent rock fragments. Reaction is moderately alkaline or strongly alkaline. The control section is slightly effervescent or strongly effervescent.

The A horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3.

The C horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 2 or 3. Texture (less than 2 millimeter fraction) is sandy loam or loam. Strata of loamy sand are present in some pedons. The horizon is 35 to 60 percent rock fragments.

Yomba Series

The Yomba series consists of very deep, somewhat excessively drained soils that formed in mixed alluvium. These soils are on alluvial flats, fan piedmonts, and fan skirts. About 25 percent of the surface is covered with pebbles. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Duric Camborthids.

Typical pedon: Yomba gravelly sand in a rangeland area of Yomba-Playas-Youngston association, about 1,000 feet south and 250 feet west of the northeast corner of sec. 34, T. 5 N., R. 40 E.

A—0 to 3 inches; pale brown (10YR 6/3) gravelly sand, brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and very fine roots; many very fine and common fine interstitial pores; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (1 to 8 inches thick)

Bw—3 to 11 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to moderate thick platy; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots and few medium and coarse roots; many very fine and common fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (3 to 10 inches thick)

2Bqk—11 to 18 inches; light gray (10YR 7/2) very gravelly coarse sandy loam, light yellowish brown (10YR 6/4) moist; massive; very hard, very firm, nonsticky and nonplastic; many very fine and fine roots and few medium and coarse roots; common very fine and fine interstitial pores; 50 percent pebbles; continuous weak cementation; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary. (5 to 12 inches thick)

3C—18 to 60 inches; light brownish gray (10YR 6/2) extremely gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine and common medium interstitial pores; 65 percent pebbles; strongly alkaline (pH 8.8).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. Depth to the 2B horizon is 10 to 23 inches. Depth to sand and gravel is 18 to 26 inches. The control section (less than 2 millimeter fraction) is loamy sand. It is 40 to 60 percent rock fragments.

The A horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 3 or 4 when moist, and chroma of 2 or 3. The horizon is noneffervescent or slightly effervescent. Reaction is mildly alkaline or moderately alkaline. Structure is single grain, subangular blocky, or platy.

The Bw horizon has hue of 10YR or 2.5Y, value of 6 or 7 when dry and 3 or 4 when moist, and chroma of 2 or 3. Texture (less than 2 millimeter fraction) is sandy loam, fine sandy loam, or loam. Clay content is 10 to 20 percent. The horizon is 0 to 15 percent rock fragments, mainly pebbles. It is strongly effervescent or violently effervescent. Reaction is moderately alkaline or strongly alkaline. Structure is platy or prismatic.

The 2Bqk horizon has value of 6 or 7 when dry and 4 to 6 when moist, and it has chroma of 2 to 4. The horizon has laminae with cementation that ranges from weak, with only a few thin silica bridges, to strong, with 0.25 inch thick discontinuous layers in pockets and seams. Texture (less than 2 millimeter fraction) is coarse sandy loam or sandy loam. The horizon is 30 to 50 percent rock fragments, dominantly pebbles. It is strongly effervescent or violently effervescent. Reaction is moderately alkaline or strongly alkaline.

The 3C horizon has value of 6 or 7 when dry and 3 to 5 when moist, and it has chroma of 1 to 3. Texture (less than 2 millimeter fraction) is sand with strata that have varying amounts of pebbles and cobbles, dominantly pebbles. The horizon is 50 to 70 percent rock fragments. It is noneffervescent or slightly effervescent. Reaction is mildly alkaline to strongly alkaline.

Youngston Series

The Youngston series consists of very deep, moderately well drained soils that formed in mixed alluvium. These soils are on alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches, and the mean annual air temperature is about 49 degrees F.

Taxonomic class: Fine-loamy, mixed (calcareous), mesic Typic Torrifluvents.

Typical pedon: Youngston silt loam in a rangeland area of Youngston-Playas association, about 2,200 feet north and 1,000 feet east of the southwest corner of sec. 11, T. 3 N., R. 39 E.

A—0 to 3 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine and few fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (2 to 6 inches thick)

AC—3 to 9 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse roots and common very fine and fine roots; many very fine and few fine interstitial pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (4 to 12 inches thick)

C1—9 to 16 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and few fine interstitial pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary. (5 to 10 inches thick)

C2—16 to 60 inches; light gray (10YR 7/2) loam, brown (10YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and common fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.6).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 47 to 50 degrees F. Organic matter content decreases irregularly as depth increases. The control section (less than 2 millimeter fraction) averages loam or clay loam. It is 0 to 15 percent rock fragments. Clay content is 18 to 35 percent. The profile has value of 6 or 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Reaction of the AC and C horizons is moderately alkaline or strongly alkaline.

Zaba Series

The Zaba series consists of very deep, well drained soils that formed in water-deposited pebbles and sand derived from various kinds of rock. These soils are on beach plains. Slopes are 0 to 8 percent. The mean annual precipitation is about 4 inches, and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Typic Haplargids.

Typical pedon: Zaba very gravelly loam, 0 to 8 percent slopes, in a rangeland area; about 2,100 feet east and 100 feet south of the apparent northwest corner of sec. 33 in an unsurveyed area of T. 2 N., R. 38 E.; about 4,500 feet south-southeast of the radio facility south of Blair Junction.

A—0 to 3 inches; light gray (10YR 7/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many coarse vesicular pores; 35 percent pebbles; violently effervescent; very strongly alkaline (pH 9.1); abrupt smooth boundary. (1 to 10 inches thick)

Bt—3 to 23 inches; yellowish brown (10YR 5/4) very gravelly sandy loam lamellae, dark yellowish brown (10YR 4/4) moist and light gray (10YR 7/2) very gravelly loamy sand interlamellae, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common thin and moderately thick clay films on ped faces and in the pores in the lamellae; few fine roots; few fine tubular pores and common fine interstitial pores; 40 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.1); abrupt smooth boundary. (4 to 20 inches thick)

Bk—23 to 60 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; massive; slightly hard to hard, very friable, nonsticky and nonplastic; thin lime coatings on undersides of gravel; few fine and medium roots; many medium interstitial pores; 50 percent pebbles; violently effervescent; very strongly alkaline (pH 9.1).

Range in characteristics

The profile usually is dry, but it is moist in some part for short periods in winter and early in spring and for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section (less than 2 millimeter fraction) averages loam or sandy loam. Average clay content is 5 to 18 percent. The control section averages 35 to 60 percent rock fragments. It is strongly effervescent or violently effervescent. Thickness of the solum is 10 to 25 inches. Exchangeable sodium content is 15 to 35 percent in the solum.

The A horizon has hue of 10YR or 2.5Y, value of 7 or 8 when dry and 4 or 5 when moist, and chroma of 2 to 4.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7 when dry and 4 or 5 when moist, and chroma of 2 to 4. Texture (less than 2 millimeter fraction) of the lamellae is sandy loam, sandy clay loam, loam, or silt loam; between the lamellae is loamy sand to coarse sand. The horizon is 35 to 60 percent pebbles 0.25 to 0.75 inch in diameter. It commonly is massive, but in some pedons there are thin discontinuous layers that have very fine, granular structure or very fine to medium, blocky structure. Three to eight lamellae 2 to 6 inches thick commonly are present.

The Bk horizon has hue of 10YR or 2.5Y, value of 6 to 8 when dry and 3 to 5 when moist, and chroma of 4 or 5. Texture (less than 2 millimeter fraction) is sand or coarse sand. Thin strata of loam or sandy loam are present in some pedons. The horizon is 40 to 80 percent pebbles and most are 0.25 to 1.00 inch in diameter.

Zadvar Series

The Zadvar series consists of very shallow, well drained soils that formed in mixed alluvium derived from volcanic rock. These soils are on fan piedmonts. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Haploxerollic Durargids.

Typical pedon: Zadvar gravelly fine sandy loam in an area of Zadvar-Veet-Lyda association, about 1,500 feet east and 2,000 feet north of the southwest corner of sec. 5, T. 2 S., R. 38 E.

A1—0 to 2 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine interstitial pores; 35 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary. (1 to 3 inches thick)

A2—2 to 6 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; common fine and medium vesicular pores; 30 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary. (2 to 5 inches thick)

Bt—6 to 10 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; many medium, fine, and very fine roots; common fine and medium tubular pores; 30 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary. (3 to 7 inches thick)

Btk—10 to 12 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many medium, fine, and very fine roots; many fine and medium tubular pores; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (1 to 4 inches thick)

Bqkm—12 to 22 inches; continuous strongly cemented hardpan with discontinuous silica lamina; massive; brittle, nonsticky and nonplastic; few very fine and fine roots; clear smooth boundary. (6 to 18 inches thick)

Bqk—22 to 60 inches; light brownish gray (10YR 6/2), stratified extremely gravelly sand to extremely gravelly sandy loam with discontinuous strong cementation, brown (10YR 4/3) moist; massive; slightly hard to brittle, firm to brittle, nonsticky and nonplastic; few very fine and fine roots; many fine interstitial pores; 60 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Range in Characteristics

The profile is moist in winter and spring; it is dry in summer and fall, except for 10 to 20 days cumulatively between July and October because of convection storms. Soil temperature is 53 to 59 degrees F. The control section averages 18 to 27 percent clay. Rock fragment content averages 20 to 35 percent. Depth to the hardpan is 10 to 14 inches.

The A horizon has value of 5 to 7 when dry and 4 or 5 when moist, and it has chroma of 2 or 3. Reaction is mildly alkaline or moderately alkaline. Structure is single grain, granular, platy, or subangular blocky.

The Bt horizon has value of 5 or 6 when dry and 4 or 5 when moist, and it has chroma of 3 or 4. Reaction is mildly alkaline or moderately alkaline. Texture is clay loam or sandy clay loam. The horizon is 10 to 30 percent rock fragments, mainly pebbles. Clay content averages 27 to 35 percent, but some pedons have more than 35 percent clay. The horizon is mainly noncalcareous, but some pedons are slightly effervescent or strongly effervescent in the lower part. Structure is prismatic or subangular blocky.

The Bqk horizon is moderately alkaline or strongly alkaline. It is strongly effervescent or violently effervescent. Texture is stratified sand, loamy sand, or sandy loam. The horizon is 35 to 65 percent rock fragments, mainly pebbles.

Zibate Series

The Zibate series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rock, ashfall, tuff, and quartzite. These soils are

on hills and mountain slopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 57 degrees F.

Taxonomic class: Loamy-skeletal, mixed, thermic Lithic Haplargids.

Typical pedon: Zibate very gravelly sandy loam in a rangeland area of Zibate-Blacktop-Rock outcrop association, about 2 miles northeast of Silicon Mine, about 2,375 feet west and 1,955 feet south of the northeast corner of sec. 21, T. 11 S., R. 48 E.

A—0 to 4 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium platy structure parting to weak medium subangular blocky; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine vesicular pores; 50 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.2); clear smooth boundary. (3 to 10 inches thick)

Bt1—4 to 8 inches; yellowish brown (10YR 5/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; few thin clay films on peds and pores; 50 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.0); clear smooth boundary. (0 to 10 inches thick)

Bt2—8 to 15 inches; yellowish brown (10YR 5/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine roots; common fine tubular pores; few thin clay films on peds and in pores; 60 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.0); abrupt wavy boundary. (0 to 10 inches thick)

R—15 inches; hard, fractured rhyolitic tuff.

Range in characteristics

The profile usually is dry, but it is moist in some part of the moisture control section for short periods in winter and spring and for short intermittent periods following convection storms in summer. Soil temperature is 59 to 64 degrees F. Depth to bedrock is 4 to 20 inches. Reaction is mildly alkaline to strongly alkaline.

The A horizon has hue of 10YR or 7.5YR, and it has value of 3 to 6 when dry and 3 to 5 when moist. The horizon has platy or subangular blocky structure or is massive. Reaction is mildly alkaline to strongly alkaline. The A horizon is absent in some eroded phases.

The Bt horizon has hue of 10YR or 7.5YR, value of 3 to 5 when dry or moist, and chroma of 3 or 4. Texture of the fine earth fraction averages loam or clay loam. Clay content is 18 to 35 percent. The horizon is 60 to 85 percent rock fragments. It has subangular blocky structure or is massive. The horizon is soft to hard when dry and very friable to firm when moist, and it is slightly sticky and slightly plastic when wet. Reaction is mildly alkaline or moderately alkaline.

Formation of the Soils

Soil is a natural, three dimensional body at the Earth's surface that is capable of supporting plants. It is a dynamic mixture of mineral material, organic matter, air, and water. Each soil has distinctive properties that are the product of environmental forces acting upon earthy material over a period of time.

Many different kinds of soil are present within relatively short distances in the survey area. The differences among the soils are the result of the interaction of (1) parent material, including its physical characteristics and its mineralogical and chemical composition; (2) climate, mainly temperature and precipitation, both in terms of the average as well as the variation throughout the year; (3) relief, which influences features of the internal and external environment of the soil such as drainage, aeration, susceptibility to erosion, and exposure to the sun and wind; (4) biological forces, mainly the plant cover and the organisms living in and on the soil; and (5) the length of time these environmental forces have had to act on the soil material.

The survey area is in a transitional zone of disrupted structure between the Sierra-Nevada block and the Great Basin. Many of the present landforms are a result of events that took place during Quaternary time.

Climate

Climate affects soil formation through its effect on vegetation, weathering, water transport, and erosion. The main climatic factors that influence soil formation in this survey area are precipitation, wind, and temperature.

The climate of the survey area is essentially continental. Summers are warm and dry, and winters are cool and moist. Temperature and precipitation throughout the area vary considerably with elevation, aspect, and, to some degree, storm track patterns. The average annual air temperature ranges from 60 degrees F at lower elevations in the extreme southern parts of the survey area to 45 degrees or less on high mountain slopes. The average annual precipitation ranges from about 4 inches at the lowest elevation to more than 16 inches at the higher elevations. Precipitation patterns, particularly as they relate to time of the year and intensity of storms, play an important role in the formation of soils in this area.

The summer convection storms do not account for a very large part of the total precipitation. Because of their intensity and frequency of occurrence over the years, however, these storms play an extremely important role in soil formation in this area. Unless the soils are protected by plant cover or are in a position that has favorable relief, they are subject to erosion. This results in a large number of relatively young soils in this area. The soils in the survey area reflect a general zonation with respect to elevation.

At the lower elevations in the survey area, the average annual precipitation is about 4 to 8 inches. In this arid part of the area, weathering of parent material is slow, leaching is incomplete, and eluviation and illuviation proceed at a very slow rate. The plant cover is sparse and consists mainly of drought- and salt-tolerant shrubs. Typically, the soils are low in content of organic matter and have a thin, light colored A horizon. Soluble salts and calcium carbonate accumulate in the soil profile at a relatively shallow depth. Typic Torriorthents characterize soils that reflect soil formation in this arid part of the area.

At the intermediate elevations, the average annual precipitation is about 8 to 12 inches. As elevation increases there is an accompanying increase in precipitation, which results in deeper leaching of salts and calcium carbonate, lower reaction, changes in the kind and density of vegetation, and a thicker and darker colored A horizon. Xerollic Haplargids such as those of the Breko series are typical of soils that formed at the lower elevations in this zone, where precipitation is about 10 inches. Aridic Argixerolls such as those of the Tulecan series are examples of soils that formed at the higher elevations in this zone.

At the higher elevations, the precipitation is 12 to 16 inches and the temperature is lower. The vegetation is mostly pinyon and juniper or, at the highest elevations, it is sagebrush along with a greater amount and variety of grasses. Leaching of salts and carbonates has been more intensive, the soils are neutral or slightly acid, and the A horizon is thick and is high in content of organic matter. Typic Argixerolls such as those of the Ravenswood series and Argic Pachic Cryoborolls such as those of the Kiote series are typical of soils that formed at the higher elevations.

The effect of wind on soil formation in this area is exhibited in several ways. A desert pavement is a typical feature of Typic Durargids such as those of the Tokoper series. The movement and deposition of sand in sand sheets or sand dunes is characteristic of Typic

Torripsamments such as those of the Stumble and Kawich series. The recharge of carbonate dust is involved in creating calcareous soils that formed in residuum of noncalcareous parent material. An example is Typic Torriorthents such as those of the Pumel series.

In winter, freezing and thawing generally occur throughout most of the survey area, except in the southern part. The effects of frost action are discernible by the heaving of plants and by the erosion of the surface layer as a result of solifluction. In some areas at the higher elevations, freezing and thawing have fractured and displaced the bedrock. Argic Cryoborolls such as those of the Hiridge series, which have a loamy-skeletal control section, are examples of soils at high elevations that have been affected by frost action.

In summer, the hot sun and lack of moisture drastically affect plant growth, especially in the southern part of the area. This effect is shown in both the lack of variety of plants and in their root distribution. The lack of roots in the surface layer results in the presence of very small amounts of organic matter in these soils. Typic Torriorthents such as those of the Orwash series are an example.

Relief

Relief, through its effects on drainage, runoff, erosion, and exposure to the sun and wind, has had an important effect on soil formation in this survey area. The mountain ranges, valleys, and flood plains reflect the gross variations in relief within the area.

The mountain ranges are mainly characterized by steep relief. Runoff is rapid, and the hazard of erosion is high. The removal of material by erosion inhibits or prevents soil development. Development in soils on unstable mountain surfaces that are subject to a high rate of geologic erosion is primarily limited to accumulation of organic matter to form a dark-colored horizon. A cambic or an argillic horizon has formed in the soils on the more stable mountain surfaces, where the rate of geologic erosion has been slower. Xerollic Haplargids such as those of the Espint series, Aridic Argixerolls such as those of the Ubehebe series, and Typic Argixerolls such as those of the Cucamungo series are examples of soils that formed on the more stable mountain slopes and have an argillic horizon. Lithic Torriorthents such as those of the Blacktop series and Lithic Xeric Torriorthents such as those of the Beelem series are examples of soils on less stable mountain slopes, where soil formation has been unable to act on parent material long enough for any of the aforementioned horizons to have developed.

Soils on concave and north-facing slopes, where snow pockets form and remain until late in spring or early in summer, support dense stands of shrubs and grass. The soils in these areas have developed a thick, dark-colored A horizon that has a high content of organic matter. Argic Pachic Cryoborolls such as those of the Kiote series are an example of these soils.

The upper piedmont slopes commonly are dissected with stable interfluvial surfaces on the fan remnants and in the narrow drainageways. The fan remnant surfaces generally have been stable long enough for strong development to have occurred. Duric Haplargids such as those of the Ardivey series and Typic Durargids such as those of the Tomel series are examples of soils that formed on these surfaces. These upper piedmont slopes may be overlain locally by more recent alluvium, or a fan skirt. These soils generally do not exhibit strong development. Typic Camborthids such as those of the Koyen series are an example of these soils.

The lower parts of the piedmont slopes are more gently sloping and are not so sharply dissected. These soils generally have fewer rock fragments throughout the profile because of the greater distance from the bordering mountains. The soils on the broad summits of the fan remnants typically are stable and have a well developed profile. Typic Haplargids such as those of the Papoose series are an example of these soils.

On the alluvial flats, which are at the end of the piedmont slopes, on the outer margin of the bolson floor, and on the axial stream flood plains that are perpendicular to the piedmont slopes, are nearly level, well drained soils that carry very low velocity floodwater and runoff and allow some deposition to take place *(11)*. These areas are represented by Typic Torrifluvents such as those of the Slaw and Cirac series. At the end of the alluvial flats and flood plains, adjacent to the playas, drainage is restricted, runoff is very slow, and salts accumulate. Aeric Halaquepts such as those of the Settlement series are an example of soils in these areas.

Biological Forces

Plants, animals, insects, and microflora are important biological forces that affect soil formation in the survey area. Although animals, such as badgers and ground squirrels, and insects, such as cicadas, have had some effect on soil development, plants appear to have had the major biological influence on the soils in this survey area.

Because of the intensity of the summer storms, the vegetation is particularly important in this area because it affects soil erosion. Where vegetation is sparse, the lack of cover results in a high rate of geological erosion. Lithic Torriorthents such as those of the Pintwater series and Typic Torriorthents such as those of the Izo series are examples. In areas where the plant cover is thick, the cover protects the soils from intense rains and the many roots help to protect the soils from erosion. Typic Argixerolls such as those of the Ravenswood series are an example of soils in these areas.

Because of climatic differences, plants vary considerably in kinds and amounts as elevation

increases. On alluvial flats, fan piedmonts, and hills at low elevations, the main plants are drought- and salt-tolerant shrubs. Because of the scarcity of available moisture, plants cover only a small part of the surface. They add little organic matter to the soils and provide little protection from the wind and sun. Salt-tolerant shrubs also tend to recycle salts from the deeper layers to the surface layer.

The mountainous areas support denser stands of shrubs, grasses, and, in some place, trees. Because of the more abundant vegetation, the A horizon of the soils in these areas is thick, is high in content of organic matter, and is dark in color.

Parent Material

Parent material is the earthy material in which soils are formed. The physical and chemical composition of the parent material greatly influences the formation of soils. The main sources of parent material in this survey area are volcanic, sedimentary, and plutonic rocks; alluvium; and eolian deposits. The volcanic rock, including basalt, rhyolite, and silicic tuff, is the main source of parent material in the Monte Cristo Range, the Volcanic Hills, the Mount Montgomery area, the central part of the Silver Peak Range, the Grapevine Mountains, the Gold Mountain area, the Mount Jackson Ridge area, Clayton Ridge, the northern Montezuma Range, the Goldfield Hills, and the mountains in the Tonopah area. Volcanic rock generally contains minerals that may weather into clay if time and climatic conditions are favorable. For this reason an argillic horizon forms in soils that developed in residuum and colluvium derived from this parent material and that are on stable slopes. Lithic Haplargids such as those of the Downeyville series and Lithic Argixerolls such as those of the Bellehelen series are examples of these soils.

The sedimentary formations, including sandstone, siltstone, dolomite, limestone, and quartzite, all of which exhibit varying degrees of metamorphism, are the main sources of parent material in the Mineral Ridge area, the northern and south-central parts of the Silver Peak Range, including the Palmato and Magruder Mountains, the eastern Slate Ridge area, the southwestern area of the Montezuma Range, and the Paymaster Ridge-Weepah Hills area. There are two main kinds of sedimentary parent material: (1) Those that are high in content of carbonates, such as limestone and dolomite, and (2) those that have little if any carbonates, such as siltstone, sandstone, and quartzite. Carbonates have a tendency to disrupt the formation of an argillic horizon; thus, those that have large amounts of carbonates in the parent material do not have an argillic horizon. Lithic Xeric Torriorthents such as those of the Kyler series and Typic Calcixerolls such as those of the Sylvaniam series are examples of these soils.

The plutonic rocks, the predominant mineralogy of which is quartz monzonite, are the major source of parent material in the White Mountains, the southern part of the Silver Peak Range, the Last Chance Range, the western Slate Ridge area, and the Lone Mountain area. The relatively large amount of quartz mineral and its resistance to weathering results in an abundance of coarse sand particles and fine-sized pebbles. Typic Torriorthents such as those of the Pumel series and Typic Xerorthents such as those of the Lazan series are examples of these soils. Plutonic rocks also contain minerals that may weather into clay when time and climatic conditions are favorable. For this reason an argillic horizon forms in soils that developed in residuum derived from this parent material and are on stable slopes. Xerollic Haplargids such as those of the Armoine series and Typic Argixerolls such as those of the Cucamungo series are examples of these soils.

Alluvium deposited as alluvial fans, fan piedmonts, fan skirts, and alluvial flats consists of sandy, loamy, silty, or clayey material of generally mixed mineralogy that has been eroded from the adjacent mountains. Alluvium deposited on fans and fan piedmonts is mostly loamy or sandy and has varying amounts of pebbles, cobbles, and stones. Duric Haplargids such as those of the Unsel series are an example of these soils.

Eolian material consisting mainly of sand has been deposited in large areas of Big Smoky Valley, Fish Lake Valley, and Clayton Valley. These deposits occur as sand sheets, most of which have been reworked by wind and water, and as sand dunes. Examples of these soils are Typic Torripsamments such as those of the Stumble and Kawich series.

Time

Time is required for the formation of soils. The time available for a soil to develop in unconsolidated material is the time that has elapsed since the last deposits were laid down. Soils that formed in material derived from sedimentary or igneous rock began to develop after the parent rock weathered into permeable material. The thickness and other characteristics of the A and B horizons reflect the relative age of the soil.

The soils in this survey area range from a few years in age to possibly a few hundred thousand years. This large range in age is a major reason for the many kinds of soils in the survey area.

The interrelations between time and the other soil-forming factors are not well understood by soil scientists and geologists working in this field. Many soil scientists and geologists feel that weathering of parent material and soil profile development have been essentially continuous, with little change in rate throughout Quaternary time *(9, 10, 13, 16)*.

Recently, earth scientists concerned with differentiating Quaternary deposits have proposed that

soil development has not proceeded continuously at the same rate, but it has taken place intermittently at a rapid rate *(6, 7, 8, 12)*. Concepts of soil stratigraphy use weathering profiles as stratigraphic markers to differentiate and correlate Quaternary deposits. These concepts of soil development are based on the assumption that weathering profiles formed in response to infrequent combinations of climatic factors that induced minimal erosion and deposition and a greatly accelerated rate of chemical weathering.

Although disagreements exist in regard to the relative influences of time and other soil-forming factors, the concept of intermittency of soil formation has been supported by numerous studies and provides a practical technique to discuss the age of soils in this survey area in relation to geologic and climatic factors in the Quaternary.

The kinds of diagnostic subsurface horizons and other subsurface diagnostic properties, together with their strength of expression, provide general clues to the age of the soils in the area. Important subsurface diagnostic horizons present in soils within the area include argillic, natric, cambic, calcic, and petrocalcic horizons and horizons exhibiting silica cementation.

Prominent argillic horizons in this area generally occur only in soils that formed primarily during the Pleistocene. This concept has been established by studies in the Southwest *(4, 5)* and is further supported in Soil Taxonomy *(15)*. With increasing age and constancy of other conditions, argillic horizons become finer in texture, become somewhat thicker, and tend to develop abrupt upper boundaries. Weakly expressed, thin argillic horizons may have formed during very late Pleistocene or early Holocene time.

Natric horizons are special kinds of argillic horizons that formed under the influence of high exchangeable sodium content. The effect of sodium on the dispersion of clay may tend to accelerate the rate of formation of argillic horizons. This is not believed to be significant, however, except in weakly expressed natric horizons that formed on Holocene surfaces. Following the formation of argillic horizons, prominent natric horizons may have developed as a result of sodium supplied by deposition of surficial loess, which is believed to be an important present-day process that affects the physical and chemical properties of the soils in the survey area.

Cambic horizons in soils within the area formed for the most part on Holocene surfaces. Original stratification is absent, and carbonates have been removed and redeposited in underlying horizons. Investigations in southern New Mexico indicate that cambic horizons in that region are less than about 5,000 years old. Cambic horizons in the survey area and in other areas in northern Nevada generally have been thought to be less than 10,000 years old, and possibly less than 7,000 years. This age has been determined mostly as a result of soil mapping in areas below the last high stage of Pleistocene Lake Lahontan *(7, 8, 9, 10)*.

The youngest soils in the area are those that formed in recently transported alluvium or in material that has been recently exposed by erosion. Typic Torriorthents such as those of the Arizo series are an example of soils that formed in recent alluvium. Typic Torrispamments such as those of the Kawich series formed in recently deposited eolian sand. These soils exhibit little if any profile development.

Somewhat older than the youngest soils are soils on fan skirts and alluvial flats that have developed weakly expressed horizons. These soils in some areas have cambic horizons or thin argillic horizons. The lower horizons have an accumulation of calcium carbonate and silica in the form of pendants on the rock fragments. Examples of these soils are Duric Camborthids such as those of the Keefa series.

Soils of intermediate age are more strongly developed and have distinctive horizons. These soils have thicker, well developed argillic horizons, and in some areas they have durinodes, strongly developed silica- and lime-cemented hardpans, or calcic horizons. Duric Haplargids such as those of the Unsel series, Entic Durorthids such as those of the Noyson series, and Calcixerolls such as those of the Sylvaniam series are examples of these soils.

Soils on the oldest, most stable surfaces are most strongly developed. These soils exhibit strong profile development and have considerably more distinct horizons. Abruptic Durargids such as those of the Fuegosta series and Typic Palexerolls such as those of the Mohocken series are examples of the soils in these areas.

References

(1) Albers, J.P., and J.H. Stewart. 1972. Geology and Mineral Deposits of Esmeralda County, Nevada. Mackay School of Mines, University of Nevada, Bull. 78, 80 pp., illus.

(2) American Association of State Highway and Transportation Officials. 1982. Standard specifications for highway materials and methods of sampling and testing. Ed. 13, 2 vol., illus.

(3) American Society for Testing and Materials. 1974. Method for classification of soils for engineering purposes. ASTM Stand. D 2487-69. *In* 1974 Annual Book of ASTM Standards, Part 19, 464 pp., illus.

(4) Gile, L.H., and R.B. Grossman. 1968. Morphology of the argillic horizon in desert soils of southern New Mexico. Soil Sci., vol. 106, no. 1, pp. 6-15.

(5) Gile, L.H., and J.W. Hawley. 1966. Periodic sedimentation and soil formation on an alluvial fan piedmont in southern New Mexico. Soil Sci. Soc. of Am. Proc., vol. 30, pp. 261-268.

(6) Morrison, R.B. 1964. Lake Lahontan: Geology of the Carson Desert, Nevada. U.S. Geol. Surv. Prof. Pap. 401, 156 pp., illus.

(7) Morrison, R.B. (n.d.) Soil stratigraphy: Principles, applications to differentiation and correlation of Quaternary deposits and landforms, and applications to soil science. Ph.D. thesis, University of Nevada.

(8) Morrison, R.B. 1965. Principles of Quaternary soil stratigraphy. *In* Quaternary Soils, INQA. Proc., vol. 9, VII Congress, pp. 1-69.

(9) Nikiforoff, C.C. 1942. Fundamental formula of soil formation. Am. J. of Sci., vol. 240, pp. 847-866.

(10) Nikiforoff, C.C. 1949. Weathering and soil evolution. Soil Sci., vol. 67, pp. 219-223.

(11) Peterson, Frederick F. 1981. Landforms of the Basin and Range province defined for soil survey. NV Agric. Exp. Stn. Tech. Bull. 28, 52 pp., illus.

(12) Richmond, G.M. 1962. Quaternary geology of the La Sal Mountains, Utah. U.S. Geol. Surv. Prof. Pap. 324, 135 pp., illus.

(13) Springer, M.E. (n.d.) Soil formation in the desert of the Lahontan Basin, Nevada. Ph.D. thesis, University of California.

(14) United States Department of Agriculture. 1951. Soil survey manual. U.S. Dep. Agric. Handb. 18, 503 pp., illus.

(15) United States Department of Agriculture. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436, 754 pp., illus.

(16) Ward, W.T. 1965. Soils of the Adelaide Area, South Australia, in relation to time. *In* Quaternary soils, INQA Proc., vol. 9., VII Congress: 293-306.

(17) United States Department of Agriculture. 1981. National handbook of plant names, 430-VI. Soil Conserv. Serv.

(18) United States Department of Agriculture. 1983. National soils handbook 430-VI, part 603.03. Soil Conserv. Serv.

Glossary

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher), or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted. The degrees of alkalinity are:

	ESP
Nonalkali	Less than 15
Slightly alkali	15 to 40
Strongly alkali	More than 40

Alluvial fan. A semiconical, or fan-shaped, constructional major landform that is mainly stratified alluvium with debris flow deposits in some areas. It is on the upper margin of a piedmont slope, and its apex is a source of alluvium debouching from a mountain valley into an intermontane basin. Also, a generic term for similar landforms in various other landscape positions.

Alluvial flat. The nearly level alluvial surface between a piedmont slope and the playa of a bolson or the axial-stream flood plain of a semibolson. This landform can include both recent and relict components.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Back slope. The slope component that is the steepest, straight to concave or merely concave, middle part of an erosional slope.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bar (offshore and barrier). A component landform comprised of elongated, commonly curving, low ridges of well sorted sand and gravel that stand above the general level of a bolson floor. It is the result of the wave action of a Pleistocene lake.

Basal area. The area of a cross section of a tree. It is a measure of stand density, commonly expressed in square feet. For pinyon pine and juniper stands, it is the section at a height of 1 foot and is measured outside the bark.

Base saturation. The degree to which material having cation exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation exchange capacity.

Basin. A general term for an intermontane basin, a bolson, a semibolson, an area of centripetal drainage, or a structural depressional area.

Basin floor. The lowermost, nearly level major physiographic part of a bolson or semibolson. It includes all alluvial, eolian, and erosional landforms that are below the piedmont slopes.

Basin-floor remnant. A generally flat-topped erosional remnant of a basin floor that has been dissected by an axial stream.

Beach plain. A major landform of bolson floors comprised of numerous, closely spaced offshore bars and intervening lagoons. It is the result of a receding Pleistocene lake.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bolson. An internally drained intermontane basin.

Bolson floor. The specific identification of the floor of a bolson, as compared with the floor of a semibolson; both are basin floors.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Brush management. Use of mechanical, chemical, or biological methods to reduce or eliminate competition of woody vegetation to allow understory grasses and forbs to recover, or to make conditions favorable for reseeding. It increases production of forage, which reduces erosion. Brush management may improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Channel. The bed of a single or braided waterway that commonly is barren of vegetation. Channels form in young alluvium. They may be enclosed by banks, or they may be splayed across a fan surface and slightly mounded above it. They may include bars and dumps, consisting of cobbles and stones. Channels, except flood plain playas, are landform elements.

Chemical treatment. Control of unwanted vegetation by use of chemicals.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter, in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clay skin. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay film.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.5 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent cobble-sized rock fragments, and extremely cobbly soil material is more than 60 percent.

Colluvium. Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Component landform. A feature of the Earth's surface that is part of a major landform and was created by partial dissection of the major landform or by alluvial or eolian accretion. A component landform is the smallest type of landform that can be described as a single unit. Its morphological parts are called landform elements, and a side slope element can be subdivided into slope components.

Conglomerate. A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. If soil improving crops and practices used in the system more than offset the soil depleting crops and deteriorating practices, then it is a good conservation cropping system. Cropping systems are needed on all tilled soils. Soil improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—Readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine-earth soil material stabilized around shrubs or small trees.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crest. The slope component comprising a very narrow, commonly linear top of a landform such as an erosional ridge, hill, or mountain.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure,

organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops using a planned system of rotation and management practices.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or arresting grazing for a prescribed period.

Desert pavement. A layer of gravel or coarser fragments on a desert soil surface that was emplaced by upward movement of fragments from underlying sediment or remains after finer particles have been removed by running water or wind.

Desert stream valley. A valley cut through several desert semibolsons by a perennial, mountain-fed stream.

Desert varnish. A glossy sheen or coating on stones and gravel in arid regions.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—These soils have very high and high hydraulic conductivity and low water holding capacity. They are not suited for crop production unless irrigated.

Somewhat excessively drained.—These soils have high hydraulic conductivity and low water holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.

Well drained.—These soils have intermediate water holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.

Moderately well drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless artificial drainage is provided. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless artificial drainage is provided. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained.—These soils commonly are so wet at or near the surface during a considerable part of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained.—These soils are wet to the surface most of the time. They are wet enough to prevent the growth of important crops (except rice) unless artificially drained.

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley, generally more open and with broader bottom land than a ravine or gulch.

Duff. A term used to identify a generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Effervescence. The quality of a soil measured when drops of diluted (1:10) hydrochloric acid (HCl) are added to the soil. The ratings are as follows:

Very slightly effervescent	Few bubbles
Slightly effervescent	Bubbles readily
Strongly effervescent	Bubbles form low foam
Violently effervescent	Bubbles form thick foam quickly

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a

catastrophe in nature; for example, fire that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and produced by erosion or faulting. Synonym: scarp.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the Earth's surface.

Fan apron. A component landform consisting of a sheetlike mantle of relatively young alluvium that partially covers the surface of an older fan piedmont or, in some places, an alluvial fan. A fan apron buries a pedogenic soil.

Fan piedmont. The most extensive major landform of most piedmont slopes. It is formed by the lateral coalescence of mountain-front alluvial fans into one generally smooth slope and by accretion of fan aprons. Fan piedmonts commonly are complexes of many component landforms.

Fan remnant. A generic term for a component landform that is the remainder of various older fans that have been dissected (erosional fan remnants) or partially buried (nonburied fan remnants). Erosional fan remnants have a flattish summit that consists of a relict fan surface; nonburied fan remnants consist entirely of a relict fan surface.

Fan remnant side slope. A landform element comprised of the relatively young erosional slope around the sides of an erosional fan remnant. It is composed of shoulders, back slopes, and foot slopes.

Fan skirt. A major landform comprised of laterally coalescing, small alluvial fans that originate from gullies that are cut into or extend from inset fans of a fan piedmont and merge along their toe slopes with the basin floor. Fan skirts are smooth or only slightly dissected.

Fine textured soil. Sandy clay, silty clay, and clay.

Flood plain. The transversely level floor of an axial stream of a semibolson or of a major desert stream valley that is occasionally or regularly alluviated by the stream overflowing its channel during periods of flooding.

Flood-plain playa. A component landform consisting of very low gradient, barren, axial stream segments in an intermontane basin. It is subject to broad and shallow floods and is veneered with barren, fine textured sediment that crusts. A flood plain playa commonly is segmented by transverse, narrow bands of vegetation, and it may alternate with ordinary, narrow or braided channel segments.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Foot slope. The relatively gently sloping, slightly concave slope component of an erosional slope that is at the base of the back slope component. Synonym: pediment.

Forb. Any herbaceous plant not a grass or a sedge.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter. Very gravelly soil material is 35 to 60 percent gravel-sized rock fragments, and extremely gravelly is more than 60 percent.

Hard rock. Rock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by silica or calcium carbonate.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well-defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky

structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the number 2 precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors of predicting runoff. The four hydrologic groups are:

Group A.—Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B.—Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C.—Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D.—Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Inset fan. The flood plain of a commonly ephemeral stream that is confined between fan remnants, basin floor remnants, ballenas, or closely opposed fan toe slopes. Its transversely level cross section is evidence of alluviation of a fluve. It is wide enough that raw channels cover only a fraction of its surface.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Irrigation. Application of water to soils to assist in production of crops.

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A major landform of some bolson floors that is nearly level and consists of fine textured, stratified bottom sediment of a Pleistocene lake.

Lake-plain terrace. A somewhat elevated area and component landform of a lake plain.

Landform element. The morphological part of a component landform. Side slope landform elements may be divided into slope components.

Leaching. The removal of soluble material from soil or other material by percolating water.

Light textured soil. Sand and loamy sand.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Major landform. A subdivision of the piedmont slope or basin floor major physiographic part that reflects a major morphogenetic process taking place over a long period of time or that is the result of a special erosional or depositional process. Many major landforms are dissected, and their original area is occupied by component landforms.

Major physiographic part. The very large part of an intermontane basin that is characterized by dominant slope and position and is comprised of major landforms (i.e., steeply sloping mountains that stand above less sloping piedmonts that in turn grade to nearly level basin floors).

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides and considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Mountain-valley fan. A major landform that is the result of alluvial filling of a mountain valley or intramontane basin by coalescent valley-side slope fans whose toe slopes meet from either side of the valley along an axial drainageway. It is an extension of the upper piedmont slope into mountain valleys. Most mountain-valley fans have been dissected.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color in hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan* or *claypan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pediment. The foot slope component of an erosional slope.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	Less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2 to 6 inches
Rapid	6 to 20 inches
Very rapid	More than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Plain. A flat, undulating or rolling area, large or small, that includes few prominent hills or valleys. It generally is at a low elevation in relation to surrounding areas, and it may have considerable overall slope and local relief.

Playa. An ephemerally flooded, barren area on a basin floor that is veneered with fine textured sediment and acts as a temporary or final sink for drainage water.

Piping. Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressional areas. The water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. The application of fire to land under such conditions of weather, soil moisture, and time of day as presumably will result in the intensity of heat and spread required to accomplish specific forest management, wildlife, grazing, or fire hazard reduction purposes.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This increases the vigor and reproduction of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relict. Old, or remaining from previous times; in the present context, of Pleistocene age.

Relief. The elevations or inequalities of a land surface, considered collectively.

Remnant. The remainder of a larger landform or of a land surface that has been dissected or partially buried.

Residuum (residual soil material). Unconsolidated, weathered, or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Ridgeline remnant. A narrow ridge that has a fully rounded crest and is accordant with the crests of similar, nearby ridges. Together these accordant crests approximately mark the position of a pre-existing land surface that has been destroyed by dissection.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water. Six classes of runoff are recognized:

Ponded.—Little of the precipitation and runon escapes as runoff, and free water stands on the surface for significant periods. The amount of water that must be removed from ponded areas by movement through the soil, by plants, or by evaporation is usually greater than the total rainfall. Ponding normally occurs in level to nearly level depressional areas, and the water depth may fluctuate greatly.

Very slow.—Surface water flows away slowly, and free water stands on the surface for long periods or immediately enters the soil. Most of the water passes through the soil, is used by plants, or evaporates. The soils commonly are level or nearly level or are very open and porous.

Slow.—Surface water flows away slowly enough that free water stands on the surface for moderate periods or enters the soil rapidly. Most of the water

passes through the soil, is used by plants, or evaporates. The soils commonly are either nearly level or very gently sloping or they are steeper but absorb precipitation very rapidly.

Medium.—Surface water flows away fast enough that free water stands on the surface for only short periods. Part of the precipitation enters the soil and is used by plants, is lost by evaporation, or moves into underground channels. The soils commonly are either nearly level or gently sloping and absorb precipitation at a moderate rate or they are steeper but absorb water rapidly.

Rapid.—Surface water flows away fast enough that the period of concentration is brief and free water does not stand on the surface. Only a small part of the water enters the soil. The soils are mainly moderately steep or steep, and they have a moderate to slow rate of absorption.

Very rapid.—Surface water flows away so fast that the period of concentration is very brief and free water does not stand on the surface. Only a small part of the water enters the soil. The soils are mainly steep or very steep, and they absorb precipitation slowly.

Runon. Soil moisture received as runoff from adjacent areas.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium. The conductivity of extract, in millimhos per centimeter, is expressed as—

	Millimhos
Nonsaline	0 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	More than 16

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sand dune. A component landform made up of eolian, sand-sized mineral particles. Dunes commonly are on the leeward side of a Pleistocene lakebed.

Sand sheet. A major landform comprising an extensive, several-foot-thick layer of eolian sand from pluvial lake beaches, sometimes partly redeposited by water. It is spread across alluvial flats, onto piedmont slopes, or even over low mountains and has an undulating and commonly duned surface.

Sandstone. Sedimentary rock containing dominantly sand-size particles.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Semibolson. An externally drained intermontane basin.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Shoulder. The convex slope component at the top of an erosional side slope.

Side slope. The erosional slope around the sides of an erosional fan remnant, hill, ballena, mountain, etc. It is composed of shoulders, back slopes, foot slopes, and toe slopes. Also, the planimetrically linear parts of the slopes around a digitately dissected fan remnant or hill, or other landform, as compared with the planimetrically convex nose slope and concave head slope parts.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Site index. A designation of the quality of a forest site. For pinyon pine and juniper stands, it is based on tree diameter at a height of 1 foot height and the spacing between trees.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey the following slope classes are recognized:

	Percent
Nearly level	0 to 2
Gently sloping	2 to 4
Moderately sloping	4 to 8
Strongly sloping	8 to 15
Moderately steep	15 to 30
Steep	30 to 50
Very steep	50 to 75
Extremely steep	More than 75

Slope component. A morphological element of an erosional slope and a morphological subdivision of the side slope landform element.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher), or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $Ca^{++} + Mg^{++}$. The degrees of sodicity are—

	SAR
Nonsodic	Less than 13
Slightly sodic	13 to 46
Strongly sodic	More than 46

Soft rock. Rock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	Less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 6 to 15 inches (15 to 38 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony soil material. Material, commonly a subsurface layer, that is 15 to 35 percent, by volume, rock fragments that are mainly 10 to 24 inches (25 to 60 centimeters) in diameter. Very stony soil material is 35 to 60 percent stone-sized fragments, and extremely stony soil material is more than 60 percent.

Stream terrace. A transversely level erosional remnant of a former axial stream or major desert stream flood plain that slopes in the same direction as the adjacent, incised stream and is underlain by well-sorted, stratified sand and gravel or by loamy or clayey sediment.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Summit. The flattish top of an erosional fan remnant, hill, mountain, or other landform. The term is used for both a landform element and a slope component.

Tail water. The water just downstream of a structure.

Talus. Rock fragments of any size or shape, commonly coarse and angular, derived from and lying at the base of a cliff or very steep, rock slope. The accumulated mass of such loose, broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. Any part of a general slope that stands above a short, steep scarp and has a generally flat, nearly level or gently sloping summit. It may have another short scarp above the summit. Synonym: bench.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Toe slope. The lowest part of a foot slope component of an erosional slope. It is distinguished from the upper part of a foot slope by a greater accumulation of pedisediment. Also, the lowest and most gently sloping part of a slope.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Valley. An elongated depressional area cut by stream erosion and the associated water erosion of its side slopes (stream valley). Also used for intermontane basins.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water supplying capacity. The total amount of water available in the soil for plant growth in a normal year from precipitation, from runon, and from a capillary fringe minus runoff.

Water table. The upper level of ground water or that level below which the soil is saturated.

Water table (perched). The water table of a saturated layer of soil that is separated from an underlying saturated layer by an unsaturated layer.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the Earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Tables

TABLE 301.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1951-80 at Dyer, NV]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	46.0	15.0	30.5	66	-10	32	0.28	---	0.50	1	2.7
February---	52.7	21.4	37.1	70	2	44	0.44	---	0.78	1	2.4
March------	58.6	24.4	41.5	77	4	127	0.36	---	0.62	1	2.5
April------	66.4	30.3	48.4	84	14	270	0.46	---	0.79	1	1.9
May--------	76.1	38.4	57.3	92	20	536	0.52	0.02	0.87	1	0.4
June-------	86.4	46.0	66.2	102	28	786	0.33	---	0.56	1	0.0
July-------	93.9	52.5	73.2	103	40	1,029	0.51	0.07	0.84	2	0.0
August-----	91.5	50.2	70.9	102	36	958	0.39	---	0.68	1	0.0
September--	83.9	41.8	62.9	97	26	687	0.48	---	0.81	1	0.0
October----	71.9	32.1	52.0	89	13	372	0.34	---	0.57	1	0.3
November---	57.0	22.1	39.6	75	4	66	0.47	---	0.81	1	1.6
December---	47.7	15.5	31.6	64	-5	14	0.30	---	0.52	1	1.0
Yearly:											
Average--	69.3	32.5	50.9	---	---	---	---	---	---	---	---
Extreme--	---	---	---	104	-12	---	---	---	---	---	---
Total----	---	---	---	---	---	4,921	4.88	3.13	6.62	13	12.8

See footnote at end of table.

TABLE 301.--TEMPERATURE AND PRECIPITATION--Continued

[Recorded in the period 1951-80 at Tonopah, NV]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	43.3	17.8	30.6	62	-6	34	0.30	0.05	0.49	1	2.5
February---	48.6	23.1	35.9	67	4	58	0.52	0.01	0.87	1	3.0
March------	54.7	26.7	40.7	73	11	126	0.34	---	0.58	1	1.5
April------	62.1	32.1	47.1	81	17	246	0.33	---	0.56	1	1.1
May--------	72.4	41.3	56.9	90	25	524	0.57	0.05	0.96	2	0.3
June-------	83.5	50.3	66.9	99	34	807	0.33	---	0.56	1	0.0
July-------	91.1	56.2	73.7	101	44	1,045	0.57	0.08	0.95	2	0.0
August-----	88.4	54.2	71.3	100	40	970	0.50	---	0.87	1	0.0
September--	80.2	46.6	63.4	93	31	702	0.52	0.01	0.89	1	0.0
October----	68.6	36.8	52.7	84	21	398	0.39	---	0.65	1	0.1
November---	54.1	26.1	40.1	73	10	85	0.37	---	0.63	1	0.9
December---	45.7	19.5	32.6	62	0	37	0.22	---	0.38	1	1.2
Yearly:											
Average--	66.1	35.9	51.0	---	---	---	---	---	---	---	---
Extreme--	---	---	---	102	-8	---	---	---	---	---	---
Total----	---	---	---	---	---	5,032	4.96	3.33	6.44	14	10.6

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for range vegetation in the area (40 degrees F).

TABLE 302.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1951-80]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Dyer, NV			
Last freezing temperature in spring:			
1 year in 10 later than--	May 22	May 30	June 12
2 years in 10 later than--	May 16	May 24	June 6
5 years in 10 later than--	May 5	May 14	May 25
First freezing temperature in fall:			
1 year in 10 earlier than--	September 27	September 19	September 7
2 years in 10 earlier than--	October 3	September 24	September 12
5 years in 10 earlier than--	October 15	October 5	September 23
Tonopah, NV			
Last freezing temperature in spring:			
1 year in 10 later than--	May 7	May 22	May 29
2 years in 10 later than--	April 30	May 15	May 24
5 years in 10 later than--	April 17	May 3	May 15
First freezing temperature in fall:			
1 year in 10 earlier than--	October 11	October 1	September 24
2 years in 10 earlier than--	October 18	October 8	September 30
5 years in 10 earlier than--	October 31	October 20	October 10

TABLE 303.--GROWING SEASON

[Recorded in the period 1951-80]

Probability	Length of growing season if daily minimum temperature exceeds--		
	24 °F	28 °F	32 °F
Dyer, NV			
	Days	Days	Days
9 years in 10	140	122	92
8 years in 10	148	129	102
5 years in 10	162	143	120
2 years in 10	177	157	139
1 year in 10	184	164	149
Tonopah, NV			
	Days	Days	Days
9 years in 10	172	141	125
8 years in 10	181	151	133
5 years in 10	197	169	148
2 years in 10	214	189	163
1 year in 10	224	201	173

TABLE 304.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
100	Unsel-Belted-Orphant association	16,225	0.7
101	Unsel-Wardenot-Izo association	63,960	2.9
103	Unsel-Silverbow-Izo association	3,990	0.2
105	Unsel-Itme-Advokay association	1,430	0.1
106	Unsel-Wardenot-Terlco association	15,970	0.7
108	Unsel-Izo association	18,315	0.8
109	Unsel-Advokay-Blacktop association	1,560	0.1
110	Blacktop-Rock outcrop-Pintwater association	34,895	1.6
111	Blacktop-Rodad-Theriot association	69,900	3.1
112	Blacktop-Rock outcrop association	13,765	0.6
115	Blacktop-Rock outcrop-Wahguyhe association	3,060	0.1
120	Leo-Belcher association	1,140	0.1
121	Leo-Ardivey association	680	*
122	Leo-Izo association	4,440	0.2
124	Leo-Koyen association	1,555	0.1
126	Leo-Itme-Izo association	7,055	0.3
127	Leo-Unsel-Belcher association	3,940	0.2
128	Leo-Stonell association	2,265	0.1
130	Belcher-Timper-Noyson association	4,325	0.2
131	Belcher-Playas-Yomba association	5,800	0.3
140	Stumble loamy fine sand, 0 to 4 percent slopes	975	*
141	Stumble-Belcher-Izo association	2,055	0.1
142	Stumble-Leo association	7,370	0.3
144	Stumble-Wardenot-Unsel association	1,345	0.1
145	Stumble-Luning association	3,210	0.1
151	Kawich-Playas association	4,980	0.2
160	Yomba-Playas-Youngston association	13,465	0.6
161	Yomba-Wardenot-Izo association	9,295	0.4
162	Yomba-Playas-Youngston association, alkali	5,330	0.2
163	Yomba-Playas-Kawich association	8,520	0.4
164	Yomba-Kawich association	3,850	0.2
165	Yomba-Belcher association	595	*
180	Youngston-Playas association	1,635	0.1
190	Terlco-Wardenot association	3,525	0.2
191	Terlco-Advokay-Downeyville association	1,155	0.1
193	Terlco-Pintwater-Wardenot association	9,250	0.4
194	Terlco-Roic-Wardenot association	21,625	1.0
195	Terlco-Lyda-Lathrop association	5,335	0.2
196	Terlco-Unsel-Lathrop association	9,840	0.4
200	Zadvar-Stewval association	975	*
201	Zadvar-Veet-Lyda association	6,380	0.3
203	Zadvar-Armespan-Wrango association	11,010	0.5
211	Lomoine-Pumel-Rock outcrop association	10,595	0.5
220	Advokay-Itme association	1,845	0.1
221	Advokay-Blacktop-Itme association	12,670	0.6
222	Advokay-Blacktop association	4,920	0.2
224	Advokay-Ardivey-Leo association	2,810	0.1
225	Advokay-Blacktop-Tomel association	1,310	0.1
230	Stewval-Downeyville-Rock outcrop association	35,890	1.6
231	Stewval-Pintwater-Rock outcrop association	53,630	2.4
232	Stewval-Advokay-Itme association	4,330	0.2
233	Stewval-Blacktop-Rock outcrop association	2,695	0.1
234	Stewval-Bellehelen-Rock outcrop association	9,580	0.4
235	Stewval-Bellehelen-Gabbvally association	14,410	0.6
236	Stewval-Downeyville, moist-Rock outcrop association	4,285	0.2
237	Stewval-Gabbvally-Rock outcrop association	11,840	0.5
238	Stewval-Malmesa-Wahguyhe association	575	*
239	Stewval-Wahguyhe-Pintwater association	1,905	0.1
240	Settlement-Aquic Calciorthids complex	3,600	0.2
250	Theriot-Kyler-Rock outcrop association	4,755	0.2
251	Theriot-Rock outcrop association	4,390	0.2
252	Theriot-Kyler-Leo association	1,365	0.1
253	Theriot-Slatery-Rock outcrop association	6,000	0.3

See footnote at end of table.

TABLE 304.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
254	Theriot-Rodad-Leo association	1,535	0.1
270	Lathrop-Leo association	875	*
271	Lathrop-Itme association	28,330	1.3
272	Lathrop-Itme-Zadvar association	2,205	0.1
273	Lathrop-Terlco-Izo association	4,260	0.2
276	Lathrop-Wardenot-Lyda association	4,295	0.2
278	Lathrop-Belted-Veet association	2,085	0.1
280	Tognoni-Blacktop association	2,470	0.1
281	Tognoni-Blacktop-Downeyville association	2,165	0.1
282	Tognoni-Gabbvally-Malmesa association	5,110	0.2
290	Pumel-Rock outcrop-Itme association	1,205	0.1
291	Pumel-Rock outcrop association	9,115	0.4
294	Pumel-Upspring association	1,215	0.1
295	Pumel-Thike-Rock outcrop association	4,985	0.2
300	Itme association, sandy surface	4,075	0.2
301	Itme very stony loamy sand, 8 to 15 percent slopes, occasionally flooded	1,775	0.1
302	Itme-Luning-Wardenot association	4,865	0.2
304	Itme association	6,880	0.3
310	Gynelle-Oricto association	58,095	2.6
311	Gynelle-Cirac association	12,730	0.6
312	Gynelle-Oricto association, alkali	16,850	0.8
313	Gynelle-Luning association	8,765	0.4
314	Gynelle-Cirac-Oricto association	2,785	0.1
316	Gynelle-Wardenot association	1,655	0.1
317	Gynelle-Oricto association, warm	25,325	1.1
321	Oricto-Roic-Gynelle association	12,300	0.5
323	Oricto-Terlco-Roic association	8,390	0.4
326	Oricto-Blacktop-Gynelle association	1,795	0.1
327	Oricto-Gynelle association	3,040	0.1
331	Candelaria-Gynelle-Izo association	1,985	0.1
334	Candelaria-Izo association	3,010	0.1
340	Zaba very gravelly loam, 0 to 8 percent slopes	855	*
341	Zaba-Gynelle association	13,620	0.6
342	Zaba-Yomba-Slaw association	510	*
350	Roic-Oricto-Wardenot association	6,495	0.3
351	Roic-Vindicator-Rock outcrop association	6,110	0.3
352	Roic-Wardenot-Badland association	9,735	0.4
353	Roic-Stumble-Badland association	1,635	0.1
354	Roic-Stumble-Vindicator association	5,785	0.3
355	Roic-Gullied land complex, 2 to 8 percent slopes	970	*
356	Roic-Advokay-Blacktop association	4,545	0.2
360	Downeyville-Pintwater-Rock outcrop association	31,840	1.4
361	Downeyville-Pumel-Rock outcrop association	3,645	0.2
362	Downeyville-Blacktop-Rock outcrop association	62,299	2.8
363	Downeyville-Silverbow-Rock outcrop association	27,095	1.2
364	Downeyville-Vindicator-Advokay association	3,765	0.2
365	Downeyville-Gabbvally-Malmesa association	4,480	0.2
367	Downeyville-Gabbvally association	20,920	0.9
368	Downeyville-Pintwater-Upspring association	7,590	0.3
369	Downeyville-Advokay-Pintwater association	6,500	0.3
370	Rustigate-Louderback-Cirac association	8,685	0.4
371	Rustigate-Slaw-Playas association	315	*
372	Rustigate-Nuyobe association	5,895	0.3
373	Rustigate-Kawich-Cirac association	920	*
380	Nuyobe-Rustigate-Playas association	5,235	0.2
390	Noyson-Stumble-Izo association	3,650	0.2
391	Noyson-Lathrop-Itme association	16,470	0.7
400	Annaw-Wardenot-Ardivey association	73,710	3.3
402	Annaw-Wardenot-Pintwater association	3,860	0.2
410	Pintwater-Wardenot-Unsel association	11,570	0.5
411	Pintwater-Theriot-Wardenot association	895	*
413	Pintwater-Blacktop association	2,075	0.1
414	Pintwater-Blacktop-Downeyville association	3,060	0.1

See footnote at end of table.

TABLE 304.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
420	Vigus-Unsel-Izo association	925	*
421	Vigus-Fuegosta-Izo association	1,625	0.1
422	Vigus-Wardenot association	1,255	0.1
430	Slaw-Playas complex	9,290	0.4
431	Slaw-Kawich-Nuyobe association	10,785	0.5
432	Slaw-Kawich-Playas association	2,810	0.1
433	Slaw-Cirac association	7,875	0.4
440	Wardenot-Unsel-Yomba association	24,885	1.1
442	Wardenot-Izo association	18,245	0.8
443	Wardenot-Roic association	2,300	0.1
444	Wardenot-Terlco-Badland association	570	*
445	Wardenot-Gynelle-Stonell association	21,000	0.9
446	Wardenot-Annaw-Izo association	10,290	0.5
447	Wardenot-Annaw-Izo association, moist	3,050	0.1
449	Wardenot-Stonell-Roic association	6,950	0.3
450	Cirac-Oricto association	9,060	0.4
451	Cirac-Luning association	9,505	0.4
452	Cirac-Rustigate-Settlement association	7,255	0.3
453	Cirac-Gynelle-Oricto association	4,765	0.2
454	Cirac-Playas-Kawich association	6,790	0.3
455	Cirac-Kawich association	11,185	0.5
460	Tomel-Ardivey-Wardenot association	36,230	1.6
462	Tomel-Wardenot association	10,550	0.5
470	Ardivey-Unsel-Wardenot association	23,285	1.0
471	Ardivey-Izo association	3,985	0.2
472	Ardivey-Wardenot-Lyda association	3,340	0.1
473	Ardivey-Veet-Vindicator association	1,790	0.1
475	Ardivey-Tomel-Izo association	4,475	0.2
476	Ardivey-Wardenot-Izo association	10,665	0.5
477	Ardivey-Downeyville-Leo association	1,245	0.1
480	Stonell-Wardenot-Izo association, moist	32,505	1.5
481	Stonell-Roic-Wardenot association	5,770	0.3
482	Stonell-Wardenot-Izo association	11,990	0.5
484	Stonell-Gynelle-Wardenot association	2,200	0.1
490	Weepah-Kyler-Rock outcrop association	10,760	0.5
491	Weepah-Rodad-Blacktop association	6,880	0.3
492	Weepah-Slatery-Penelas association	3,635	0.2
501	Eaglepass-Rock outcrop complex, 30 to 75 percent slopes	1,125	0.1
510	Silverbow-Wardenot-Izo association	14,270	0.6
511	Silverbow-Annaw-Ardivey association	7,315	0.3
520	Celeton-Dumps-Izo association	415	*
540	Veet-Leo association	655	*
541	Veet very gravelly sandy loam, 2 to 8 percent slopes	3,940	0.2
542	Veet-Laxal association	590	*
543	Veet-Veet Variant association	1,380	0.1
544	Veet-Ardivey-Espint association	1,295	0.1
550	Luning-Timper-Gynelle association	14,415	0.6
551	Luning-Sodaspring association	5,075	0.2
552	Luning-Candelaria-Pintwater association	1,745	0.1
560	Unsel Variant-Vindicator-Espint association	1,260	0.1
570	Espint-Vindicator association	5,715	0.3
571	Espint-Stewval-Vindicator association	1,150	0.1
590	Vindicator-Espint-Dumps association	1,040	*
591	Vindicator-Unsel-Leo association	2,805	0.1
592	Vindicator-Gabbvally-Advokay association	2,095	0.1
593	Vindicator-Downeyville-Blacktop association	8,495	0.4
600	Trailamp-Sylvaniam association	7,670	0.3
601	Trailamp-Entero association	2,595	0.1
610	Ubehebe-Logring-Penelas association	26,795	1.2
611	Ubehebe-Trailamp association	15,025	0.7
612	Ubehebe-Weepah association	2,630	0.1
620	Cucamungo-Tulecan-Ubehebe association	6,655	0.3
622	Cucamungo-Alcan association	6,185	0.3

See footnote at end of table.

TABLE 304.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
623	Cucamungo-Rock outcrop-Tulecan complex, 30 to 50 percent slopes	4,220	0.2
624	Cucamungo-Alcan-Thike association	5,655	0.3
630	Hiridge-Kiote-Rock outcrop association	5,705	0.3
631	Hiridge-Squawtip-Bellehelen association	735	*
632	Hiridge-Ravenswood Variant-Rock outcrop association	400	*
633	Hiridge-Ravenswood-Cucamungo association	5,130	0.2
640	Logring-Kyler-Ubehebe association	4,735	0.2
641	Logring-Brier-Armespan Variant association	795	*
650	Gabbvally-Stewval-Vindicator association	1,640	0.1
651	Gabbvally-Bellehelen-Stewval association	6,220	0.3
652	Gabbvally-Wahguyhe-Rock outcrop association	12,315	0.5
653	Gabbvally-Brier-Rock outcrop association	3,060	0.1
654	Gabbvally-Malmesa-Espint association	1,825	0.1
655	Gabbvally-Brier-Wahguyhe association	3,990	0.2
656	Gabbvally-Beelem-Rock outcrop association	3,360	0.1
658	Gabbvally-Downeyville-Rock outcrop association	6,470	0.3
660	Bellehelen-Brier-Stewval association	6,625	0.3
661	Bellehelen-Stewval association	4,770	0.2
680	Malmesa-Stewval-Gabbvally association	6,295	0.3
681	Malmesa-Wahguyhe-Bellehelen association	705	*
682	Malmesa-Gabbvally-Brier association	610	*
683	Malmesa-Gabbvally-Wahguyhe association	3,740	0.2
690	Entero-Penelas-Rodad association	8,980	0.4
691	Entero-Ubehebe-Penelas association	6,865	0.3
692	Entero-Penelas-Slatery association	7,540	0.3
693	Entero-Rodad association	2,680	0.1
700	Armoine-Blappert-Advokay association	1,620	0.1
701	Armoine-Tulecan association	10,365	0.5
702	Armoine-Blappert-Rock outcrop association	14,830	0.7
703	Armoine-Pumel-Rock outcrop association	3,355	0.1
704	Armoine-Rock outcrop-Tulecan complex, 30 to 50 percent slopes	6,400	0.3
705	Armoine-Penelas association	4,210	0.2
706	Armoine-Itme-Lathrop association	360	*
710	Tokoper-Blacktop association	9,600	0.4
711	Tokoper-Ardivey association	5,360	0.2
712	Tokoper-Stewval association	3,360	0.1
713	Tokoper-Upspring-Rock outcrop association	2,435	0.1
715	Tokoper-Downeyville-Pintwater association	16,250	0.7
720	Penelas-Weepah association	9,080	0.4
721	Penelas-Ubehebe-Entero association	7,170	0.3
723	Penelas-Slatery-Rock outcrop association	2,320	0.1
724	Penelas-Entero-Weepah association	11,160	0.5
730	Koyen-Stumble-Penoyer association	1,360	0.1
741	Tulecan-Ubehebe-Armoine association	4,535	0.2
760	Lazan-Rock outcrop-Cucamungo association	2,380	0.1
761	Lazan-Squawtip association	2,355	0.1
770	Alcan-Cucamungo association	8,955	0.4
780	Lyda-Ardivey-Izo association	9,875	0.4
781	Lyda-Itme-Lathrop association	3,160	0.1
790	Handpah-Zadvar-Lyda association	855	*
791	Handpah-Veet association	2,585	0.1
792	Handpah-Breko-Veet association	14,015	0.6
793	Handpah very gravelly loam, 2 to 15 percent slopes	3,830	0.2
794	Handpah-Tomel-Breko association	1,415	0.1
800	Garhill-Upspring-Rock outcrop association	3,275	0.1
811	Slatery-Rodad association	9,305	0.4
812	Slatery-Entero-Rock outcrop association	1,875	0.1
813	Slatery very gravelly loam, 8 to 30 percent slopes	3,225	0.1
820	Thike-Alcan association	2,175	0.1
821	Thike-Rock outcrop association	1,240	0.1
830	Yermo-Arizo association	19,950	0.9
831	Yermo-Skelon association	720	*
833	Yermo-Arizo-Skelon association	5,510	0.2

See footnote at end of table.

TABLE 304.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
851	Skelon-Yermo-Arizo association	4,105	0.2
860	Orwash-Arizo association, cool	2,400	0.1
861	Orwash-Arizo association	8,020	0.4
871	Arizo association	760	*
880	Scottcas-Yermo association	1,365	0.1
881	Scottcas-Skelon-Yermo association	3,875	0.2
900	Playas	52,864	2.4
901	Badland-Belcher-Belted association	395	*
902	Slickens	570	*
905	Badland	1,265	0.1
910	Stargo-Playas association	4,080	0.2
920	Fuegosta-Tomel-Izo association	6,575	0.3
921	Fuegosta-Unsel association	2,345	0.1
931	Laxal-Wardenot-Ardivey association	9,665	0.4
940	Belted-Keefa association	3,740	0.2
941	Belted-Lathrop association	2,470	0.1
950	Sylvaniam-Logring-Rock outcrop association	745	*
960	Beano-Wardenot association	1,860	0.1
961	Beano-Annaw-Wardenot association	3,270	0.1
970	Blappert-Pumel association	22,430	1.0
971	Blappert-Slatery association	3,305	0.1
980	Geer fine sandy loam, 0 to 4 percent slopes	2,565	0.1
990	Sodaspring-Izo association	4,920	0.2
1000	Keefa-Itme association	3,130	0.1
1010	Scottcas Variant very gravelly sandy loam, 4 to 30 percent slopes	1,975	0.1
1020	Upspring very cobbly sandy loam, 4 to 30 percent slopes	1,145	0.1
1021	Upspring-Skelon-Rock outcrop association	535	*
1030	Papoose-Roic-Cirac association	6,360	0.3
1031	Papoose sandy loam, 0 to 8 percent slopes	1,850	0.1
1032	Papoose-Cirac association	4,145	0.2
1033	Papoose-Roic association	1,360	0.1
1034	Papoose-Izo association	4,065	0.2
1035	Papoose-Stumble association	1,645	0.1
1050	Beelem-Rock outcrop-Bellehelen association	2,445	0.1
1060	Wrango-Zadvar-Veet association	2,375	0.1
1070	Squawtip-Gabbvally-Rock outcrop association	295	*
1080	Ravenswood-Wahguyhe-Brier association	2,120	0.1
1081	Ravenswood-Brier association	5,155	0.2
1090	Zibate-Blacktop-Rock outcrop association	2,530	0.1
1120	Rodad-Entero association	2,250	0.1
1121	Rodad-Theriot-Rock outcrop association	3,000	0.1
1122	Rodad-Ardivey-Theriot association	1,000	*
1123	Rodad-Roic-Theriot association	1,375	0.1
1124	Rodad-Slatery-Leo association	580	*
1125	Rodad-Theriot-Kyler association	10,030	0.4
1140	Handpah Variant-Veet-Veet Variant association	2,225	0.1
1150	Brier-Squawtip-Gabbvally association	2,860	0.1
1151	Brier-Bellehelen-Gabbvally association	1,300	0.1
1160	Mohocken-Cucamungo-Ravenswood association	15,655	0.7
1200	Armespan Variant-Handpah-Ubehebe association	2,755	0.1
1210	Armespan-Zadvar-Veet association	7,430	0.3
	Total	2,241,063	100.0

* Less than 0.1 percent.

TABLE 305.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Advokay	Loamy, mixed, mesic, shallow Typic Haplargids
Alcan	Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids
Annaw	Sandy-skeletal, mixed, mesic Typic Camborthids
Aquic Calciorthids	Aquic Calciorthids
Ardivey	Loamy-skeletal, mixed, mesic Duric Haplargids
Arizo	Sandy-skeletal, mixed, thermic Typic Torriorthents
Armespan	Loamy-skeletal, mixed, mesic Durixerollic Calciorthids
Armespan Variant	Loamy-skeletal, mixed, mesic, shallow Typic Durixerolls
Armoine	Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids
Beano	Loamy-skeletal, mixed, mesic, shallow Haplic Durargids
Beelem	Loamy, mixed (calcareous), mesic Lithic Xeric Torriorthents
Belcher	Loamy, mixed, mesic, shallow Entic Durorthids
Bellehelen	Loamy-skeletal, mixed, mesic Lithic Argixerolls
Belted	Loamy, mixed, mesic, shallow Haplic Durargids
Blacktop	Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents
Blappert	Loamy-skeletal, mixed, mesic, shallow Typic Haplargids
Breko	Loamy-skeletal, mixed, mesic Xerollic Haplargids
Brier	Loamy-skeletal, mixed, mesic Lithic Argixerolls
Candelaria	Sandy-skeletal, mixed, mesic Typic Calciorthids
Celeton	Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents
Cirac	Coarse-loamy, mixed (calcareous), mesic Typic Torrifluvents
Cucamungo	Loamy-skeletal, mixed, frigid, shallow Typic Argixerolls
Downeyville	Loamy-skeletal, mixed, mesic Lithic Haplargids
Eaglepass	Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents
Entero	Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids
Espint	Clayey, montmorillonitic, mesic, shallow Xerollic Haplargids
Fuegosta	Clayey, montmorillonitic, mesic, shallow Abruptic Durargids
Gabbvally	Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids
Garhill	Loamy, mixed, mesic, shallow Typic Durorthids
Geer	Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents
Gynelle	Sandy-skeletal, mixed, mesic Typic Torriorthents
Handpah	Loamy, mixed, mesic, shallow Xerollic Durargids
Handpah Variant	Fine, montmorillonitic, mesic Aridic Argixerolls
Hiridge	Loamy-skeletal, mixed, shallow Argic Cryoborolls
Itme	Sandy-skeletal, mixed, mesic Typic Torriorthents
Izo	Sandy-skeletal, mixed, mesic Typic Torriorthents
Kawich	Mixed, mesic Typic Torripsamments
Keefa	Coarse-loamy, mixed, mesic Duric Camborthids
Kiote	Loamy-skeletal, mixed Argic Pachic Cryoborolls
Koyen	Coarse-loamy, mixed, mesic Typic Camborthids
Kyler	Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents
Lathrop	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Duric Haplargids
Laxal	Loamy-skeletal, mixed (calcareous), mesic Durorthidic Torriorthents
Lazan	Sandy-skeletal, mixed, mesic, shallow Typic Xerorthents
Leo	Sandy-skeletal, mixed, mesic Typic Torriorthents
Logring	Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents
Lomoine	Loamy-skeletal, mixed (calcareous), mesic Lithic Xeric Torriorthents
Louderback	Sandy, mixed, mesic Aquic Torriorthents
Luning	Sandy, mixed, mesic Typic Torriorthents
Lyda	Loamy-skeletal, mixed, mesic, shallow Typic Durargids
Malmesa	Loamy-skeletal, mixed, mesic, shallow Xerollic Durargids
Mohocken	Fine, montmorillonitic, frigid Typic Palexerolls
Noyson	Coarse-loamy, mixed, mesic Entic Durorthids
Nuyobe	Fine-silty, mixed (calcareous), mesic Aeric Halaquepts
Oricto	Sandy-skeletal, mixed, mesic Typic Haplargids
Orphant	Loamy, mixed, mesic, shallow Haplic Durargids
Orwash	Sandy, mixed, thermic Typic Torriorthents
Papoose	Fine-loamy, mixed, mesic Typic Haplargids
Penelas	Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids
Penoyer	Coarse-silty, mixed (calcareous), mesic Typic Torriorthents
Pintwater	Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents

TABLE 305.--CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Pumel	Loamy-skeletal, mixed (calcareous), mesic, shallow Typic Torriorthents
Ravenswood	Clayey-skeletal, montmorillonitic, frigid Typic Argixerolls
Ravenswood Variant	Fine-loamy, mixed, frigid Typic Argixerolls
Rodad	Loamy-skeletal, mixed, mesic, shallow Typic Haplargids
Roic	Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents
Rustigate	Fine-loamy, mixed (calcareous), mesic Aquic Torriorthents
Scottcas	Loamy-skeletal, mixed, thermic Duric Haplargids
Scottcas Variant	Loamy-skeletal, mixed, thermic, shallow Haplic Durargids
Settlement	Fine, montmorillonitic (calcareous), mesic Aeric Halaquepts
Silverbow	Loamy-skeletal, mixed, mesic, shallow Typic Durargids
Skelon	Loamy-skeletal, mixed, thermic Typic Durorthids
Slatery	Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents
Slaw	Fine-silty, mixed (calcareous), mesic Typic Torrifluvents
Sodaspring	Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents
Squawtip	Loamy-skeletal, mixed, frigid Typic Argixerolls
Stargo	Sandy, mixed, mesic Durorthidic Torrifluvents
Stewval	Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids
Stonell	Loamy-skeletal, mixed, mesic Typic Haplargids
Stumble	Mixed, mesic Typic Torripsamments
Sylvaniam	Loamy-skeletal, carbonatic, frigid Typic Calcixerolls
Terlco	Fine-loamy, mixed, mesic Typic Natrargids
Theriot	Loamy-skeletal, carbonatic, mesic Lithic Torriorthents
Thike	Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids
Timper	Loamy, mixed, mesic, shallow Entic Durorthids
Tognoni	Loamy-skeletal, mixed, mesic Lithic Haplargids
Tokoper	Loamy-skeletal, mixed, mesic, shallow Typic Durargids
Tomel	Loamy-skeletal, mixed, mesic, shallow Typic Durargids
Trailamp	Loamy-skeletal, mixed, frigid, shallow Typic Argixerolls
Tulecan	Loamy-skeletal, mixed, mesic, shallow Aridic Argixerolls
Ubehebe	Loamy-skeletal, mixed, mesic, shallow Aridic Argixerolls
Unsel	Fine-loamy, mixed, mesic Duric Haplargids
Unsel Variant	Fine-loamy, mixed, mesic Typic Haplargids
Upspring	Loamy-skeletal, mixed (calcareous), thermic Lithic Torriorthents
Veet	Loamy-skeletal, mixed, mesic Xerollic Camborthids
Veet Variant	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Fluvaquentic Haploxerolls
Vigus	Fine-loamy, mixed, mesic Duric Haplargids
Vindicator	Loamy-skeletal, mixed, mesic, shallow Typic Haplargids
Wahguyhe	Loamy-skeletal, mixed, nonacid, mesic Lithic Xeric Torriorthents
Wardenot	Sandy-skeletal, mixed, mesic Typic Torriorthents
Weepah	Loamy-skeletal, mixed (calcareous), mesic, shallow Xeric Torriorthents
Wrango	Sandy-skeletal, mixed, mesic Xeric Torriorthents
Yermo	Loamy-skeletal, mixed (calcareous), thermic Typic Torriorthents
Yomba	Sandy-skeletal, mixed, mesic Duric Camborthids
Youngston	Fine-loamy, mixed (calcareous), mesic Typic Torrifluvents
Zaba	Loamy-skeletal, mixed, mesic Typic Haplargids
Zadvar	Loamy, mixed, mesic, shallow Haploxerollic Durargids
Zibate	Loamy-skeletal, mixed, thermic Lithic Haplargids

Appendix

This appendix consists of materials, extracted from various sources, that provided the basis for many of the interpretive ratings given in this soil survey. These materials are as follows.

Table 603-15. Shallow excavations
Table 603-19. Local roads and streets
Table 603-21. Roadfill
Table 603-22. Sand
Table 603-23. Gravel
Table 603-27. Embankment, dikes, and levees
Guide for rating soils according to their relative suitability for range seedings in Nevada
Guide for estimating erosion hazard (bare soil) - in Nevada
Classification of bolson landforms

Table 603-I5. Shallow excavations.

PROPERTY	LIMITS			RESTRICTIVE FEATURE
	SLIGHT	MODERATE	SEVERE	
1. USDA TEXTURE	---	---	ICE	PERMAFROST
2. DEPTH TO BEDROCK (IN):				DEPTH TO ROCK
HARD	>60	40-60	<40	
SOFT	>40	20-40	<20	
3. DEPTH TO CEMENTED PAN (IN):				CEMENTED PAN
THICK	>60	40-60	<40	
THIN	>40	20-40	<20	
4. USDA TEXTURE (20-60")	---	VII/ SI	COS, S, FS, VFS, LCOS, LS, LFS, LVFS, G, SG	CUTBANKS CAVE
5. USDA TEXTURE (20-60")	---	C, SIC	---	TOO CLAYEY
6. SOIL ORDER	---	---	VERTISOLS	CUTBANKS CAVE
7. BULK DENSITY (G/CC) (20-60)	---	>1.8	---	DENSE LAYER
8. UNIFIED (20-60")	---	---	OL, OH, PT	EXCESS HUMUS
9. 1/FRACTION >3 IN (WT PCT)	<25	25-50	>50	LARGE STONES
10. DEPTH TO HIGH WATER TABLE (FT)	---	---	+	PONDING
	>6	2.5-6	<2.5	WETNESS
11. FLOODING	NONE, RARE	COMMON	---	FLOODING
12. SLOPE (PCT)	<8	8-15	>15	SLOPE
13. DOWNSLOPE MOVEMENT	---	---	II/	SLIPPAGE

1/Weighted average to 40 inches.
II/If the soil is susceptible to movement downslope when loaded, excavated, or wet, rate "SEVERE-SLIPPAGE."
VII/If loess, rating should be SLIGHT.

Table 603-19. Local roads and streets.

PROPERTY	LIMITS			RESTRICTIVE FEATURE
	SLIGHT	MODERATE	SEVERE	
1. USDA TEXTURE	---	---	ICE	PERMAFROST
2. TOTAL SUBSIDENCE	---	---	>12	SUBSIDES
3. DEPTH TO BEDROCK (IN):				DEPTH TO ROCK
HARD	>40	20-40	<20	
SOFT	>20	<20	---	
4. DEPTH TO CEMENTED PAN (IN):				CEMENTED PAN
THICK	>40	20-40	<20	
THIN	>20	<20	---	
5. 9/SHRINK-SWELL	LOW	MODERATE	HIGH, VERY HIGH	SHRINK-SWELL
6. 5/, 9/, 10/ASSHTO GROUP INDEX NUMBER	<5	5-8	>8	LOW STRENGTH
7. DEPTH TO HIGH WATER TABLE (FT)	---	---	+	PONDING
	>2.5	1.0-2.5	<1.0	WETNESS
8. SLOPE (PCT)	<8	8-15	>15	SLOPE
9. FLOODING	NONE	RARE	COMMON	FLOODING
10. POTENTIAL FROST ACTION	LOW	MODERATE	HIGH	FROST ACTION
11. 1/FRACTION >3 IN (WT PCT)	<25	25-50	>50	LARGE STONES
12. DOWNSLOPE MOVEMENT	---	---	II/	SLIPPAGE
13. FORMATION OF PITS	---	---	III/	PITTING
14. DIFFERENTIAL SETTLING	---	---	V/	UNSTABLE FILL

1/Weighted average to 40 inches.

5/If in kaolinitic family, rate one class better if experience confirms.

9/Thickest layer between 10 and 40 inches.

10/GIN=(F-35)[.2+.005(LL-40]+.01(F-15)(PI-10) where F=% passing No. 200 sieve. If F<35 and PI>11, use only part 2 of equation. Use median values.

II/If the soil is susceptible to movement downslope when loaded, excavated, or wet, rate "SEVERE-SLIPPAGE."

III/If the soil is susceptible to the formation of pits caused by the melting of ground ice when the ground cover is removed, rate "SEVERE-PITTING."

IV/If the soil is susceptible to differential settling, rate "SEVERE-UNSTABLE FILL."

Table 603-21. Roadfill.

PROPERTY	LIMITS			RESTRICTIVE FEATURE
	GOOD	FAIR	POOR	
1. USDA TEXTURE	---	---	ICE	PERMAFROST
2. DEPTH TO BEDROCK (IN)	>60	40-60	<40	DEPTH TO ROCK
3. DEPTH TO CEMENTED PAN (THICK) (IN)	>60	40-60	<40	CEMENTED PAN
4. 12/SHRINK-SWELL	LOW	MODERATE	HIGH, VERY HIGH	SHRINK-SWELL
5. 5/, 10/, 12/ASSHTO GROUP INDEX NUMBER	<5	5-8	>8	LOW STRENGTH
6. LAYER THICKNESS (IN)	>60	30-60	<30	THIN LAYER
7. 1/FRACTION >3 IN (WT PCT)	<25	25-50	>50	LARGE STONES
8. DEPTH TO HIGH WATER TABLE (FT)	>3	1-3	<1	WETNESS
9. SLOPE (PCT)	<15	15-25	>25	SLOPE

1/Weighted average to 40 inches.

5/If in kaolinitic family, rate one class better if experience confirms.

10/GIN=(F-35)[.2+.005(LL-40)]+.01(F-15)(PI-10) where F=% passing. No. 200 sieve. If F<35 and PI>11, use only part 2 of equation. Use median values.

12/Evaluate the thickest layer between 10 and 60 inches and also the bottom layer. Choose the best rating. When rating is based on bottom layer, verify thickness.

XVIII/If the content of gypsum is 10 to 15 percent, rate "FAIR-EXCESS GYPSUM." If it exceeds 15 percent, rate "POOR-EXCESS GYPSUM."

Table 603-22. Sand.

PROPERTY	LIMITS		RESTRICTIVE FEATURE
	PROBABLE SOURCE	IMPROBABLE SOURCE	
1. USDA TEXTURE	---	ICE	PERMAFROST
2. 12/UNIFIED	SW, SP, SW-SM, SP-SM		
	13/GW, 13/GP 13/GW-GM, 13/GP-GM		
		14/GW, 14/GP, 14/GW-GM 14/GP-GM	SMALL STONES
		PT	EXCESS HUMUS
		ALL OTHER	EXCESS FINES
3. LAYER THICKNESS (IN)	>36	<36	THIN LAYER
4. 6/FRACTION >3 IN (WT PCT)	<50	>50	LARGE STONES

6/Thickest layer between 10 and 60 inches.

12/Evaluate the thickest layer between 10 and 60 inches and also the bottom layer. Choose the best rating. When rating is based on bottom layer, verify thickness.

13/% passing No. 4 sieve minus % passing No. 200 sieve >25.

14/% passing No. 4 sieve minus % passing No. 200 sieve <25.

Table 603-23. Gravel.

PROPERTY	LIMITS		RESTRICTIVE FEATURE
	PROBABLE SOURCE	IMPROBABLE SOURCE	
1. USDA TEXTURE	---	ICE	PERMAFROST
2. 12/UNIFIED	GW, GP, GW-GM, GP-GM		
	15/SW, 15/SP, 15/SW-SM, 15/SP-SM		
		16/SW, 16/SP, 16/SW-SM, 16/SP-SM	TOO SANDY
		PT	EXCESS HUMUS
		ALL OTHER	EXCESS FINES
3. LAYER THICKNESS (IN)	>36	<36	THIN LAYER
4. 6/FRACTION >3 IN (WT PCT)	<50	>50	LARGE STONES

6/Thickest layer between 10 and 60 inches.

12/Evaluate the thickest layer between 10 and 60 inches and also the bottom layer. Choose the best rating. When rating is based on bottom layer, verify thickness.

15/100 minus % passing No. 4 sieve >25.

16/100 minus % passing No. 4 sieve <25.

Table 603-27. Embankment, dikes, and levees.

PROPERTY	LIMITS			RESTRICTIVE FEATURE
	SLIGHT	MODERATE	SEVERE	
1. USDA TEXTURE	---	---	ICE	PERMAFROST
2. LAYER THICKNESS (IN)	>60	30-60	<30	THIN LAYER
3. 6/UNIFIED	---	---	GW, GP, SW, SP, GW-GM, GP-GM, SW-SM, SP-SM, 19/SM, 19/GM	SEEPAGE
4. 6/UNIFIED	---	20/GM, 21/CL	22/ML, 23/SM, 23/SP, CL-ML	PIPING
5. 6/UNIFIED	---	---	PT, OL, OH	EXCESS HUMUS
6. 6/UNIFIED	---	---	MH, 24/CH	HARD TO PACK
7. 1/FRACTION >3 IN (WT PCT)	<15	15-35	>35	LARGE STONES
8. DEPTH TO HIGH WATER TABLE (FT)	---	---	+	PONDING
APPARENT	>4.0	2.0-4.0	<2.0	WETNESS
PERCHED	>3.0	1.0-3.0	<1.0	WETNESS
9. SODIUM ADSORPTION RATIO (0-40") OR GREAT GROUP OR PHASE	---	---	>12 (NATRIC, HALIC, ALKALI PHASES)	EXCESS SODIUM
10. SALINITY (MMHOS/CM) (ANY DEPTH)	<8	8-16	>16	EXCESS SALT

1/Weighted average to 40 inches.
6/Thickest horizon between 10 and 60 inches.
19/Rate MODERATE if >20% passing No. 200 sieve and SLIGHT if >30% passing No. 200 sieve.
20/Rate SLIGHT if <35% passing No. 200 sieve and <50% passing No. 40 sieve and <65% passing No. 10 sieve.
21/Rate SLIGHT if PI>15.
22/Rate MODERATE if PI>10.
23/Rate MODERATE if <70% passing No. 40 sieve and <90% passing No. 10 sieve, and rate SLIGHT if <60% passing No. 40 sieve and <75% passing No. 10 sieve.
24/Rate MODERATE if PI<40.
XIX/If the content of gypsum is 5 to 10 percent, rate "MODERATE-EXCESS GYPSUM." If it exceeds 10 percent, rate "SEVERE-EXCESS GYPSUM."

GUIDE FOR RATING SOILS ACCORDING TO THEIR RELATIVE SUITABILITY FOR RANGE SEEDINGS IN NEVADA

USDA-ARS, FS, SCS
USDI-BLM
UNR-AG. EXP. STA.

Soil Property	Limits			Restrictive feature
	Good	Fair	Poor	
Moisture regime.	Aquic, xeric, ustic, and xeric and ustic bordering on aridic or torric.	Aridic and torric bordering on aquic, xeric or ustic.	Aridic and torric.	Too arid
Effective moisture. 1/	>10 ins. (25 cm).	7-10 ins. (17.5-25 cm).	<7 ins. (17.5 cm).	Too arid
Available water capacity.	Surface 10 ins. (27 cm) >1.25 ins. (3.2 cm). Soil profile >4 ins. (10.2 cm).	Surface 10 ins. (25 cm) 0.75-1.25 ins. (1.9-3.2 cm). Soil profile 2.5-4 ins. (6.4-10.2 cm).	Surface 10 ins. (25 cm) <0.75 ins. (1.9 cm). Soil profile <2-5 ins. (6.4 cm).	Droughty
Texture surface 7 ins. (17.5 cm).	LVFS, COSL, SL, FSL, VFSL, L SIL, SCL, and CL SICL with <35% C.	VFS, LFS, SC, SIC, C and CL and SICL with >35% C.	LS, LCOS, FS, COS.	Too sandy Too clayey
Rock fragments in surface 7 ins. (17.5 cm).	GR <35%; CB <15%; ST <3%. Total rock fragments <35%.	GR <35%; CB 15-35%; ST 3-15%. Total rock fragments <35%.	GR >35%; CB 35%; ST >15%. Total rock fragments >35%.	Small stones Large stones
Depth to abrupt A-B texture boundary. 2/	>10 ins. (25 cm).	>10 ins. (25 cm).	<10 ins. (25 cm).	Rooting depth
Depth to bedrock or hardpan	>20 ins. (50 cm).	10-20 ins. (25-50 cm).	<10 ins. (25 cm).	Depth to rock Cemented pan
Electrical conductivity-saturation extract-25°C.	<2 mmhos/cm (0.2 s/m) in upper 20 ins. (50 cm).	2-4 mmhos/cm (0.2-0.4 s/m) in upper 10 ins. (25 cm) and 4-8 mmhos/cm (0.4-0.8 s/m) in 10-20 (25-50 cm).	>4 mmhos/cm (0.4 s/m) in upper 10 ins. (25 cm) and/or >8 mmhos/cm (0.8 s/m) in 10-20 ins. (25-50 cm).	Excess salts
Sodium adsorption-ratio	<8 in upper 20 ins. (50 cm).	8-13 in upper 10 ins. (25 cm) and <20 in 10-20 ins. (25-50 cm).	>13 in upper 10 ins. (25 cm) and/or >20 in 10-20 ins. (25-50 cm).	Excess sodium
K x % slope 3/	<4 4/; <6 5/	4-6 4/; 6-8 5/	>6 4/; >8 5/	Erodes easily
I x C 6/	<60	<60	>60	Soil blowing

GUIDE FOR RATING SOILS ACCORDING TO THEIR RELATIVE SUITABILITY FOR RANGE SEEDINGS IN NEVADA--Continued

USDA-ARS, FS, SCS
USDI-BLM
UNR-AG. EXP. STA.

Soil Property	Limits			Restrictive feature
	Good	Fair	Poor	
Soil surface morphological types. 7/	Types I & II >60%; Type IV <5%; or with mollic epipedon 8/	Types I & II >60%; Type IV <10% 8/	Type III <60%; Type IV >10%. 8/	Too crusty

1/ Moisture from precipitation, run-on, and groundwater budgeted to actual evapotranspiration.

2/ Rate Vertisols and Vertic subgroups as poor.

3/ Sheet and rill erosion hazard (bare soil).

4/ For ustic bordering on aridic or torric, and aridic or torric bordering on ustic moisture regimes.

5/ For xeric, xeric bordering on aridic or torric, and aridic or torric bordering on xeric moisture regimes.

6/ Wind erosion hazard (bare soil).

7/ See: (1) Final Report. Properties, Occurrence and Management of Soils with Vesicular Surface Horizons, 1977. Contract No. 52500-CT 5(N). USDI-BLM and UNR-Ag. Exp. Sta. Eckert, Peterson, Wood, and Blackburn; and (2) Final Report. Properties, Occurrence and Management of Soils with Vesicular Surface Horizons-Effects of Trampling on Seedling Emergence. 1979. Contract No. YA 512-CT 7-14. USDI-BLM and UNR-Ag. Exp. Sta. Stephens, Eckert, and Peterson.

8/ Soils without crusting morphology are to be included in Types I & II for rating.

USDA-SCS
Reno, NV
6/20/83

302.7(a)(1)(ii) Descriptive Legend - preparation of mapping unit descriptions

Guide for Estimating Erosion Hazard (BARE SOIL) - in Nevada.

	Water K x S (percent slope)	Wind I x C (climatic factor)
Slight	<4	<60
Moderate	4-8	60-100
High	>8	>100

CLASSIFICATION OF BOLSON LANDFORMS

.....landforms.....			..parts of landforms..	
I Major Physiographic Part	II Major Landform	III Component Landform	IV Landform Element	V Slope Component
Bounding Mountains . .	(not defined . . .	. . .	. . .	. . .
Piedmont Slope	Alluvial Fan	Fan Collar	Channel	
		Erosional Fan Remnant	Summit	
			Sideslope.....	Shoulder
				Backslope
				Footslope
		Inset Fan	Channel	
	Fan Piedmont	Erosional Fan Remnant	Summit	
			Sideslope.....	Shoulder
				Backslope
				Footslope
			Partial Ballena.....	Crest
				Shoulder
				Backslope
			Channel	
		Inset Fan	Channel	
		Fan Apron	Channel	
		Nonburied Fan Remnant	Channel	
	Fan Skirt	. . .	Channel	
Basin Floor (Bolson Floor)	Alluvial Flat	Alluvial Flat Remnant	Channel	
	Alluvial Plain			
	Sand Sheet	Sand Dune	Interdune Flat	
	Beach Plain	Offshore Bar		
		Barrier Bar		
		Lagoon	Channel	
	Lake Plain	Lake-Plain Terrace	Channel	
	Playa	Floodplain Playa	Channel	

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