USDA United States Department of Agriculture

Natural Resources Conservation Service

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

Soil Survey of Elko County, Nevada, Southeast Part

Part I

How To Use This Soil Survey

This survey is divided into three parts. Part I includes general information about the survey area; descriptions of the detailed soil map units and soil series in the area; and a description of how the soils formed. Part II describes the use and management of the soils and the major soil properties. Part III includes the maps.

The **detailed soil map units** follow the general information about the survey area. These map units can be useful in planning the use and management of small areas.

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

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** in Part I of this survey, which lists the map units by symbol and name and shows the page where each map unit is described.

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.

A **State Soil Geographic Database (STATSGO)** is available for this survey area. This database consists of a soils map at a scale of 1 to 250,000 and descriptions of groups of associated soils. It replaces the general soil map published in older soil surveys. The map and the database can be used for multicounty planning, and map output can be tailored for a specific use. More information about the State Soil Geographic Database for this survey area, or any portion of Nevada, is available at the local office of the Natural Resources Conservation Service, and on the internet at http://www.ftw.nrcs.usda.gov/stat_data.html.

Some standards or values may change as more information is collected and analyzed. Thus, as older published interpretive information becomes outdated, new interpretive data must be generated and tailored to local conditions. This information is added to the State Subset of the **National Soil Information System (NASIS)** database as needed. Map Unit Interpretation Records are the soil survey specific data and interpretations in the state soil survey database.

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 Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1992. Soil names and descriptions were approved in 1993. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1992. This survey was made cooperatively by the Natural Resources Conservation Service, Bureau of Land Management, Bureau of Indian Affairs, and University of Nevada Agricultural Experiment Station. It is part of the technical assistance furnished to the Clover and Ruby Soil Conservation Districts.

Contents

Part I

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Index to Map Units

Summary of Tables

Part II

Foreword

This soil survey contains information that can be used in land-planning programs in Elko County, Nevada, Southeast Part. 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 potential 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. 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 Natural Resources Conservation Service or the Nevada Cooperative Extension.

Nicholas N. Pearson
State Conservationist
Natural Resources Conservation Service

Soil Survey of Elko County Southeast Part, Nevada

By Paul W. Blackburn, Natural Resources Conservation Service

Fieldwork by Paul W. Blackburn, Ed Fenn, Leon Lato, Dave Pickel, Ian Reid, and Alan Wasner, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with,
United States Department of the Interior, Bureau of Land Management and Bureau of Indian Affairs and the University of Nevada Agricultural Experiment Station

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 unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and 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, soil scientists develop a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge 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 (units). 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 a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret 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 are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are 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 are 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 predict with a fairly high degree of accuracy 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.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

In some small areas of the survey area, access was denied or otherwise restricted. Soil map units were interpolated across the area of denied access using photographic interpretation based on the map units in the adjacent areas. The accuracy of the photo interpretation is dependent on several factors, including the size and complexity of the area; the scale and quality of the photobase; and the degree of relief across the landscape. Because the mapping is made using methods other than field investigation, the reliability of mapping is reduced.

General Nature of the Survey Area

This section gives general information about the survey area. It briefly discusses history; industries, transportation, and recreation; physiography, drainage, and geology; and climate.

The Elko County, Nevada, Southeast Part soil survey area is in the northeast part of Nevada. There are 2,808,842 acres in the survey area.

The survey area is bordered on the east by Utah and on the south by White Pine County.

The area consists of numerous north-south trending mountain ranges and intervening valleys. Elevations range from 9,600 feet in the mountains to 5,600 feet in the valleys.

The survey area is sparsely populated. The main industry is ranching.

The public land in the area is administered by the Bureau of Land Management.

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

History

This area was originally inhabited by the Shoshone Indians. The first known white men to set foot into the area were the French-Canadian fur trappers of the Hudson Bay Company beginning with the second Snake Country Expedition in June, 1826. These expeditions were led by Peter Skene Ogden, trapping brigade leader for Hudson Bay Company.

Currie, 62 miles south of Wells got its name from rancher Joseph H. Currie who came to the Elko County area in 1885 and engaged in the livestock business. In 1905 Currie became a railroad station on the Nevada Northern Railroad line.

In September, 1869, the Central Pacific Railroad installed a boxcar to serve as a freight and passenger station in the Meadows about a mile west of the present town of Wells. This was the original Humboldt Wells Townsite, the home and office of Wells first resident R. P. "Bob" Hamil, Station agent for the railroad and express agent for Wells Fargo and Company.

In 1917 William Smith and a partner, Echstien, started a service station east of the convergence of U.S. Highway 40 and 50. After business improved, Smith bought out Eckstien and decided to build an establishment half in Nevada and half in Utah which became the Eastline Townsite or more commonly known as Wendover *(25).*

Industry, Transportation, and Recreation

The main industries in the survey area are tourism, gaming, and ranching.

Wendover, located on the Nevada-Utah state line and just off Interstate 80, on the northeast part of the survey

area, draws many tourists where gaming is the main industry. The city of Wells, located on Interstate 80 but in the northwest part of the survey area, also receives many tourists for its gaming but also for nearby recreational and hunting opportunities.

Most of the ranching in the survey area is in Ruby Valley and Clover Valley. The ranches are dominantly cow/calf operations, and the current year's crop is generally sold in the fall and exported. Where suited, the lands of the survey area are used for production of hay and pasture.

Interstate 80 traverses the north part of the survey area from west to east connecting Wells with Wendover. U.S. Highway 93 traverses the survey area from north to south mainly from the northwestern part to the south central part. Alternate Highway 50 traverses the survey area from the south central part north connecting with Wendover at the Nevada and Utah state line. State Highway 11 runs west from U.S. Highway 93 connecting with State Highway 26 on the western edge of the survey. Improved gravel roads are located mainly in Ruby Valley on the west side of the area and in Pilot Creek Valley in the northeast part. The remaining part of the survey area is served by unimproved dirt roads and jeep trails.

Lime is presently being mined in the Goshute Mountains. No other active mines are presently being operated within the survey area but a heap/leach gold mine is planned in the Kingsley Mountains. Higher precious metal prices will continue to stimulate exploration.

Municipal water is supplied to the city of Wells from 2 deep wells. Municipal water from the city of Wendover is currently supplied via pipeline from Big Springs and Johnson Springs located in Goshute Valley as well as 4 deep wells in the Silver Zone area. Due to rapid growth of Wendover one new well is planned as well as a 500,000 gallon wastewater treatment plant. This plant will recycle water for the Wendover golf course and city park. In rural areas, water for household use is obtained from wells or from dependable springs.

Valleys are provided with early season irrigation water by spring runoff from nearby mountains. Late season water may be provided by individual irrigation wells or small ponds and reservoirs. At higher elevations, small springs and seeps provide limited watering facilities for livestock and wildlife.

Ruby Lake located on the Ruby Marsh Wildlife Refuge receives water from spring runoff from the Ruby Mountains. Additional water is supplied by springs and seeps. Ruby Lake is the largest body of water in the survey area and is an important area for wildlife and recreation.

Physiography, Drainage, and Geology

Water from the majority of the tributaries in the soil survey area eventually ends up in bolson floors where it evaporates. The intermittent flow of these streams is supplied by spring runoff and convection storms during the summer months. The exceptions are those perennial streams that drain into Ruby Lake.

The geology of the survey area is variable and complex. The fault block ranges in the survey area consist mainly of Ordovician to Permian carbonate rocks *(8).* Jurasic Tertiary Plutonic rocks and Tertiary volcanic and shallow intrusive rocks occur locally. Pleistocene and Holocene lacustrine sediments and beach deposits make up the valley floors of the survey area. These lacustrine sediments and beach deposits are derived from pluvial lakes which occupied areas in Ruby, Clover, Independence, Goshute, and Antelope Valleys, and in the Wendover area by the western edge of Ancient Lake Bonneville *(20).*

The carbonate rocks in the ranges consists mainly of limestone and dolomite. Volcanic and shallow intrusive rocks consist mainly of andesite and rhyolite.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Ruby Lake and Wells Nevada for some period between 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in the spring. Table 3 provides data on length of growing season.

In winter, the average temperatures at Ruby Lake and Wells are 28 and 25, degrees F°. The average daily minimum temperature is 16 degrees at Ruby Lake and 13 degrees at Wells. In summer, the average temperature is 66 degrees at Ruby Lake and 64 degrees at Wells. The average daily maximum temperature is 83 degrees at Ruby Lake and 84 degrees at Wells.

Growing degree days, shown in Table 1, are equivalent to "heat units". Beginning in the spring, growing degree days accumulate by the amount the average temperature exceeds a base temperature (40 degrees F°). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze of spring and the first freeze of fall.

The total annual precipitation is 13 inches at Ruby Lake and 10 inches at Wells. Of this, 40 to 50 percent usually falls in April through September. The growing season for most crops falls within this period. Thunderstorms occur on about 20 days each year, and most occur in summer.

On an average of 20 to 30 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year. 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.

The average relative humidity in midafternoon is about 40 percent. Humidity is higher at night, and the average at dawn is about 70 percent. The sun shines 80 percent of the time in summer, and 70 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 7 miles per hour, in spring.

Detailed Soil Map Units

The map units on the detailed maps in Part III of this publication 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 potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

A map unit delineation on the detailed soil maps represents an area dominated by one or more soils 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, are mapped without including areas of other taxonomic classes. Consequently, map units are made up of the soils or miscellaneous areas for which they are named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties and behavioral characteristics similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas 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 soils and miscellaneous areas on the landscape.

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 is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit. The principal hazards and limitations to be considered in planning for specific uses are identified in the tables and narrative in Part II.

Kinds of Map Units

Soils that have profiles that are almost alike make up a *soil series.* Except for differences in texture of the surface layer, all 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 surface layer, 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.* Some 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, Wendane silt loam, rarely flooded is a phase of the Wendane 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. Welch-Welsum 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. Shabliss-Pyrat-Okan 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.

Acreage and Extent

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Headings and Introductory Phases

In the map unit descriptions that follow, a semitabular format is used. In this format the major headings are centered in the column (for example, *Composition*). They identify the information grouped directly below them. Introducing each item of information under the centered heading is a term or phrase (for example, *Major Components*) that identifies or describes the information. Many of the centered headings and introductory terms are self-explanatory; however, some of them need further explanation and are defined in the Glossary. Explanations of the headings and introductory phrases are provided in the following paragraphs, generally in the order in which they are used in the map unit descriptions.

Composition is given for the components (soils or miscellaneous areas) identified in the name of the map unit as well as for the contrasting inclusions.

Contrasting Inclusions are areas of components that differ sufficiently in use and management from the soils or miscellaneous areas for which the map unit is named. As was explained earlier, inclusions can either be *similar* or *contrasting*. Note that in the *Composition* section a single percentage is provided for a named soil and its similar inclusions because their use and management are similar.

Map Unit Setting is given for the entire map unit. This section gives the position on the landscape. The landscape positions given for the entire map unit generally are broader than those given for each component. Below the map unit setting, the position of each component and inclusion is listed, and the physiographic location of each is identified.

Major Component Description lists the characteristics of the major components. These include elevation, texture of the surface layer, drainage class, parent material, and climatic data.

Dominant Present Vegetation lists the common plants growing on each soil at the present time. The present vegetation may be similar to the potential native plant community, but in some areas it consists of other plants, either cultivated or wild, that dominate the soils in the map unit.

Ecological Site is the assigned rangeland or grazed forest land ecological site that identifies a unique potential native plant community. The plant species and production typical of each ecological site are listed by map unit in the section "Rangeland Plants and Woodland Understory." Additional information about these sites is provided under the heading "Rangeland and Grazeable Woodland Resource Management" in Part II of this publication. Further information also can be obtained from the local office of the Natural Resources Conservation Service.

Map Unit Descriptions

053--Palinor-Urmafot association

Composition

Major Components

Palinor very gravelly loam, 4 to 15 percent slopes--65 percent

Urmafot very gravelly loam, 8 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Wintermute gravelly silt loam, 2 to 8 percent slopes--8 percent

Inclusion 2: Izar very gravelly loam, 4 to 15 percent slopes--5 percent

Inclusion 3: Automal gravelly loam, 8 to 30 percent slopes--1 percent

Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Palinor--Landform: Fan remnants; position on slope: lower

Urmafot--Landform: Fan remnants; position on slope: upper

Inclusion 1--Landform: Fan remnants; position on slope: lower

Inclusion 2--Landform: Pediments; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants

Inclusion 4--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

Palinor Series
Elevation: 5,100 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Urmafot Series
Elevation: 6,000 to 7,000 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: None

Ecological Site

Palinor: 028BY011NV
Urmafot: 028BY006NV
Inclusion 1: 028BY075NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY011NV
Inclusion 4: None

062--Amtoft-Rock outcrop association

Composition

Major Components
Amtoft very gravelly loam, moist, 30 to 75 percent slopes--40 percent
Rock outcrop--25 percent
Amtoft very gravelly loam, 30 to 75 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Kyler very gravelly loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Jericho very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Theriot extremely stony loam, 15 to 50 percent slopes--1 percent
Inclusion 4: Xeric Torriorthents very gravelly coarse sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains and foothills
Amtoft--Landform: Mountains; geomorphic position: summit; position on slope: upper; shape of slope: convex
Rock outcrop--Landform: Mountains
Amtoft--Landform: Mountains; geomorphic position: summit; position on slope: upper; shape of slope: convex
Inclusion 1--Landform: Hills
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Mountains; position on slope: lower
Inclusion 4--Landform: Drainageways

Major Component Description

Amtoft Series
Elevation: 4,400 to 6,700 feet
Precipitation: About 10 inches
Air temperature: About 47 degrees
Frost-free season: About 125 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area
Elevation: 4,400 to 6,700 feet

Amtoft Series
Elevation: 4,400 to 6,700 feet
Precipitation: About 10 inches
Air temperature: About 47 degrees
Frost-free season: About 125 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Amtoft: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Amtoft: Indian ricegrass, Utah juniper, black sagebrush, galleta
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 3: Indian ricegrass, black sagebrush, horsebrush, needleandthread
Inclusion 4: Indian ricegrass, Nevada ephedra, big sagebrush, rubber rabbitbrush

Ecological Site

Amtoft: 028AY034NV
Amtoft: 028AY027NV
Rock outcrop: None
Inclusion 1: 028AY004NV
Inclusion 2: 028AY013NV
Inclusion 3: 028AY044NV
Inclusion 4: 028AY038NV

066--Zimbob association

Composition

Major Components

Zimbob very gravelly loam, 8 to 50 percent slopes--50 percent
Zimbob very gravelly loam, very shallow, 8 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Palinor very gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Okan gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Rock outcrop--4 percent
Inclusion 4: Tecomar extremely gravelly loam, 15 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills
Zimbob--Landform: Hills
Zimbob--Landform: Hills
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Hills; geomorphic position: backslope
Inclusion 4--Landform: Hills; geomorphic position: summit; position on slope: upper

Major Component Description

Zimbob Series

Elevation: 5,100 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Zimbob Series

Elevation: 5,100 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Zimbob: Indian ricegrass, black sagebrush, needleandthread
Zimbob: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: None
Inclusion 4: Black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Zimbob: 028BY016NV
Zimbob: 028BY059NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY010NV
Inclusion 3: None
Inclusion 4: 028BY090NV

067--Tecomar-Tecomar, dry-Pookaloo association

Composition

Major Components

Tecomar extremely gravelly loam, 15 to 50 percent slopes--40 percent

Tecomar extremely gravelly loam, 8 to 50 percent slopes--25 percent
Pookaloo very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Zimbob very gravelly loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Lithic Xerollic Calciorthids, loamy-skeletal, carbonatic, mesic gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Mountains and foothills
Tecomar--Landform: Hills; geomorphic position: backslope
Tecomar--Landform: Hills; geomorphic position: backslope
Pookaloo--Landform: Hills; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 3--Landform: Hills; geomorphic position: summit

Major Component Description

Tecomar Series

Elevation: 5,600 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series

Elevation: 5,600 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series

Elevation: 5,600 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Tecomar: Black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: None

Ecological Site

Tecomar: 028BY008NV
Tecomar: 028BY090NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY016NV
Inclusion 2: 028BY079NV
Inclusion 3: None

069--Zimbob-Hyzen-Rock outcrop association

Composition

Major Components

Zimbob very gravelly loam, 15 to 50 percent slopes--40 percent
Hyzen extremely stony loam, 15 to 50 percent slopes--30 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Theriot extremely stony loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Zimbob extremely stony loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Xerollic Calciorthids, loamy-skeletal, mixed, mesic very gravelly loam, 2 to 8 percent slopes--3 percent

Inclusion 4: Urmafot gravelly silt loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills
Zimbob--Landform: Hills; geomorphic position: backslope
Hyzen--Landform: Hills; geomorphic position: backslope
Rock outcrop--Landform: Hills
Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Fan remnants

Major Component Description

Zimbob Series
Elevation: 5,800 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Hyzen Series
Elevation: 5,800 to 7,700 feet
Precipitation: About 13 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 45 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area
Elevation: 5,800 to 7,700 feet

Dominant Present Vegetation

Zimbob: Indian ricegrass, black sagebrush, needleandthread
Hyzen: Indian ricegrass, Scribner needlegrass, black sagebrush, littleleaf mountainmahogany
Rock outcrop: None
Inclusion 1: Indian ricegrass, bud sagebrush, needleandthread, shadscale
Inclusion 2: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Zimbob: 028BY016NV
Hyzen: 028BY066NV
Rock outcrop: None
Inclusion 1: 028BY019NV
Inclusion 2: 028BY059NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY006NV

070--Stewval-Eastwell association

Composition

Major Components
Stewval very gravelly fine sandy loam, 8 to 30 percent slopes--65 percent
Eastwell gravelly sandy loam, 8 to 30 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Eastwell very gravelly sandy loam, 8 to 30 percent slopes--8 percent
Inclusion 2: Entic Durorthids, loamy-skeletal, mixed, mesic gravelly loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Wintermute gravelly silt loam, 2 to 8 percent slopes--4 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Stewval--Landform: Hills; geomorphic position: backslope
Eastwell--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants; position on slope: upper
Inclusion 2--Landform: Fan remnants; position on slope: lower
Inclusion 3--Landform: Fan remnants; position on slope: lower

Major Component Description

Stewval Series
Elevation: 5,800 to 6,700 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 80 percent gravel

Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Eastwell Series
Elevation: 5,800 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Stewval: Indian ricegrass, black sagebrush, galleta, needleandthread
Eastwell: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Stewval: 028AY004NV
Eastwell: 028BY011NV
Inclusion 1: 028BY053NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY075NV

071--Stewval-Wesfil-Rock outcrop association

Composition

Major Components

Stewval very gravelly fine sandy loam, 8 to 30 percent slopes--50 percent
Wesfil very channery loam, 15 to 50 percent slopes--20 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Haplargids, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 50 percent slopes--9 percent
Inclusion 2: Pioche very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 3: Xeric Torriorthents gravelly sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Xeric Torripsamments, mixed, mesic fine sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills
Stewval--Landform: Hills; geomorphic position: backslope
Wesfil--Landform: Hills; geomorphic position: summit; shape of slope: convex
Rock outcrop--Landform: Hills
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Hills; geomorphic position: backslope
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Drainageways

Major Component Description

Stewval Series
Elevation: 5,100 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 80 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Wesfil Series
Elevation: 5,100 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area
Elevation: 5,100 to 6,400 feet

Dominant Present Vegetation

Stewval: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Wesfil: Indian ricegrass, Thurber needlegrass, black sagebrush
Rock outcrop: None
Inclusion 1: Thurber needlegrass, bluebunch wheatgrass
Inclusion 2: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, fourwing saltbush, needleandthread

Ecological Site

Stewval: 028AY036NV
Wesfil: 028AY035NV
Rock outcrop: None
Inclusion 1: 028AY022NV
Inclusion 2: 028BY062NV
Inclusion 3: 028AY028NV
Inclusion 4: 028AY005NV

080--Stewval very gravelly fine sandy loam, 8 to 30 percent slopes

Composition

Major Components

Stewval very gravelly fine sandy loam, 8 to 30 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Wintermute very gravelly sandy loam, 2 to 8 percent slopes--7 percent
Inclusion 2: Lithic Torriorthents gravelly loam, 2 to 8 percent slopes--6 percent
Inclusion 3: Typic Durorthids, loamy-skeletal, mixed, mesic gravelly loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills
Stewval--Landform: Hills; geomorphic position: backslope; position on slope: upper
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 3--Landform: Fan remnants

Major Component Description

Stewval Series

Elevation: 5,800 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 80 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Stewval: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 2: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Stewval: 028AY004NV
Inclusion 1: 028BY075NV
Inclusion 2: 028AY004NV
Inclusion 3: 028BY075NV

092--Wesfil-Wintermute-Okan association

Composition

Major Components

Wesfil very channery loam, 2 to 8 percent slopes--35 percent
Wintermute gravelly silt loam, 2 to 8 percent slopes--30 percent
Okan sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Automal gravelly silt loam, 2 to 4 percent slopes--7 percent
Inclusion 2: Lithic Xeric Torriorthents very gravelly loam, 2 to 4 percent slopes--6 percent
Inclusion 3: Zorravista fine sand, 4 to 30 percent slopes--1 percent
Inclusion 4: Linoyer gravelly sandy loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Wesfil--Landform: Hills
Wintermute--Landform: Fan remnants; position on slope: lower
Okan--Landform: Inset fans
Inclusion 1--Landform: Fan remnants; position on slope: upper
Inclusion 2--Landform: Hills
Inclusion 3--Landform: Dunes
Inclusion 4--Landform: Inset fans

Major Component Description

Wesfil Series

Elevation: 5,800 to 6,200 feet
Precipitation: About 8 inches

Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Wintermute Series
Elevation: 5,800 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series
Elevation: 5,800 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Wesfil: Indian ricegrass, black sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, needleandthread, pigmy sagebrush
Inclusion 3: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Wesfil: 028BY016NV
Wintermute: 028BY075NV
Okan: 028BY052NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY040NV
Inclusion 3: 028BY021NV
Inclusion 4: 028BY013NV

098--Wesfil-Tarnach association

Composition

Major Components
Wesfil very channery loam, 15 to 50 percent slopes--50 percent
Tarnach very gravelly loam, 15 to 50 percent slopes--20 percent
Wesfil very channery loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Xeric Torriorthents sandy loam, 4 to 8 percent slopes--6 percent
Inclusion 2: Rock outcrop--5 percent
Inclusion 3: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly loam, 4 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills
Wesfil--Landform: Hills; geomorphic position: summit; shape of slope: convex
Tarnach--Landform: Hills; geomorphic position: backslope; shape of slope: plane
Wesfil--Landform: Hills; geomorphic position: summit; shape of slope: convex
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Hills; geomorphic position: summit
Inclusion 3--Landform: Hills; geomorphic position: backslope
Inclusion 4--Landform: Hills; geomorphic position: summit

Major Component Description

Wesfil Series
Elevation: 5,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Tarnach Series
Elevation: 5,200 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Wesfil Series
Elevation: 5,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Wesfil: Indian ricegrass, black sagebrush, galleta, needleandthread
Tarnach: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Wesfil: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 2: None
Inclusion 3: Indian ricegrass, Utah juniper, black sagebrush, galleta
Inclusion 4: Indian ricegrass, needleandthread, pigmy sagebrush

Ecological Site

Wesfil: 028AY004NV
Tarnach: 028AY034NV
Wesfil: 028AY004NV
Inclusion 1: 028AY028NV
Inclusion 2: None
Inclusion 3: 028AY027NV
Inclusion 4: 028AY007NV

099--Wesfil-Armespan-Heist association

Composition

Major Components
Wesfil very channery loam, 8 to 15 percent slopes--40 percent
Armespan very gravelly sandy loam, 2 to 8 percent slopes--25 percent
Heist silt loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Xeric Torriorthents sandy loam, 4 to 15 percent slopes--9 percent
Inclusion 2: Armespan gravelly sandy loam, 4 to 15 percent slopes--3 percent
Inclusion 3: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly sandy loam, 8 to 30 percent slopes--2 percent
Inclusion 4: Typic Torriorthents, coarse-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Wesfil--Landform: Hills; geomorphic position: summit; shape of slope: convex
Armespan--Landform: Fan remnants
Heist--Landform: Inset fans
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Hills; geomorphic position: backslope
Inclusion 4--Landform: Inset fans

Major Component Description

Wesfil Series
Elevation: 5,600 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Armespan Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Heist Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Wesfil: Indian ricegrass, black sagebrush, galleta, needleandthread
Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Heist: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread, spiny hopsage
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Inclusion 4: Indian ricegrass, galleta, winterfat

Ecological Site

Wesfil: 028AY004NV
Armespan: 028AY004NV
Heist: 028BY084NV
Inclusion 1: 028AY041NV
Inclusion 2: 028AY047NV
Inclusion 3: 028AY034NV
Inclusion 4: 028AY002NV

100--Benin-Mazuma association

Composition

Major Components

Benin silt loam, 0 to 2 percent slopes--55 percent
Mazuma silt loam, 2 to 4 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Typic Natrargids, fine-loamy, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Kawich fine sand, 4 to 30 percent slopes--5 percent
Inclusion 3: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silt loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Kawich fine sand, 4 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Benin--Landform: Lake plains
Mazuma--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Dunes
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Dunes

Major Component Description

Benin Series

Elevation: 4,800 to 4,900 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Mazuma Series

Elevation: 4,800 to 4,900 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Benin: Alkali sacaton, black greasewood, inland saltgrass
Mazuma: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 2: Indian ricegrass, alkali sacaton, black greasewood, fourwing saltbush
Inclusion 3: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 4: Indian ricegrass, alkali sacaton, black greasewood, fourwing saltbush

Ecological Site

Benin: 028BY020NV
Mazuma: 028BY074NV
Inclusion 1: 028BY047NV
Inclusion 2: 028AY011NV
Inclusion 3: 028BY047NV
Inclusion 4: 028AY011NV

101--Toano-Linoyer association

Composition

Major Components

Toano silt loam, 0 to 2 percent slopes--70 percent
Linoyer silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Zerk gravelly loam, 0 to 4 percent slopes--9 percent

Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins

Toano--Landform: Inset fans

Linoyer--Landform: Inset fans

Inclusion 1--Landform: Spits

Inclusion 2--Landform: Lake plains

Major Component Description

Toano Series

Elevation: 5,600 to 6,000 feet

Precipitation: About 7 inches

Air temperature: About 47 degrees

Frost-free season: About 115 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Linoyer Series

Elevation: 5,600 to 6,000 feet

Precipitation: About 8 inches

Air temperature: About 47 degrees

Frost-free season: About 110 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Toano: Indian ricegrass, sickle saltbush, western wheatgrass

Linoyer: Indian ricegrass, winterfat

Inclusion 1: Indian ricegrass, winterfat

Inclusion 2: Bottlebrush squirreltail, shadscale

Ecological Site

Toano: 028BY047NV

Linoyer: 028BY013NV

Inclusion 1: 028BY084NV

Inclusion 2: 028BY073NV

103--Benin-Playas association

Composition

Major Components

Benin silt loam, 0 to 2 percent slopes--45 percent

Playas silty clay loam, 0 to 1 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Sheffit silt loam, 0 to 2 percent slopes--5 percent

Inclusion 3: Aquic Torriorthents, fine, montmorillonitic (calcareous), mesic silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins

Benin--Landform: Lake plains

Playas--Landform: Lake plains

Inclusion 1--Landform: Lake plains

Inclusion 2--Landform: Lake plains

Inclusion 3--Landform: Lake plains

Major Component Description

Benin Series

Elevation: 6,000 to 6,100 feet

Precipitation: About 7 inches

Air temperature: About 48 degrees

Frost-free season: About 110 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Playas Miscellaneous Area

Elevation: 6,000 to 6,100 feet

Precipitation: About 7 inches

Air temperature: About 48 degrees

Frost-free season: About 110 days

Surface layer texture: Silty clay loam

Drainage class: Very poorly drained

Dominant Present Vegetation

Benin: Alkali sacaton, black greasewood, inland saltgrass

Playas: None

Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale

Inclusion 2: Basin wildrye, big sagebrush, black greasewood

Inclusion 3: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Benin: 028BY020NV

Playas: None

Inclusion 1: 028BY074NV

Inclusion 2: 028BY028NV
Inclusion 3: 028BY004NV

111--Gravier-Armespan association

Composition

Major Components

Gravier very gravelly sandy loam, 2 to 8 percent slopes--60 percent
Armespan very gravelly sandy loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Kyler stony sandy loam, 2 to 8 percent slopes--7 percent
Inclusion 2: Loray very gravelly loam, 2 to 4 percent slopes--6 percent
Inclusion 3: Xeric Torriorthents gravelly silt loam, 8 to 15 percent slopes--1 percent
Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Armespan--Landform: Barrier beaches
Inclusion 1--Landform: Pediments
Inclusion 2--Landform: Barrier beaches; position on slope: lower
Inclusion 3--Landform: Spits
Inclusion 4--Landform: Lagoons

Major Component Description

Gravier Series

Elevation: 4,800 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Armespan Series

Elevation: 4,800 to 5,400 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Gravier: Indian ricegrass, galleta, shadscale
Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 3: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 4: Bottlebrush squirreltail, shadscale

Ecological Site

Gravier: 028AY018NV
Armespan: 028AY013NV
Inclusion 1: 028AY004NV
Inclusion 2: 028AY012NV
Inclusion 3: 028AY004NV
Inclusion 4: 028BY073NV

113--Gravier-Jericho association

Composition

Major Components

Gravier very gravelly sandy loam, 4 to 15 percent slopes--30 percent
Gravier gravelly loam, 2 to 8 percent slopes--30 percent
Jericho very gravelly loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Loray very gravelly sandy loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Toano silt loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Xerollic Calciorthids, sandy-skeletal, mixed, mesic very gravelly sandy loam, 15 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Gravier--Landform: Barrier beaches
Jericho--Landform: Fan remnants
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Spits; geomorphic position: backslope

Major Component Description

Gravier Series

Elevation: 4,800 to 5,200 feet

Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Gravier Series
Elevation: 4,800 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Jericho Series
Elevation: 4,800 to 5,200 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Gravier: Indian ricegrass, galleta, shadscale
Gravier: Indian ricegrass, galleta, winterfat
Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, black sagebrush, galleta, needleandthread

Ecological Site

Gravier: 028AY018NV
Gravier: 028AY002NV
Jericho: 028AY013NV
Inclusion 1: 028AY012NV
Inclusion 2: 028BY013NV
Inclusion 3: 028AY013NV

116--Gravier-Izamatch-Loray association

Composition

Major Components
Gravier gravelly loam, 2 to 4 percent slopes--40 percent
Izamatch gravelly sandy loam, 2 to 4 percent slopes--30 percent
Loray gravelly sandy loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Armespan gravelly sandy loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Luning loamy sand, 0 to 4 percent slopes--5 percent
Inclusion 3: Toano silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Tooele silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Izamatch--Landform: Barrier beaches; position on slope: upper
Loray--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches; position on slope: upper
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Lake plains

Major Component Description

Gravier Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Izamatch Series
Elevation: 4,400 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Loray Series
Elevation: 4,400 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Gravier: Indian ricegrass, galleta, winterfat
Izamatch: Indian ricegrass, galleta, shadscale
Loray: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 3: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 4: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Gravier: 025XY002NV
Izamatch: 028AY018NV
Loray: 028AY012NV
Inclusion 1: 028AY013NV
Inclusion 2: 028AY006NV
Inclusion 3: 028AY033NV
Inclusion 4: 028BY074NV

118--Gravier-Automal-Zerk association

Composition

Major Components
Gravier very gravelly sandy loam, 2 to 4 percent slopes--40 percent
Automal gravelly silt loam, 2 to 4 percent slopes--25 percent
Zerk gravelly sandy loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions
Inclusion 1: Okan gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Piltdown loamy fine sand, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Automal--Landform: Barrier beaches; position on slope: upper
Zerk--Landform: Spits
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Dunes

Major Component Description

Gravier Series
Elevation: 5,700 to 6,000 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series
Elevation: 5,700 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Zerk Series
Elevation: 5,700 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Gravier: Indian ricegrass, winterfat
Automal: Indian ricegrass, black sagebrush, needleandthread
Zerk: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Black greasewood, bottlebrush squirreltail, sickle saltbush

Ecological Site

Gravier: 028BY084NV
Automal: 028BY011NV
Zerk: 028BY084NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY097NV

119--Wintermute-Linoyer association

Composition

Major Components

Wintermute gravelly sandy loam, 2 to 8 percent slopes--65 percent
Linoyer very fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Heist gravelly sandy loam, 2 to 8 percent slopes--6 percent
Inclusion 3: Okan gravelly sandy loam, 2 to 8 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants
Linoyer--Landform: Inset fans
Inclusion 1--Landform: Fan remnants; position on slope: lower
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans

Major Component Description

Wintermute Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Linoyer Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Wintermute: 028BY075NV
Linoyer: 028BY013NV
Inclusion 1: 028BY017NV
Inclusion 2: 028BY084NV
Inclusion 3: 028BY010NV

120--Izamatch-Armespan-Cliffdown association

Composition

Major Components

Izamatch very gravelly sandy loam, 2 to 8 percent slopes--40 percent
Armespan very gravelly sandy loam, 2 to 8 percent slopes--30 percent
Cliffdown very gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Loray gravelly sandy loam, 2 to 8 percent slopes--9 percent
Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly coarse sand, 2 to 8 percent slopes--3 percent
Inclusion 3: Jericho very gravelly sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic, shallow gravelly loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Izamatch--Landform: Barrier beaches
Armespan--Landform: Barrier beaches
Cliffdown--Landform: Barrier beaches; position on slope: lower
Inclusion 1--Landform: Barrier beaches; position on slope: lower
Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Barrier beaches

Major Component Description

Izamatch Series
Elevation: 4,200 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Armespan Series
Elevation: 4,200 to 5,300 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Cliffdown Series
Elevation: 4,200 to 4,500 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Izamatch: Indian ricegrass, galleta, shadscale
Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Cliffdown: Indian ricegrass, galleta, shadscale
Inclusion 1: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 2: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 3: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 4: Indian ricegrass, galleta, horsebrush, shadscale

Ecological Site

Izamatch: 028AY018NV
Armespan: 028AY004NV
Cliffdown: 028AY018NV
Inclusion 1: 028AY012NV
Inclusion 2: 028AY037NV
Inclusion 3: 028AY004NV
Inclusion 4: 028AY014NV

122--Gravier-Izamatch association

Composition

Major Components
Gravier gravelly loam, 2 to 8 percent slopes--50 percent
Izamatch very gravelly sandy loam, 2 to 8 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Luning gravelly loamy sand, 2 to 8 percent slopes--5 percent
Inclusion 2: Loray very gravelly loamy sand, 2 to 8 percent slopes--5 percent
Inclusion 3: Gravier gravelly loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Typic Torriorthents, sandy-skeletal, carbonatic, mesic extremely gravelly coarse sand, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Izamatch--Landform: Barrier beaches; position on slope: lower
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Drainageways

Major Component Description

Gravier Series
Elevation: 4,700 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Izamatch Series
Elevation: 4,700 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days

Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Gravier: Indian ricegrass, galleta, shadscale
Izamatch: Indian ricegrass, galleta, shadscale
Inclusion 1: Indian ricegrass, galleta, horsebrush, shadscale
Inclusion 2: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 3: Indian ricegrass, galleta, winterfat
Inclusion 4: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Gravier: 028AY018NV
Izamatch: 028AY018NV
Inclusion 1: 028AY014NV
Inclusion 2: 028AY012NV
Inclusion 3: 028AY002NV
Inclusion 4: 028AY037NV

130--Tooele-Benin association

Composition

Major Components

Tooele sandy loam, 2 to 4 percent slopes--65 percent
Benin silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Toano silt loam, 2 to 8 percent slopes--8 percent
Inclusion 2: Kawich fine sand, 4 to 30 percent slopes--3 percent
Inclusion 3: Typic Natrargids, fine-loamy, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Loray very gravelly sandy loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Tooele--Landform: Lake plains
Benin--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Dunes
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Barrier beaches

Major Component Description

Tooele Series

Elevation: 4,400 to 4,800 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Benin Series

Elevation: 4,400 to 4,800 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Tooele: Black greasewood, bottlebrush squirreltail, shadscale
Benin: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 2: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 3: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 4: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Tooele: 028BY074NV
Benin: 028BY020NV
Inclusion 1: 028BY047NV
Inclusion 2: 028BY021NV
Inclusion 3: 028BY074NV
Inclusion 4: 028BY017NV

140--Gollaher-Belsac association

Composition

Major Components

Gollaher extremely gravelly loam, 15 to 50 percent slopes--70 percent
Belsac very gravelly loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Haploxerolls, loamy-skeletal, mixed, frigid very gravelly loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Typic Calcixerolls, loamy-skeletal, carbonatic, frigid very gravelly silt loam, 30 to 50 percent slopes--1 percent
Inclusion 3: Aridic Calcixerolls, loamy-skeletal, carbonatic, frigid very gravelly loam, 30 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Gollaher--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Belsac--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave
Inclusion 2--Landform: Mountains; geomorphic position: backslope
Inclusion 3--Landform: Mountains; geomorphic position: backslope

Major Component Description

Gollaher Series

Elevation: 6,100 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Belsac Series

Elevation: 6,100 to 8,200 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 65 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Dominant Present Vegetation

Gollaher: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Belsac: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 1: Idaho fescue, bluebunch wheatgrass, low sagebrush
Inclusion 2: Idaho fescue, black sagebrush
Inclusion 3: Thurber needlegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Gollaher: 025XY057NV
Belsac: 025XY004NV
Inclusion 1: 025XY017NV
Inclusion 2: 024XY042NV
Inclusion 3: 024XY031NV

151--Hopeka-Amene-Rock outcrop association

Composition

Major Components

Hopeka very gravelly loam, 30 to 50 percent slopes--45 percent
Amene very gravelly silt loam, 30 to 50 percent slopes--20 percent
Rock outcrop--20 percent

Contrasting Inclusions

Inclusion 1: Aridic Haploxerolls, loamy-skeletal, mixed, frigid very gravelly loam, 30 to 50 percent slopes--5 percent
Inclusion 2: Aridic Calcixerolls, loamy-skeletal, carbonatic, frigid gravelly loam, 15 to 30 percent slopes--5 percent
Inclusion 3: Aridic Calcixerolls, loamy-skeletal, mixed, frigid very gravelly silt loam, 30 to 50 percent slopes--3 percent
Inclusion 4: Gollaher very cobbly loam, 15 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Hopeka--Landform: Mountains; geomorphic position: summit
Amene--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Hopeka Series
Elevation: 6,400 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Amene Series
Elevation: 6,400 to 7,500 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 2 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum derived from limestone and dolomite

Rock outcrop Miscellaneous Area
Elevation: 6,400 to 7,500 feet

Dominant Present Vegetation

Hopeka: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Amene: Idaho fescue, Utah serviceberry, bluebunch wheatgrass
Rock outcrop: None
Inclusion 1: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Idaho fescue, basin big sagebrush, bluebunch wheatgrass
Inclusion 3: Mountain big sagebrush
Inclusion 4: Thurber needlegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Hopeka: 028BY060NV
Amene: 025XY042NV
Rock outcrop: None
Inclusion 1: 025XY009NV
Inclusion 2: 025XY027NV
Inclusion 3: 025XY012NV
Inclusion 4: 025XY057NV

154--Hopeka-Tecomar association

Composition

Major Components
Hopeka very gravelly loam, 30 to 75 percent slopes--65 percent
Tecomar extremely cobbly silt loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Rock outcrop--8 percent
Inclusion 2: Amtoft extremely gravelly loam, 30 to 50 percent slopes--5 percent
Inclusion 3: Cavehill very gravelly silt loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Hopeka--Landform: Mountains; geomorphic position: summit
Tecomar--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: backslope
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Major Component Description

Hopeka Series
Elevation: 5,400 to 8,100 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series
Elevation: 5,400 to 8,100 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 20 percent cobbles; 40 percent gravel
Surface layer texture: Extremely cobbly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Hopeka: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Tecomar: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: None
Inclusion 2: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon

Ecological Site

Hopeka: 028BY060NV
Tecomar: 028BY006NV
Inclusion 1: None
Inclusion 2: 025XY057NV
Inclusion 3: 028BY058NV

160--Saltair-Kawich association

Composition

Major Components

Saltair silt loam, 0 to 2 percent slopes--70 percent
Kawich fine sand, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic sandy loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Ragtown silt loam, 2 to 4 percent slopes--4 percent
Inclusion 3: Playas, 0 to 2 percent slopes--3 percent
Inclusion 4: Benin silty clay loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Intermontane basins
Saltair--Landform: Lake plains
Kawich--Landform: Dunes
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Saltair Series

Elevation: 4,300 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 135 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Kawich Series

Elevation: 4,300 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Saltair: Inland saltgrass, iodinebush
Kawich: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 1: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 2: Bottlebrush squirreltail, gray molly kochia, sickle saltbush
Inclusion 3: None
Inclusion 4: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Saltair: 028AY009NV
Kawich: 028BY021NV
Inclusion 1: 028AY033NV
Inclusion 2: 028AY020NV
Inclusion 3: None
Inclusion 4: 028BY020NV

161--Saltair-Playas association

Composition

Major Components

Saltair silt loam, 0 to 2 percent slopes--65 percent
Playas silty clay, 0 to 1 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Tooele silt loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Typic Halaquepts, fine-silty, mixed (calcareous), mesic silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Typic Halaquepts, fine-silty, mixed (calcareous), mesic silty clay, 0 to 1 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Saltair--Landform: Lake plains

Playas--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains

Major Component Description

Saltair Series
Elevation: 4,200 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 135 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Playas Miscellaneous Area
Elevation: 4,200 to 4,300 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Very poorly drained

Dominant Present Vegetation

Saltair: Inland saltgrass, iodinebush
Playas: None
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Inland saltgrass
Inclusion 3: Cattail

Ecological Site

Saltair: 028AY009NV
Playas: None
Inclusion 1: 028BY074NV
Inclusion 2: 028AY046NV
Inclusion 3: 028BY044NV

171--Loray-Gravier-Toano association

Composition

Major Components
Loray gravelly sandy loam, 2 to 8 percent slopes--40 percent
Gravier very gravelly sandy loam, 2 to 8 percent slopes--30 percent
Toano very fine sandy loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Izamatch gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Xeric Torriorthents very gravelly sandy loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Luning gravelly loamy sand, 2 to 8 percent slopes--3 percent
Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Intermontane basins
Loray--Landform: Barrier beaches
Gravier--Landform: Barrier beaches
Toano--Landform: Lagoons
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Spits
Inclusion 4--Landform: Lagoons

Major Component Description

Loray Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Gravier Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Toano Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 115 days
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Loray: Indian ricegrass, bud sagebrush, galleta, shadscale

Gravier: Indian ricegrass, galleta, winterfat
Toano: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, galleta, shadscale
Inclusion 2: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 3: Indian ricegrass, galleta, horsebrush, shadscale
Inclusion 4: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Loray: 028BY063NV
Gravier: 028AY002NV
Toano: 028AY030NV
Inclusion 1: 028AY018NV
Inclusion 2: 028AY004NV
Inclusion 3: 028AY014NV
Inclusion 4: 028BY074NV

173--Cliffdown-Armespan-Izamatch association

Composition

Major Components

Cliffdown very gravelly sandy loam, 2 to 4 percent slopes--45 percent
Armespan very gravelly sandy loam, 2 to 8 percent slopes--25 percent
Izamatch very gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Kyler very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Theriot very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Gravier very gravelly fine sandy loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Cliffdown--Landform: Barrier beaches
Armespan--Landform: Barrier beaches
Izamatch--Landform: Barrier beaches; position on slope: upper
Inclusion 1--Landform: Pediments
Inclusion 2--Landform: Pediments
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Drainageways

Major Component Description

Cliffdown Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Armespan Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Izamatch Series

Elevation: 4,800 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Cliffdown: Indian ricegrass, galleta, shadscale
Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Izamatch: Indian ricegrass, galleta, shadscale
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread, spiny hopsage
Inclusion 3: Indian ricegrass, galleta, winterfat
Inclusion 4: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Cliffdown: 028AY018NV

Armespan: 028AY004NV
Izamatch: 028AY014NV
Inclusion 1: 028AY004NV
Inclusion 2: 028AY047NV
Inclusion 3: 028AY002NV
Inclusion 4: 028AY037NV

174--Wintermute-Linoyer-Okan association

Composition

Major Components

Wintermute gravelly silt loam, 0 to 4 percent slopes--55 percent
Linoyer silt loam, 0 to 4 percent slopes--20 percent
Okan sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Durorthids, sandy-skeletal, mixed, mesic, shallow gravelly sandy loam, 2 to 8 percent slopes--7 percent
Inclusion 2: Gravier gravelly loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Intermontane basins
Wintermute--Landform: Barrier beaches
Linoyer--Landform: Drainageways
Okan--Landform: Drainageways
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Barrier beaches

Major Component Description

Wintermute Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Linoyer Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Linoyer: Indian ricegrass, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, winterfat

Ecological Site

Wintermute: 028BY075NV
Linoyer: 028BY013NV
Okan: 028BY052NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY084NV

175--Loray-Wintermute association

Composition

Major Components

Loray gravelly sandy loam, 2 to 4 percent slopes--70 percent
Wintermute gravelly silt loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Automal gravelly loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Sheffit silt loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Loray--Landform: Barrier beaches
Wintermute--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Lagoons

Major Component Description

Loray Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Wintermute Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Loray: Indian ricegrass, bud sagebrush, shadscale
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Loray: 028AY012NV
Wintermute: 028BY075NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY028NV

176--Zerk-Loray association

Composition

Major Components
Loray gravelly sandy loam, 0 to 4 percent slopes--40 percent
Zerk gravelly loam, 0 to 4 percent slopes--30 percent
Zerk gravelly fine sandy loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Linoyer silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Toano silt loam, 0 to 2 percent slopes--1 percent
Inclusion 4: Okan gravelly sandy loam, 0 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Loray--Landform: Barrier beaches
Zerk--Landform: Barrier beaches
Zerk--Landform: Barrier beaches
Inclusion 1--Landform: Lagoons
Inclusion 2--Landform: Lagoons
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Drainageways

Major Component Description

Loray Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Zerk Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Loray: Indian ricegrass, winterfat
Zerk: Indian ricegrass, bud sagebrush, shadscale

Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Bottlebrush squirreltail, shadscale
Inclusion 3: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Loray: 028BY012NV
Zerk: 028BY084NV
Zerk: 028AY075NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY073NV
Inclusion 3: 028BY047NV
Inclusion 4: 028BY010NV

181--Peeko-Dewar association

Composition

Major Components

Peeko gravelly loam, 2 to 8 percent slopes--40 percent
Dewar gravelly silt loam, 2 to 8 percent slopes--25 percent
Peeko gravelly loam, 15 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Enko sandy loam, 2 to 8 percent slopes--9 percent
Inclusion 2: Xeric Torriorthents gravelly sandy loam, 15 to 50 percent slopes--3 percent
Inclusion 3: Chiara silt loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Peeko--Landform: Fan remnants; geomorphic position: summit
Dewar--Landform: Fan remnants; geomorphic position: summit
Peeko--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Peeko Series

Elevation: 5,800 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dewar Series

Elevation: 5,800 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Peeko Series

Elevation: 5,800 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Dewar: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, black sagebrush
Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Peeko: 024XY030NV
Dewar: 025XY019NV
Peeko: 024XY030NV
Inclusion 1: 025XY019NV
Inclusion 2: 025XY025NV
Inclusion 3: 025XY019NV

182--Peeko-Gance association

Composition

Major Components

Peeko silt loam, 4 to 15 percent slopes--45 percent
Peeko silt loam, 15 to 30 percent slopes--25 percent
Gance very gravelly loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Chiara silt loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Izar very gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Aridic Argixerolls, fine-loamy, mixed, mesic very gravelly loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Peeko--Landform: Fan remnants; geomorphic position: summit
Peeko--Landform: Fan remnants; geomorphic position: backslope; shape of slope: convex
Gance--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Fan remnants; geomorphic position: summit
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: summit; shape of slope: concave

Major Component Description

Peeko Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Peeko Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Gance Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Gance: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 3: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass

Ecological Site

Peeko: 024XY030NV
Peeko: 024XY030NV
Gance: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 024XY030NV
Inclusion 3: 025XY014NV

183--Peeko-Enko-Izar association

Composition

Major Components

Peeko gravelly loam, 4 to 15 percent slopes--50 percent
Enko fine sandy loam, 4 to 15 percent slopes--20 percent
Izar very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Kzin very gravelly loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Hundraw very gravelly loam, 8 to 15 percent slopes--7 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Peeko--Landform: Fan remnants; geomorphic position: summit

Enko--Landform: Inset fans
Izar--Landform: Pediments; geomorphic position: backslope
Inclusion 1--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Pediments; geomorphic position: backslope

Major Component Description

Peeko Series
Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Enko Series
Elevation: 5,800 to 6,500 feet
Precipitation: About 9 inches
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Izar Series
Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Izar: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 1: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 2: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass

Ecological Site

Peeko: 024XY030NV
Enko: 025XY019NV
Izar: 024XY030NV
Inclusion 1: 028BY060NV
Inclusion 2: 025XY060NV

185--Peeko-Chiara association

Composition

Major Components
Peeko silt loam, 2 to 8 percent slopes--35 percent
Peeko silt loam, 8 to 15 percent slopes--35 percent
Chiara silt loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Haploxerollic Durorthids, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 50 percent slopes--9 percent
Inclusion 2: Dewar silt loam, 4 to 15 percent slopes--3 percent
Inclusion 3: Gance gravelly loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Hundraw very gravelly loam, 15 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Peeko--Landform: Fan remnants; geomorphic position: summit
Peeko--Landform: Fan remnants; geomorphic position: summit
Chiara--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope; aspect: north
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: summit
Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Peeko Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Peeko Series
Elevation: 5,800 to 6,200 feet

Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Chiara Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Chiara: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 4: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass

Ecological Site

Peeko: 024XY030NV
Peeko: 024XY030NV
Chiara: 025XY019NV
Inclusion 1: 024XY031NV
Inclusion 2: 025XY019NV
Inclusion 3: 025XY019NV
Inclusion 4: 025XY060NV

186--Palinor-Pharo-Hundraw association

Composition

Major Components

Palinor gravelly loam, 2 to 8 percent slopes--55 percent
Pharo gravelly loam, 8 to 30 percent slopes--15 percent
Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Wintermute gravelly silt loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Zerk gravelly loamy sand, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; geomorphic position: summit
Pharo--Landform: Fan remnants; geomorphic position: backslope
Hundraw--Landform: Pediments; geomorphic position: backslope
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants; position on slope: lower
Inclusion 3--Landform: Fan remnants; position on slope: lower

Major Component Description

Palinor Series
Elevation: 5,900 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Pharo Series
Elevation: 5,900 to 7,000 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Hundraw Series
Elevation: 5,900 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Hundraw: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 3: Indian ricegrass, winterfat

Ecological Site

Palinor: 028BY011NV
Pharo: 028BY006NV
Hundraw: 025XY060NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY084NV

187--Peeko-Izar association

Composition

Major Components

Peeko gravelly loam, 4 to 15 percent slopes--45 percent
Izar very gravelly loam, 8 to 30 percent slopes--25 percent
Izar very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 4 to 15 percent slopes--9 percent
Inclusion 2: Wintermute gravelly silt loam, 4 to 15 percent slopes--2 percent
Inclusion 3: Hundraw very gravelly loam, 8 to 30 percent slopes--2 percent
Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Peeko--Landform: Fan remnants; geomorphic position: summit
Izar--Landform: Fan remnants; geomorphic position: backslope
Izar--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants; position on slope: lower
Inclusion 3--Landform: Pediments; geomorphic position: backslope
Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Peeko Series

Elevation: 6,200 to 6,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Izar Series

Elevation: 6,200 to 6,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Izar Series

Elevation: 6,200 to 6,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Peeko: Indian ricegrass, black sagebrush, needleandthread
Izar: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Izar: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 3: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 4: None

Ecological Site

Peeko: 028BY011NV
Izar: 028BY083NV
Izar: 028BY016NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY060NV
Inclusion 4: None

188--Palinor-Automal-Izar association

Composition

Major Components

Palinor very gravelly loam, 4 to 15 percent slopes--50 percent
Automal gravelly silt loam, 15 to 50 percent slopes--15 percent
Izar very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pharo gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Jericho gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Wintermute gravelly silt loam, 2 to 8 percent slopes--8 percent
Inclusion 4: Hundraw very gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; geomorphic position: summit
Automal--Landform: Fan remnants; geomorphic position: backslope
Izar--Landform: Pediments; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: upper
Inclusion 2--Landform: Fan remnants; geomorphic position: summit
Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: lower
Inclusion 4--Landform: Pediments; geomorphic position: backslope; position on slope: upper

Major Component Description

Palinor Series

Elevation: 6,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series

Elevation: 6,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Izar Series

Elevation: 6,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Izar: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 4: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Palinor: 028BY011NV
Automal: 028BY016NV
Izar: 028BY083NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY075NV
Inclusion 4: 028BY060NV

192--Hutchley-Simon association

Composition

Major Components

Hutchley very gravelly loam, 8 to 30 percent slopes--60 percent

Simon loam, 15 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Haunchee gravelly loam, 15 to 50 percent slopes--6 percent

Inclusion 2: Hardzem channery loam, 15 to 50 percent slopes--5 percent

Inclusion 3: Rock outcrop--4 percent

Map Unit Setting

Landscape position: Mountains

Hutchley--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Simon--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Inclusion 1--Landform: Mountains; geomorphic position: backslope

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 3--Landform: Mountains; geomorphic position: backslope

Major Component Description

Hutchley Series

Elevation: 6,800 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 43 degrees
Frost-free season: About 65 days
Surface rock fragments: 10 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Simon Series

Elevation: 6,800 to 8,200 feet
Precipitation: About 11 inches
Frost-free season: About 95 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Hutchley: Thurber needlegrass, bluebunch wheatgrass, low sagebrush

Simon: Idaho fescue, basin big sagebrush, bluebunch wheatgrass

Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Inclusion 2: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir

Inclusion 3: None

Ecological Site

Hutchley: 028BY034NV
Simon: 025XY027NV
Inclusion 1: 028BY043NV
Inclusion 2: 028BY063NV
Inclusion 3: None

201--Tecomar-Hopeka-Rock outcrop association

Composition

Major Components

Tecomar extremely stony silt loam, 15 to 50 percent slopes--50 percent

Hopeka very gravelly loam, 30 to 50 percent slopes--20 percent

Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Amtoft extremely gravelly loam, 15 to 50 percent slopes--10 percent

Inclusion 2: Xerollic Calciorthids, loamy-skeletal, carbonantic, mesic very gravelly loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains

Tecomar--Landform: Mountains; geomorphic position: backslope; aspect: south

Hopeka--Landform: Mountains; geomorphic position: summit

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope

Inclusion 2--Landform: Mountains; geomorphic position: summit

Major Component Description

Tecomar Series

Elevation: 5,600 to 6,900 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Extremely stony silt loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Hopeka Series
Elevation: 5,600 to 6,900 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area
Elevation: 5,600 to 6,900 feet

Dominant Present Vegetation

Tecomar: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Hopeka: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Tecomar: 024XY031NV
Hopeka: 028BY060NV
Rock outcrop: None
Inclusion 1: 025XY057NV
Inclusion 2: 028BY006NV

203--Tecomar-Pookaloo-Pharo association

Composition

Major Components
Tecomar extremely gravelly loam, 8 to 30 percent slopes--40 percent
Pookaloo very gravelly loam, 8 to 30 percent slopes--30 percent
Pharo gravelly loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Petrocalcic Palexerolls, loamy-skeletal, carbonatic, mesic gravelly loam, 4 to 15 percent slopes--10 percent
Inclusion 2: Aridic Calcixerolls, loamy-skeletal, carbonatic, frigid very gravelly loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Aridic Haploxerolls, loamy-skeletal, mixed, frigid very gravelly loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Tecomar--Landform: Hills; geomorphic position: backslope; aspect: south
Pookaloo--Landform: Hills; geomorphic position: backslope; aspect: north
Pharo--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: concave
Inclusion 3--Landform: Drainageways

Major Component Description

Tecomar Series
Elevation: 6,800 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series
Elevation: 6,800 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pharo Series
Elevation: 6,300 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Basin big sagebrush, basin wildrye, rubber rabbitbrush

Ecological Site

Tecomar: 028BY008NV
Pookaloo: 028BY060NV
Pharo: 028BY006NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY079NV
Inclusion 3: 028BY003NV

210--Mazuma-Hardhat-Loray association

Composition

Major Components

Mazuma silt loam, 0 to 4 percent slopes--40 percent
Hardhat silt loam, 2 to 8 percent slopes--30 percent
Loray gravelly sandy loam, 2 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Toano silt loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Benin silty clay loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Durorthidic Torriorthents, coarse-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Mazuma--Landform: Lake plains
Hardhat--Landform: Lake terraces
Loray--Landform: Barrier beaches
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains

Major Component Description

Mazuma Series

Elevation: 4,800 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Hardhat Series

Elevation: 4,800 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 49 degrees
Frost-free season: About 115 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Loray Series

Elevation: 4,800 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Mazuma: Black greasewood, bottlebrush squirreltail, shadscale
Hardhat: Bottlebrush squirreltail, shadscale
Loray: Indian ricegrass, bud sagebrush, shadscale
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 3: Indian ricegrass, black greasewood, spiny hopsage

Ecological Site

Mazuma: 028BY074NV
Hardhat: 028BY073NV
Loray: 028AY012NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY020NV
Inclusion 3: 028AY032NV

211--Valmy-Enko association

Composition

Major Components

Valmy silt loam, 0 to 2 percent slopes--55 percent

Enko fine sandy loam, 2 to 4 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Oupico loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Durorthidic Torriorthents, coarse-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Durixerollic Camborthids, loamy-skeletal, mixed, mesic gravelly loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Kelk silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Valmy--Landform: Fan skirts; position on slope: lower
Enko--Landform: Fan skirts; position on slope: upper
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Alluvial flats
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Inset fans

Major Component Description

Valmy Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Enko Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Valmy: Basin big sagebrush, big sagebrush, black greasewood
Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Basin wildrye, black greasewood
Inclusion 3: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 4: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Valmy: 024XY022NV
Enko: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 024XY008NV
Inclusion 3: 024XY030NV
Inclusion 4: 025XY019NV

230--Zafod-Pyrat-Palinor association

Composition

Major Components

Zafod extremely stony loam, 8 to 30 percent slopes--40 percent
Pyrat very stony sandy loam, 8 to 30 percent slopes--25 percent
Palinor very gravelly loam, 15 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, mesic extremely cobbly loam, 15 to 30 percent slopes--8 percent
Inclusion 2: Rubble land, 8 to 30 percent slopes--7 percent

Map Unit Setting

Landscape position: Fan piedmonts
Zafod--Landform: Fan remnants
Pyrat--Landform: Inset fans
Palinor--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants; position on slope: upper

Major Component Description

Zafod Series

Elevation: 4,900 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent stones and boulders; 5 percent cobbles; 15 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Pyrat Series
Elevation: 4,900 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent stones and boulders; 5 percent cobbles; 20 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Palinor Series
Elevation: 4,900 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Zafod: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Palinor: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: None

Ecological Site

Zafod: 028BY007NV
Pyrat: 028BY010NV
Palinor: 028BY011NV
Inclusion 1: 028BY007NV
Inclusion 2: None

231--Dacker-Nevador-Kelk association

Composition

Major Components
Dacker silt loam, 2 to 4 percent slopes--45 percent
Nevador loam, 4 to 15 percent slopes--25 percent
Kelk silt loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Hunnton loam, 2 to 4 percent slopes--4 percent
Inclusion 2: Oupico loam, 2 to 4 percent slopes--3 percent
Inclusion 3: Xerollic Camborthids, sandy-skeletal, mixed, mesic sandy loam, 0 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Dacker--Landform: Fan remnants; geomorphic position: summit
Nevador--Landform: Fan remnants; geomorphic position: backslope
Kelk--Landform: Inset fans
Inclusion 1--Landform: Fan remnants; geomorphic position: summit
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Dacker Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Nevador Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Kelk Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Dacker: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Nevador: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Kelk: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Dacker: 025XY019NV
Nevador: 025XY019NV
Kelk: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 025XY019NV
Inclusion 3: 025XY019NV

240--Hundraw-Cobre association

Composition

Major Components

Hundraw gravelly loam, 15 to 50 percent slopes--65 percent
Cobre silt loam, 4 to 15 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents gravelly silty clay loam, 15 to 30 percent slopes--3 percent
Inclusion 2: Okan gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Peeko silt loam, 4 to 15 percent slopes--3 percent
Inclusion 4: Linoyer gravelly sandy loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills
Hundraw--Landform: Hills; geomorphic position: backslope
Cobre--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 1--Landform: Hills; geomorphic position: backslope
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Drainageways

Major Component Description

Hundraw Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Cobre Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Hundraw: Indian ricegrass, Thurber needlegrass, black sagebrush
Cobre: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, black sagebrush
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Hundraw: 024XY030NV
Cobre: 025XY019NV
Inclusion 1: 025XY025NV
Inclusion 2: 028BY052NV
Inclusion 3: 024XY030NV
Inclusion 4: 028BY013NV

241--Hundraw-Peeko-Kzin association

Composition

Major Components

Hundraw gravelly fine sandy loam, 4 to 15 percent slopes--50 percent

Peeko gravelly loam, 4 to 15 percent slopes--20 percent
Kzin very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Automal very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Tulase silty clay loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Pharo gravelly loam, 8 to 15 percent slopes--3 percent
Inclusion 4: Izar very gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Hundraw--Landform: Hills; geomorphic position: backslope
Peeko--Landform: Fan remnants; geomorphic position: summit
Kzin--Landform: Hills; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: upper
Inclusion 4--Landform: Hills; geomorphic position: backslope

Major Component Description

Hundraw Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Peeko Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Kzin Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Dominant Present Vegetation

Hundraw: Indian ricegrass, black sagebrush, needleandthread
Peeko: Indian ricegrass, black sagebrush, needleandthread
Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Hundraw: 028BY011NV
Peeko: 028BY011NV
Kzin: 028BY060NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY045NV
Inclusion 3: 028BY006NV
Inclusion 4: 028BY011NV

242--Cobre-Hundraw-Chiara association

Composition

Major Components

Cobre silt loam, 4 to 15 percent slopes--50 percent
Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--20 percent
Chiara silt loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pharo gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Durixerollic Calciorthids, loamy-skeletal, mixed, mesic very gravelly silt loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Okan gravelly sandy loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Cobre--Landform: Pediments; geomorphic position: backslope
Hundraw--Landform: Pediments; geomorphic position: backslope
Chiara--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower
Inclusion 3--Landform: Inset fans

Major Component Description

Cobre Series
Elevation: 6,200 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Hundraw Series
Elevation: 6,200 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Chiara Series
Elevation: 6,200 to 6,700 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Cobre: Indian ricegrass, Wyoming big sagebrush, needleandthread
Hundraw: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Chiara: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Cobre: 028BY010NV
Hundraw: 028BY083NV
Chiara: 028BY010NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY083NV
Inclusion 3: 028BY052NV

244--Hundraw-Shabliss-Palinor association

Composition

Major Components
Hundraw gravelly fine sandy loam, 4 to 15 percent slopes--40 percent
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--30 percent
Palinor gravelly loam, 2 to 8 percent slopes--15 percent
Contrasting Inclusions
Inclusion 1: Izar very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Oupico loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Xerollic Camborthids, coarse-silty, mixed, mesic silt loam, 0 to 4 percent slopes--4 percent
Inclusion 4: Tulase silt loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Hundraw--Landform: Pediments; geomorphic position: backslope
Shabliss--Landform: Fan remnants; geomorphic position: summit
Palinor--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants; geomorphic position: summit
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Inset fans

Major Component Description

Hundraw Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Shabliss Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Palinor Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Hundraw: Indian ricegrass, black sagebrush, needleandthread
Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Palinor: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, bottlebrush squirreltail, shadscale
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Hundraw: 028BY011NV
Shabliss: 028BY010NV
Palinor: 028BY011NV
Inclusion 1: 028BY083NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY009NV
Inclusion 4: 028BY045NV

250--Izar-Holborn-Kzin association

Composition

Major Components
Izar very gravelly loam, 15 to 50 percent slopes--50 percent
Holborn gravelly loam, 8 to 30 percent slopes--20 percent
Kzin very gravelly loam, 8 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Xeric Torriorthents gravelly loam, 2 to 4 percent slopes--6 percent
Inclusion 2: Palinor very gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Xeric Torriorthents gravelly sandy loam, 30 to 75 percent slopes--3 percent
Inclusion 4: Kelk silt loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Izar--Landform: Pediments; geomorphic position: backslope
Holborn--Landform: Pediments; geomorphic position: backslope; aspect: north
Kzin--Landform: Pediments; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Partial ballenas; geomorphic position: summit
Inclusion 3--Landform: Pediments; geomorphic position: backslope
Inclusion 4--Landform: Inset fans

Major Component Description

Izar Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Holborn Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Kzin Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Dominant Present Vegetation

Izar: Indian ricegrass, black sagebrush, needleandthread
Holborn: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, black sagebrush
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Izar: 028BY011NV
Holborn: 028BY006NV
Kzin: 028BY060NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY011NV
Inclusion 3: 025XY025NV
Inclusion 4: 028BY010NV

251--Izar-Palinor-Shabliss association

Composition

Major Components
Izar very gravelly loam, 4 to 15 percent slopes--45 percent
Palinor very gravelly loam, 2 to 8 percent slopes--25 percent
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Izar very gravelly loam, 15 to 30 percent slopes--6 percent
Inclusion 2: Wintermute gravelly silt loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Xerollic Camborthids, coarse-silty, mixed, mesic silt loam, 0 to 4 percent slopes--3 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Izar--Landform: Pediments
Palinor--Landform: Fan remnants
Shabliss--Landform: Fan remnants
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants; position on slope: lower
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Izar Series
Elevation: 5,400 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Palinor Series
Elevation: 5,400 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel

Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Shabliss Series
Elevation: 5,400 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Izar: Indian ricegrass, black sagebrush, needleandthread
Palinor: Indian ricegrass, black sagebrush, needleandthread
Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 3: Indian ricegrass, bottlebrush squirreltail, shadscale
Inclusion 4: None

Ecological Site

Izar: 028BY011NV
Palinor: 028BY011NV
Shabliss: 028BY010NV
Inclusion 1: 028BY018NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY009NV
Inclusion 4: None

252--Izar-Hundraw-Okan association

Composition

Major Components
Izar very gravelly loam, 2 to 8 percent slopes--40 percent
Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--30 percent
Okan sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Tulase silty clay loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Palinor very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Okan gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Hills
Izar--Landform: Hills; geomorphic position: summit
Hundraw--Landform: Hills; geomorphic position: backslope
Okan--Landform: Drainageways
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Hills; geomorphic position: summit

Major Component Description

Izar Series
Elevation: 6,000 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Hundraw Series
Elevation: 6,000 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Okan Series
Elevation: 6,000 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Izar: Indian ricegrass, black sagebrush, needleandthread

Hundraw: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 4: None

Ecological Site

Izar: 028BY011NV
Hundraw: 028BY083NV
Okan: 028BY010NV
Inclusion 1: 028BY045NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY052NV
Inclusion 4: None

260--Dewar-Chiara-Hunnton association

Composition

Major Components

Dewar gravelly silt loam, 2 to 8 percent slopes--40 percent
Chiara silt loam, 2 to 8 percent slopes--30 percent
Hunnton silt loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Haplargids, fine, montmorillonitic, mesic gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Enko sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Pharo gravelly silt loam, 4 to 15 percent slopes--3 percent
Inclusion 4: Durixerollic Camborthids, loamy-skeletal, mixed, mesic gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Dewar--Landform: Fan remnants; geomorphic position: summit
Chiara--Landform: Fan remnants; geomorphic position: summit
Hunnton--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: upper
Inclusion 4--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

Dewar Series

Elevation: 5,800 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Chiara Series

Elevation: 5,800 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Hunnton Series

Elevation: 5,800 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Dewar: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Chiara: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Hunnton: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Dewar: 025XY019NV
Chiara: 025XY019NV
Hunnton: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 025XY019NV
Inclusion 3: 028BY006NV
Inclusion 4: 025XY019NV

270--Chiara-Kelk association

Composition

Major Components

Chiara silt loam, 2 to 4 percent slopes--50 percent
Kelk silt loam, 2 to 8 percent slopes--20 percent
Kelk silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--10 percent
Inclusion 2: Xerollic Camborthids, sandy-skeletal, mixed, mesic very gravelly sandy loam, 4 to 15 percent slopes--3 percent
Inclusion 3: Dacker silt loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Chiara--Landform: Fan remnants
Kelk--Landform: Inset fans
Kelk--Landform: Inset fans
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants

Major Component Description

Chiara Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Kelk Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Kelk Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Chiara: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Kelk: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Kelk: Basin big sagebrush, basin wildrye, black greasewood
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, black sagebrush
Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Chiara: 025XY019NV
Kelk: 025XY019NV
Kelk: 024XY006NV
Inclusion 1: 025XY025NV
Inclusion 2: 025XY019NV
Inclusion 3: 025XY019NV

273--Chiara-Dewar-Enko association

Composition

Major Components

Chiara silt loam, 2 to 4 percent slopes--40 percent
Dewar gravelly silt loam, 2 to 4 percent slopes--35 percent
Enko fine sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Dacker silt loam, 2 to 8 percent slopes--6 percent
Inclusion 2: Peeko gravelly silt loam, 2 to 4 percent slopes--3 percent

Inclusion 3: Xerollic Camborthids, coarse-silty, mixed, mesic gravelly silt loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Chiara--Landform: Fan remnants
Dewar--Landform: Fan remnants
Enko--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Chiara Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dewar Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Enko Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Chiara: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Dewar: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Chiara: 025XY019NV
Dewar: 025XY019NV
Enko: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 024XY030NV
Inclusion 3: 025XY019NV

276--Chiara-Peeko-Urmafot association

Composition

Major Components
Chiara silt loam, 2 to 4 percent slopes--40 percent
Peeko gravelly loam, 2 to 4 percent slopes--30 percent
Urmafot gravelly loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Durixerollic Camborthids, loamy-skeletal, mixed, mesic gravelly loam, 2 to 8 percent slopes--10 percent

Map Unit Setting

Landscape position: Fan piedmonts
Chiara--Landform: Fan remnants; geomorphic position: summit
Peeko--Landform: Fan remnants; geomorphic position: summit
Urmafot--Landform: Fan remnants; position on slope: upper
Inclusion 1--Landform: Inset fans

Major Component Description

Chiara Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Peeko Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Urmafot Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Chiara: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Peeko: Indian ricegrass, Thurber needlegrass, black sagebrush
Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Chiara: 025XY019NV
Peeko: 024XY030NV
Urmafot: 028BY006NV
Inclusion 1: 028BY010NV

279--Chiara-Parisa-Enko association

Composition

Major Components
Chiara silt loam, 2 to 8 percent slopes--40 percent
Parisa gravelly loam, 2 to 8 percent slopes--30 percent
Enko loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Aridic Durixerolls, loamy-skeletal, mixed, mesic gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Hunnton loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Chiara--Landform: Fan remnants
Parisa--Landform: Fan remnants
Enko--Landform: Inset fans
Inclusion 1--Landform: Fan remnants; position on slope: upper
Inclusion 2--Landform: Fan remnants

Major Component Description

Chiara Series
Elevation: 5,600 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Parisa Series
Elevation: 5,600 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Enko Series
Elevation: 5,600 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Chiara: Indian ricegrass, Wyoming big sagebrush, needleandthread
Parisa: Indian ricegrass, Wyoming big sagebrush, needleandthread
Enko: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Chiara: 028BY010NV

Parisa: 028BY010NV
Enko: 028BY010NV
Inclusion 1: 028BY007NV
Inclusion 2: 028BY010NV

280--Oupico-Enko association

Composition

Major Components

Oupico loam, 2 to 4 percent slopes--65 percent
Enko loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Chiara silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Durixerollic Camborthids, loamy-skeletal, mixed, mesic gravelly loam, 8 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Oupico--Landform: Fan remnants
Enko--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

Oupico Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Enko Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Oupico: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Oupico: 025XY019NV
Enko: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 025XY019NV

282--Shabliss-Pyrat-Okan association

Composition

Major Components

Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--40 percent
Pyrat gravelly sandy loam, 2 to 8 percent slopes--25 percent
Okan sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Palinor very gravelly sandy loam, 2 to 8 percent slopes--6 percent
Inclusion 2: Xerollic Camborthids, coarse-loamy, mixed, mesic silt loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Xerollic Durorthids, loamy, mixed, mesic, shallow very gravelly loam, 4 to 15 percent slopes--3 percent
Inclusion 4: Tulase silty clay loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Shabliss--Landform: Fan remnants; geomorphic position: summit
Pyrat--Landform: Inset fans
Okan--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope
Inclusion 4--Landform: Inset fans

Major Component Description

Shabliss Series

Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches

Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Pyrat Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Shabliss: 028BY010NV
Pyrat: 028BY010NV
Okan: 028BY010NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY080NV
Inclusion 4: 028BY045NV

310--Sonoma-Devilsgait association

Composition

Major Components
Sonoma silty clay loam, 0 to 2 percent slopes--40 percent
Devilsgait silt loam, 0 to 2 percent slopes--30 percent
Sonoma silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Sonoma silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Devilsgait silty clay, 0 to 2 percent slopes--4 percent
Inclusion 3: Cumulic Endoaquolls, fine-silty, mixed, frigid silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Sonoma--Landform: Flood plains
Devilsgait--Landform: Flood plains
Sonoma--Landform: Flood plains
Inclusion 1--Landform: Alluvial flats
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Flood plains

Major Component Description

Sonoma Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Devilsgait Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Sonoma Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Sonoma: Alkali cordgrass, alkali muhly, alkali sacaton
Devilsgait: Basin big sagebrush, basin wildrye, creeping wildrye, willow
Sonoma: Basin big sagebrush, basin wildrye, black greasewood
Inclusion 1: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass
Inclusion 2: Basin big sagebrush, basin wildrye, creeping wildrye, willow
Inclusion 3: Tufted hairgrass

Ecological Site

Sonoma: 024XY009NV
Devilsgait: 025XY001NV
Sonoma: 024XY006NV
Inclusion 1: 024XY007NV
Inclusion 2: 025XY001NV
Inclusion 3: 025XY005NV

311--Sonoma-Kelk association

Composition

Major Components
Sonoma silt loam, 0 to 2 percent slopes--55 percent
Kelk silt loam, 0 to 2 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Wendane silt loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Devilsgait silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Sonoma--Landform: Flood plains
Kelk--Landform: Fan skirts
Inclusion 1--Landform: Alluvial flats
Inclusion 2--Landform: Flood plains

Major Component Description

Sonoma Series
Elevation: 5,500 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Kelk Series
Elevation: 5,500 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Sonoma: Basin big sagebrush, basin wildrye
Kelk: Basin big sagebrush, basin wildrye, black greasewood
Inclusion 1: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass
Inclusion 2: Basin big sagebrush, basin wildrye

Ecological Site

Sonoma: 025XY003NV
Kelk: 024XY006NV
Inclusion 1: 024XY007NV
Inclusion 2: 025XY003NV

330--Kzin-Holborn association

Composition

Major Components
Kzin very gravelly loam, 8 to 30 percent slopes--35 percent
Holborn gravelly loam, 4 to 15 percent slopes--30 percent
Kzin very gravelly loam, 30 to 50 percent slopes--20 percent
Contrasting Inclusions
Inclusion 1: Urmafot gravelly silt loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Cumulic Endoaquolls, fine-loamy, mixed (calcareous), frigid silt loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow gravelly loam, 30 to 50 percent slopes--3 percent

Inclusion 4: Aridic Argixerolls, fine, montmorillonitic, mesic very gravelly loam, 8 to 30 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Kzin--Landform: Pediments; geomorphic position: backslope
Holborn--Landform: Pediments; geomorphic position: summit
Kzin--Landform: Pediments; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Pediments; geomorphic position: backslope
Inclusion 4--Landform: Pediments; geomorphic position: backslope; shape of slope: concave

Major Component Description

Kzin Series
Elevation: 5,300 to 6,800 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Holborn Series
Elevation: 5,300 to 6,800 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Kzin Series
Elevation: 5,300 to 6,800 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Dominant Present Vegetation

Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Holborn: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Basin big sagebrush, basin wildrye, rubber rabbitbrush
Inclusion 3: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Kzin: 028BY060NV
Holborn: 028BY006NV
Kzin: 028BY060NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY003NV
Inclusion 3: 024XY031NV
Inclusion 4: 028BY007NV

331--Kzin-Cobre-Jackpot association

Composition

Major Components
Kzin very gravelly loam, 15 to 50 percent slopes--45 percent
Cobre silt loam, 4 to 15 percent slopes--25 percent
Jackpot sandy loam, 4 to 15 percent slopes--15 percent
Contrasting Inclusions
Inclusion 1: Typic Torriorthents, coarse-loamy, mixed, nonacid, mesic sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Izar very gravelly loam, 8 to 30 percent slopes--4 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Kzin--Landform: Pediments; geomorphic position: backslope
Cobre--Landform: Pediments; geomorphic position: backslope; position on slope: lower
Jackpot--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Pediments; geomorphic

position: backslope
Inclusion 3--Landform: Pediments; geomorphic position: backslope
Inclusion 4--Landform: Pediments; geomorphic position: summit

Major Component Description

Kzin Series
Elevation: 5,900 to 6,400 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Cobre Series
Elevation: 5,900 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Jackpot Series
Elevation: 5,900 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from tuffaceous rocks

Dominant Present Vegetation

Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Cobre: Indian ricegrass, Wyoming big sagebrush, needleandthread
Jackpot: Indian ricegrass, big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 2: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: None

Ecological Site

Kzin: 028BY060NV
Cobre: 028BY010NV
Jackpot: 024XY017NV
Inclusion 1: 028BY078NV
Inclusion 2: 025XY060NV
Inclusion 3: 028BY011NV
Inclusion 4: None

333--Kzin-Holborn-Onkeyo association

Composition

Major Components
Kzin very gravelly loam, 8 to 30 percent slopes--40 percent
Holborn gravelly loam, 4 to 15 percent slopes--30 percent
Onkeyo very gravelly silt loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Urmafot gravelly silt loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow gravelly loam, 30 to 50 percent slopes--5 percent
Inclusion 3: Aridic Argixerolls, fine, montmorillonitic, mesic very gravelly loam, 8 to 30 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains and foothills
Kzin--Landform: Hills; geomorphic position: backslope
Holborn--Landform: Hills; geomorphic position: backslope
Onkeyo--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Hills; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Kzin Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Holborn Series

Elevation: 5,700 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Onkeyo Series
Elevation: 6,000 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Holborn: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Onkeyo: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Thurber needlegrass, big sagebrush

Ecological Site

Kzin: 028BY060NV
Holborn: 028BY006NV
Onkeyo: 028BY079NV
Inclusion 1: 028BY006NV
Inclusion 2: 024XY031NV
Inclusion 3: 028BY007NV

340--Shuttle-Hardhat association

Composition

Major Components
Shuttle silt loam, 2 to 8 percent slopes--40 percent
Hardhat silt loam, 2 to 8 percent slopes--30 percent
Shuttle silt loam, 2 to 8 percent slopes--15 percent
Contrasting Inclusions
Inclusion 1: Toano silt loam, 2 to 8 percent slopes--10 percent
Inclusion 2: Loray very gravelly sandy loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Shuttle--Landform: Fan skirts; position on slope: upper
Hardhat--Landform: Fan skirts; position on slope: lower
Shuttle--Landform: Fan skirts; position on slope: lower
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Fan skirts

Major Component Description

Shuttle Series
Elevation: 4,900 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Hardhat Series
Elevation: 4,900 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 49 degrees
Frost-free season: About 115 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Shuttle Series
Elevation: 4,900 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Shuttle: Indian ricegrass, winterfat
Hardhat: Bottlebrush squirreltail, shadscale
Shuttle: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, winterfat

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Shuttle: 028BY084NV
Hardhat: 028BY073NV
Shuttle: 028BY084NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY017NV

350--Jericho-Jericho, silt loam association

Composition

Major Components

Jericho gravelly sandy loam, 2 to 8 percent slopes--50 percent
Jericho silt loam, 2 to 4 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Jericho very cobbly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Typic Paleorthids, loamy, mixed, mesic, shallow gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Xeric Torriorthents very gravelly loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Jericho--Landform: Fan remnants
Jericho--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Jericho Series

Elevation: 5,100 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Jericho Series

Elevation: 5,100 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jericho: Indian ricegrass, Wyoming big sagebrush, needleandthread
Jericho: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, galleta, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Jericho: 028BY010NV
Jericho: 028BY052NV
Inclusion 1: 028BY010NV
Inclusion 2: 028AY002NV
Inclusion 3: 028BY010NV

351--Shabliss-Okan-Eastwell association

Composition

Major Components

Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--40 percent
Okan sandy loam, 2 to 8 percent slopes--35 percent
Eastwell gravelly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Idway sandy loam, 2 to 4 percent slopes--4 percent
Inclusion 2: Loray very gravelly sandy loam, 0 to 4 percent slopes--3 percent
Inclusion 3: Wintermute gravelly sandy loam, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Shabliss--Landform: Fan remnants
Okan--Landform: Inset fans
Eastwell--Landform: Fan remnants
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Fan remnants; position on slope: lower

Major Component Description

Shabliss Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Okan Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Eastwell Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Eastwell: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Shabliss: 028BY010NV
Okan: 028BY052NV
Eastwell: 028BY011NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY017NV
Inclusion 3: 028BY075NV

355--Shabliss-Okan association

Composition

Major Components
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--50 percent
Okan sandy loam, 2 to 4 percent slopes--20 percent
Okan sandy loam, moist, 2 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Linoyer silt loam, 2 to 8 percent slopes--8 percent
Inclusion 2: Palinor very gravelly sandy loam, 2 to 8 percent slopes--6 percent
Inclusion 3: Loray very gravelly sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Shabliss--Landform: Fan remnants
Okan--Landform: Inset fans
Okan--Landform: Inset fans
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Shabliss Series
Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Okan Series
Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Okan Series
Elevation: 5,700 to 6,700 feet

Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Shabliss: 028BY010NV
Okan: 028BY052NV
Okan: 028BY010NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY017NV

370--Toano-Tulase association

Composition

Major Components

Toano silt loam, 0 to 2 percent slopes--55 percent
Tulase very fine sandy loam, 0 to 2 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents very gravelly loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Linoyer very fine sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic silt loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Toano--Landform: Inset fans
Tulase--Landform: Inset fans
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans

Major Component Description

Toano Series

Elevation: 5,600 to 5,900 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 115 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Tulase Series

Elevation: 5,600 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Toano: Indian ricegrass, sickle saltbush, western wheatgrass
Tulase: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Bottlebrush squirreltail, shadscale

Ecological Site

Toano: 028BY047NV
Tulase: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY073NV

371--Linoyer-Okan association

Composition

Major Components

Linoyer silt loam, 2 to 4 percent slopes--50 percent
Okan sandy loam, 2 to 4 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Calciorthids, loamy-skeletal, mixed, mesic gravelly fine sandy loam, 2 to 4 percent slopes--7 percent
Inclusion 2: Shabliss gravelly fine sandy loam, 2 to 45 percent slopes--6 percent
Inclusion 3: Automal gravelly fine sandy loam, 2 to

8 percent slopes--1 percent
Inclusion 4: Okan gravelly sandy loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Linoyer--Landform: Fan skirts
Okan--Landform: Fan skirts
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Inset fans

Major Component Description

Linoyer Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Linoyer: Indian ricegrass, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Linoyer: 028BY013NV
Okan: 028BY010NV
Inclusion 1: 028BY084NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY011NV
Inclusion 4: 028BY052NV

373--Timpie-Piltdown-Linoyer association

Composition

Major Components
Timpie silt loam, 0 to 2 percent slopes--35 percent
Piltdown fine sandy loam, 2 to 8 percent slopes--30 percent
Linoyer silt loam, 0 to 2 percent slopes--20 percent
Contrasting Inclusions
Inclusion 1: Typic Torripsamments, mixed, mesic fine sand, 8 to 15 percent slopes--8 percent
Inclusion 2: Xeric Torriorthents fine sandy loam, 2 to 4 percent slopes--4 percent
Inclusion 3: Katelana silt loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silt loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Timpie--Landform: Alluvial flats
Piltdown--Landform: Sand sheets
Linoyer--Landform: Alluvial flats
Inclusion 1--Landform: Dunes
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Timpie Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 49 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Piltdown Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Linoyer Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Timpie: Indian ricegrass, bud sagebrush, shadscale, winterfat
Piltdown: Indian ricegrass, fourwing saltbush, winterfat
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Bottlebrush squirreltail, shadscale
Inclusion 4: Indian ricegrass, needleandthread, pigmy sagebrush

Ecological Site

Timpie: 028BY075NV
Piltdown: 029XY012NV
Linoyer: 028BY013NV
Inclusion 1: 028BY097NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY073NV
Inclusion 4: 028BY040NV

374--Heist-Okan-Zerk association

Composition

Major Components

Heist fine sandy loam, 2 to 4 percent slopes--55 percent
Okan sandy loam, 2 to 4 percent slopes--15 percent
Zerk gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Wintermute gravelly silt loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Xerollic Calciorthids, sandy-skeletal, mixed, mesic very gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Katelana silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Heist--Landform: Fan remnants
Okan--Landform: Inset fans
Zerk--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Lagoons; position on slope: lower

Major Component Description

Heist Series

Elevation: 6,100 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series

Elevation: 6,100 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Zerk Series

Elevation: 6,100 to 6,300 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Heist: Indian ricegrass, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Bottlebrush squirreltail, shadscale

Ecological Site

Heist: 028BY084NV
Okan: 028BY010NV
Zerk: 028BY075NV
Inclusion 1: 028BY075NV

Inclusion 2: 028BY010NV
Inclusion 3: 028BY073NV

375--Toano-Heist association

Composition

Major Components

Toano silt loam, 0 to 2 percent slopes--60 percent
Heist fine sandy loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Linoyer silt loam, 0 to 4 percent slopes--9 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--3 percent
Inclusion 3: Okan gravelly sandy loam, 2 to 4 percent slopes--2 percent
Inclusion 4: Sheffit silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Toano--Landform: Fan skirts
Heist--Landform: Fan skirts; position on slope: upper
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Lake plains

Major Component Description

Toano Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 115 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Heist Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Toano: Indian ricegrass, sickle saltbush, western wheatgrass
Heist: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Bottlebrush squirreltail, shadscale
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Toano: 028BY047NV
Heist: 028BY084NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY073NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY028NV

380--Cobre-Izar-Jackpot association

Composition

Major Components

Cobre silt loam, 4 to 15 percent slopes--40 percent
Izar very gravelly loam, 4 to 15 percent slopes--30 percent
Jackpot sandy loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Tulase very fine sandy loam, 0 to 2 percent slopes--10 percent
Inclusion 2: Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--3 percent
Inclusion 3: Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills
Cobre--Landform: Hills; geomorphic position: backslope; shape of slope: concave
Izar--Landform: Hills; geomorphic position: backslope; shape of slope: convex
Jackpot--Landform: Hills; geomorphic position: backslope; shape of slope: convex
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Pediments; geomorphic position: backslope

Inclusion 3--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Major Component Description

Cobre Series
Elevation: 5,800 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Izar Series
Elevation: 5,800 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Jackpot Series
Elevation: 5,800 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from tuffaceous rocks

Dominant Present Vegetation

Cobre: Indian ricegrass, Wyoming big sagebrush, needleandthread
Izar: Indian ricegrass, Thurber needlegrass, black sagebrush
Jackpot: Indian ricegrass, big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, black sagebrush

Ecological Site

Cobre: 028BY010NV
Izar: 024XY030NV
Jackpot: 024XY017NV
Inclusion 1: 028BY010NV
Inclusion 2: 025XY060NV
Inclusion 3: 025XY025NV

381--Cobre-Hundraw-Jackpot association

Composition

Major Components
Cobre silt loam, 4 to 15 percent slopes--50 percent
Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--20 percent
Jackpot sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Izar very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Xeric Torriorthents gravelly sandy loam, 30 to 50 percent slopes--5 percent
Inclusion 3: Xerollic Haplargids, loamy, mixed, mesic, shallow gravelly loam, 4 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Cobre--Landform: Hills; geomorphic position: backslope; position on slope: lower
Hundraw--Landform: Pediments; geomorphic position: backslope
Jackpot--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Hills; geomorphic position: backslope
Inclusion 3--Landform: Hills; geomorphic position: backslope

Major Component Description

Cobre Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Hundraw Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Jackpot Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from tuffaceous rocks

Dominant Present Vegetation

Cobre: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Hundraw: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass
Jackpot: Indian ricegrass, big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, black sagebrush
Inclusion 3: Thurber needlegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Cobre: 028BY010NV
Hundraw: 025XY060NV
Jackpot: 024XY060NV
Inclusion 1: 028BY011NV
Inclusion 2: 025XY025NV
Inclusion 3: 024XY031NV

382--Cobre-Enko association

Composition

Major Components

Cobre silt loam, 4 to 15 percent slopes--60 percent
Enko fine sandy loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, loamy-skeletal, mixed, mesic, shallow cobbly silt loam, 15 to 30 percent slopes--6 percent
Inclusion 2: Hundraw very cobbly silt loam, 8 to 30 percent slopes--3 percent
Inclusion 3: Palinor very gravelly loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Kzin very gravelly loam, 4 to 15 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Cobre--Landform: Pediments; geomorphic position: backslope
Enko--Landform: Inset fans
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: summit
Inclusion 4--Landform: Pediments; geomorphic position: backslope; position on slope: upper

Major Component Description

Cobre Series
Elevation: 5,600 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Enko Series
Elevation: 5,600 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Cobre: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 2: Thurber needlegrass, Utah juniper, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Cobre: 025XY019NV
Enko: 025XY019NV
Inclusion 1: 025XY019NV
Inclusion 2: 025XY060NV
Inclusion 3: 028BY011NV
Inclusion 4: 028BY060NV

390--Hardol-Muiral-Rubble land association

Composition

Major Components

Hardol very gravelly silt loam, 30 to 75 percent slopes--40 percent
Muiral stony loam, 50 to 75 percent slopes--25 percent
Rubble land fragmental material, 50 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--8 percent
Inclusion 2: Adobe extremely gravelly loam, 15 to 50 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains
Hardol--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Muiral--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Rubble land--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Major Component Description

Hardol Series

Elevation: 7,000 to 10,700 feet
Precipitation: About 20 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Muiral Series

Elevation: 7,000 to 10,700 feet
Precipitation: About 18 inches
Air temperature: About 38 degrees
Frost-free season: About 50 days
Surface rock fragments: 1 percent stones and boulders; 5 percent cobbles; 5 percent gravel
Surface layer texture: Stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Rubble land Miscellaneous Area

Elevation: 7,000 to 10,700 feet
Surface layer texture: Fragmental material
Drainage class: Excessively drained

Dominant Present Vegetation

Hardol: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Muiral: Limber pine, mountain big sagebrush, white fir
Rubble land: None
Inclusion 1: None
Inclusion 2: Black sagebrush, bluebunch wheatgrass

Ecological Site

Hardol: 028BY042NV
Muiral: 028BY063NV
Rubble land: None
Inclusion 1: None
Inclusion 2: 028BY027NV

392--Hardol-Muiral-Onkeyo association

Composition

Major Components

Hardol very gravelly silt loam, 30 to 75 percent slopes--40 percent
Muiral stony loam, 50 to 75 percent slopes--25 percent
Onkeyo very gravelly silt loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--8 percent
Inclusion 2: Adobe extremely gravelly loam, 15 to 50 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains
Hardol--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Muiral--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Onkeyo--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position:

summit; shape of slope: convex

Major Component Description

Hardol Series
Elevation: 7,000 to 9,500 feet
Precipitation: About 20 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Muiral Series
Elevation: 7,000 to 10,700 feet
Precipitation: About 18 inches
Air temperature: About 38 degrees
Frost-free season: About 50 days
Surface rock fragments: 1 percent stones and boulders; 5 percent cobbles; 5 percent gravel
Surface layer texture: Stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Onkeyo Series
Elevation: 7,000 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Hardol: Bluebunch wheatgrass, mountain big sagebrush
Muiral: Limber pine, mountain big sagebrush, white fir
Onkeyo: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: None
Inclusion 2: Black sagebrush, bluebunch wheatgrass

Ecological Site

Hardol: 028BY042NV
Muiral: 028BY063NV
Onkeyo: 028BY079NV
Inclusion 1: None
Inclusion 2: 028BY027NV

400--Cleavage-Sumine association

Composition

Major Components
Cleavage very gravelly loam, 15 to 30 percent slopes--35 percent
Cleavage very gravelly loam, 15 to 50 percent slopes--30 percent
Sumine very gravelly loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Aridic Haploxerolls, loamy-skeletal, mixed, frigid gravelly loam, 15 to 50 percent slopes--6 percent
Inclusion 2: Lithic Argixerolls, loamy-skeletal, mixed, frigid extremely gravelly silt loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Pachic Argixerolls, fine-loamy, mixed, mesic gravelly loam, 8 to 30 percent slopes--3 percent
Inclusion 4: Pachic Cryoborolls, loamy-skeletal, mixed gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Cleavage--Landform: Mountains; geomorphic position: backslope; shape of slope: plane
Cleavage--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Sumine--Landform: Mountains; geomorphic position: backslope; aspect: south
Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: plane; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: north
Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Major Component Description

Cleavage Series
Elevation: 7,000 to 7,500 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 5 percent cobbles; 70 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Cleavage Series
Elevation: 7,000 to 7,500 feet

Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 5 percent cobbles; 70 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Sumine Series
Elevation: 7,000 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 10 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Dominant Present Vegetation

Cleavage: Idaho fescue, bluebunch wheatgrass, low sagebrush
Cleavage: Idaho fescue, black sagebrush, low sagebrush
Sumine: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Idaho fescue, Utah serviceberry, bluebunch wheatgrass
Inclusion 4: Idaho fescue, mountain big sagebrush, mountain brome, snowberry

Ecological Site

Cleavage: 025XY017NV
Cleavage: 025XY024NV
Sumine: 025XY009NV
Inclusion 1: 025XY012NV
Inclusion 2: 025XY057NV
Inclusion 3: 025XY046NV
Inclusion 4: 025XY004NV

410--Jericho very gravelly loam, 2 to 8 percent slopes

Composition

Major Components
Jericho very gravelly loam, 2 to 8 percent slopes--85 percent
Contrasting Inclusions
Inclusion 1: Xerollic Durorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Durixerollic Calciorthids, coarse-loamy, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Typic Durorthids, loamy, mixed, mesic, shallow gravelly clay loam, 4 to 15 percent slopes--2 percent
Inclusion 4: Heist fine sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Jericho--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope
Inclusion 4--Landform: Inset fans

Major Component Description

Jericho Series
Elevation: 5,000 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, Utah juniper, black sagebrush, galleta
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage

Inclusion 3: Indian ricegrass, Utah juniper, pigmy sagebrush
Inclusion 4: Indian ricegrass, galleta, winterfat

Ecological Site

Jericho: 028AY013NV
Inclusion 1: 028AY027NV
Inclusion 2: 028AY028NV
Inclusion 3: 028AY021NV
Inclusion 4: 028AY002NV

411--Jericho-Armespan association

Composition

Major Components

Jericho very gravelly loam, 8 to 30 percent slopes--60 percent
Armespan very gravelly sandy loam, 4 to 15 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Typic Calciorthids, loamy-skeletal, mixed, mesic very gravelly loam, 2 to 8 percent slopes--7 percent
Inclusion 2: Xerollic Durorthids, loamy-skeletal, carbonatic, mesic, shallow gravelly sandy loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Heist fine sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Xeric Torriorthents loamy coarse sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Jericho--Landform: Fan remnants
Armespan--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: summit
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; aspect: north
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Inset fans

Major Component Description

Jericho Series

Elevation: 5,200 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Armespan Series

Elevation: 5,200 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, galleta, shadscale
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Indian ricegrass, Nevada ephedra, big sagebrush, rubber rabbitbrush

Ecological Site

Jericho: 028AY004NV
Armespan: 028AY004NV
Inclusion 1: 028AY018NV
Inclusion 2: 028AY034NV
Inclusion 3: 028AY028NV
Inclusion 4: 028AY038NV

420--Palinor association

Composition

Major Components

Palinor very gravelly loam, 4 to 15 percent slopes--50 percent
Palinor very gravelly loam, 15 to 30 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Okan gravelly sandy loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Okan gravelly loam, 2 to 4 percent slopes--2 percent
Inclusion 4: Heist gravelly silt loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Ballenas; geomorphic position: summit
Palinor--Landform: Ballenas; geomorphic position: backslope
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Inset fans

Major Component Description

Palinor Series
Elevation: 5,800 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Palinor Series
Elevation: 5,800 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Palinor: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Palinor: 028BY011NV
Palinor: 028BY011NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY083NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY084NV

421--Palinor-Automal association

Composition

Major Components
Palinor very gravelly loam, 2 to 15 percent slopes--60 percent
Automal gravelly silt loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions
Inclusion 1: Pyrat gravelly sandy loam, 2 to 8 percent slopes--8 percent
Inclusion 2: Heist gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Okan sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; position on slope: upper
Automal--Landform: Fan remnants; position on slope: lower
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans

Major Component Description

Palinor Series
Elevation: 5,700 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series
Elevation: 5,700 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Palinor: 028BY011NV
Automal: 028BY011NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY084NV
Inclusion 3: 028BY052NV

422--Palinor-Zimbob-Okan association

Composition

Major Components

Palinor very gravelly loam, 2 to 8 percent slopes--35 percent
Zimbob very gravelly loam, 8 to 30 percent slopes--30 percent
Okan sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Automal gravelly silt loam, 2 to 8 percent slopes--10 percent
Inclusion 2: Zimbob very gravelly silt loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Palinor--Landform: Fan remnants
Zimbob--Landform: Hills
Okan--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Hills
Inclusion 3--Landform: Hills

Major Component Description

Palinor Series

Elevation: 5,800 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Zimbob Series

Elevation: 5,800 to 6,700 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Okan Series

Elevation: 5,800 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Zimbob: Indian ricegrass, black sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 3: None

Ecological Site

Palinor: 028BY011NV
Zimbob: 028BY016NV
Okan: 028BY010NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY059NV
Inclusion 3: None

424--Palinor-Hundraw-Okan association

Composition

Major Components

Palinor very gravelly loam, 2 to 8 percent slopes--40 percent

Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--25 percent
Okan sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Izar extremely gravelly loam, 15 to 50 percent slopes--4 percent
Inclusion 2: Xeric Torriorthents gravelly loam, 15 to 50 percent slopes--4 percent
Inclusion 3: Automal very gravelly sandy loam, 4 to 15 percent slopes--4 percent
Inclusion 4: Xeric Torriorthents clay, 15 to 50 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; geomorphic position: summit
Hundraw--Landform: Fan remnants; geomorphic position: backslope
Okan--Landform: Inset fans
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 3--Landform: Fan remnants; geomorphic position: summit
Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Palinor Series

Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Hundraw Series

Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Okan Series

Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Hundraw: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Palinor: 028BY011NV
Hundraw: 028BY083NV
Okan: 028BY052NV
Inclusion 1: 028BY016NV
Inclusion 2: 028BY060NV
Inclusion 3: 028BY011NV
Inclusion 4: 028BY060NV

426--Palinor-Automal-Wintermute association

Composition

Major Components

Palinor very gravelly loam, 8 to 15 percent slopes--35 percent
Automal gravelly silt loam, 4 to 8 percent slopes--30 percent
Wintermute gravelly silt loam, 4 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Pharo very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Urmafot very gravelly loam, 8 to 15 percent

slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants
Automal--Landform: Fan remnants
Wintermute--Landform: Fan remnants
Inclusion 1--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Pediments; geomorphic position: backslope; position on slope: upper

Major Component Description

Palinor Series
Elevation: 5,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series
Elevation: 5,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Wintermute Series
Elevation: 5,200 to 6,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Palinor: 028BY011NV
Automal: 028BY011NV
Wintermute: 028BY075NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY060NV

429--Palinor-Automal-Palinor, eroded association

Composition

Major Components
Palinor very gravelly loam, 2 to 8 percent slopes--50 percent
Automal gravelly silt loam, 4 to 15 percent slopes--20 percent
Palinor very gravelly loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Urmafot very gravelly loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Pyrat gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Wintermute gravelly silt loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Tulase silt loam, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; geomorphic position: summit
Automal--Landform: Fan remnants; geomorphic position: backslope
Palinor--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; position on slope: lower
Inclusion 4--Landform: Inset fans

Major Component Description

Palinor Series
Elevation: 5,800 to 6,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days

Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series
Elevation: 5,800 to 6,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Palinor Series
Elevation: 5,800 to 6,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Palinor: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Inclusion 1: Black sagebrush
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Palinor: 028BY011NV
Automal: 028BY011NV
Palinor: 028BY083NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY075NV
Inclusion 4: 028BY045NV

430--Graley-Pioche-Cropper association

Composition

Major Components

Graley very cobbly loam, 8 to 30 percent slopes--40 percent
Pioche very gravelly sandy loam, 15 to 50 percent slopes--30 percent
Cropper very cobbly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Chen very gravelly loam, 4 to 15 percent slopes--7 percent
Inclusion 2: Rock outcrop--3 percent
Inclusion 3: Simon gravelly loam, 8 to 30 percent slopes--3 percent
Inclusion 4: Lithic Argixerolls, clayey-skeletal, montmorillonitic, frigid very gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Graley--Landform: Mountains; geomorphic position: backslope
Pioche--Landform: Mountains; geomorphic position: backslope; aspect: south
Cropper--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Major Component Description

Graley Series
Elevation: 6,500 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 40 percent cobbles; 15 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Pioche Series
Elevation: 6,500 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Cropper Series
Elevation: 6,500 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 15 percent cobbles; 30 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Graley: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Pioche: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon
Cropper: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Inclusion 1: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 2: None
Inclusion 3: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush

Ecological Site

Graley: 028BY087NV
Pioche: 028BY062NV
Cropper: 028BY058NV
Inclusion 1: 028BY037NV
Inclusion 2: None
Inclusion 3: 028BY030NV
Inclusion 4: 028BY030NV

431--Graley-Chen-McIvey association

Composition

Major Components
Graley stony loam, 8 to 30 percent slopes--35 percent
Chen very gravelly loam, 8 to 30 percent slopes--30 percent
McIvey very cobbly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Hapgood very gravelly loam, 15 to 50 percent slopes--9 percent
Inclusion 2: Welch gravelly loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Pachic Cryoborolls, fine-loamy, mixed gravelly silt loam, 15 to 50 percent slopes--2 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Mountains
Graley--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Chen--Landform: Mountains; geomorphic position: summit; shape of slope: convex
McIvey--Landform: Mountains; shape of slope: concave
Inclusion 1--Landform: Mountains; shape of slope: concave
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Mountains; shape of slope: concave
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Graley Series
Elevation: 7,000 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 2 percent stones and boulders; 15 percent cobbles; 15 percent gravel
Surface layer texture: Stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Chen Series
Elevation: 7,000 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

McIvey Series
Elevation: 7,000 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Dominant Present Vegetation

Graley: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Chen: Idaho fescue, bluebunch wheatgrass, low sagebrush
McIvey: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 2: Tufted hairgrass
Inclusion 3: Mountain brome
Inclusion 4: None

Ecological Site

Graley: 025XY012NV
Chen: 025XY017NV
McIvey: 025XY012NV
Inclusion 1: 025XY004NV
Inclusion 2: 025XY005NV
Inclusion 3: 025XY065NV
Inclusion 4: None

440--Lomoine-Bijorja association

Composition

Major Components
Lomoine very gravelly sandy loam, 8 to 30 percent slopes--40 percent
Bijorja gravelly sandy loam, 8 to 30 percent slopes--30 percent
Lomoine very gravelly sandy loam, 30 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic gravelly coarse sandy loam, 8 to 30 percent slopes--4 percent
Inclusion 2: Lithic Argixerolls, loamy-skeletal, mixed, mesic gravelly sandy loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Rock outcrop--4 percent
Inclusion 4: Durixerollic Camborthids, loamy-skeletal, mixed, mesic very gravelly loamy coarse sand, 4 to 15 percent slopes--3 percent

Map Unit Setting

Landscape position: Hills
Lomoine--Landform: Hills; geomorphic position: backslope; position on slope: lower; shape of slope: convex
Bijorja--Landform: Hills; geomorphic position: backslope; shape of slope: concave
Lomoine--Landform: Hills; geomorphic position: backslope; position on slope: upper; shape of slope: convex
Inclusion 1--Landform: Hills; geomorphic position: summit
Inclusion 2--Landform: Hills; geomorphic position: summit; position on slope: upper
Inclusion 3--Landform: Hills; geomorphic position: summit
Inclusion 4--Landform: Alluvial fans; geomorphic position: backslope

Major Component Description

Lomoine Series
Elevation: 5,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Bijorja Series
Elevation: 5,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Lomoine Series
Elevation: 5,200 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Lomoine: Indian ricegrass, black sagebrush, needleandthread
Bijorja: Indian ricegrass, Wyoming big sagebrush, needleandthread
Lomoine: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: None
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Lomoine: 028AY013NV
Bijorja: 028BY010NV
Lomoine: 028AY004NV
Inclusion 1: 028BY060NV
Inclusion 2: 028BY006NV
Inclusion 3: None
Inclusion 4: 028BY052NV

460--Okan-Automal-Hundraw association

Composition

Major Components

Okan sandy loam, 2 to 8 percent slopes--40 percent
Automal gravelly silt loam, 4 to 15 percent slopes--25 percent
Hundraw gravelly fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Palinor very gravelly sandy loam, 2 to 8 percent slopes--10 percent
Inclusion 2: Okan sandy loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Okan--Landform: Inset fans
Automal--Landform: Fan remnants
Hundraw--Landform: Pediments
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Inset fans

Major Component Description

Okan Series

Elevation: 5,800 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Automal Series

Elevation: 5,800 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Hundraw Series

Elevation: 5,800 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Dominant Present Vegetation

Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Hundraw: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Okan: 028BY010NV
Automal: 028BY011NV
Hundraw: 028BY011NV
Inclusion 1: 028BY011NV

Inclusion 2: 028BY052NV

470--Rozara-Cucamungo-Rock outcrop association

Composition

Major Components

Rozara very gravelly loamy coarse sand, 15 to 50 percent slopes--40 percent
Cucamungo very gravelly sandy loam, 15 to 50 percent slopes--25 percent
Rock outcrop--20 percent

Contrasting Inclusions

Inclusion 1: Chen very gravelly sandy loam, 4 to 30 percent slopes--5 percent
Inclusion 2: Hapgood very gravelly sandy loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Typic Cryoborolls, loamy-skeletal, mixed gravelly loamy coarse sand, 15 to 50 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains
Rozara--Landform: Mountains; geomorphic position: backslope
Cucamungo--Landform: Mountains; geomorphic position: backslope
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 3--Landform: Mountains; shape of slope: concave

Major Component Description

Rozara Series

Elevation: 6,600 to 7,700 feet
Precipitation: About 16 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loamy coarse sand
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Cucamungo Series

Elevation: 6,600 to 7,700 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 30 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 6,600 to 7,700 feet

Dominant Present Vegetation

Rozara: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Cucamungo: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 2: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 3: Columbia needlegrass, curlleaf mountainmahogany, mountain brome

Ecological Site

Rozara: 025XY071NV
Cucamungo: 025XY061NV
Rock outcrop: None
Inclusion 1: 028BY037NV
Inclusion 2: 025XY004NV
Inclusion 3: 025XY030NV

471--Cucamungo-Hendap-Rock outcrop association

Composition

Major Components

Cucamungo very gravelly sandy loam, 15 to 50 percent slopes--50 percent
Hendap very stony coarse sandy loam, 15 to 50 percent slopes--20 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Aridic Argixerolls, coarse-loamy, mixed, mesic very gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Aridic Argixerolls, loamy-skeletal, mixed, frigid very gravelly coarse sandy loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Lomoine gravelly loamy coarse sand, 15 to 50 percent slopes--3 percent
Inclusion 4: Xerollic Durorthids, coarse-loamy, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Cucamungo--Landform: Mountains; geomorphic position: backslope
Hendap--Landform: Mountains; geomorphic position: summit
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 4--Landform: Fan remnants; position on slope: lower

Major Component Description

Cucamungo Series
Elevation: 6,500 to 8,300 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 30 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Hendap Series
Elevation: 6,500 to 8,300 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 30 percent gravel
Surface layer texture: Very stony coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area
Elevation: 6,500 to 8,300 feet

Dominant Present Vegetation

Cucamungo: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Hendap: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needlegrass
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Cucamungo: 028BY058NV
Hendap: 028BY060NV
Rock outcrop: None
Inclusion 1: 028BY007NV
Inclusion 2: 028BY015NV
Inclusion 3: 028BY008NV
Inclusion 4: 028BY052NV

480--Shabliss-Palinor association

Composition

Major Components
Shabliss gravelly fine sandy loam, 4 to 8 percent slopes--55 percent
Palinor very gravelly loam, 4 to 15 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Haploxerollic Durorthids, coarse-loamy, mixed, mesic very gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Linoyer silt loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Okan sandy loam, 2 to 8 percent slopes--1 percent
Inclusion 4: Pyrat extremely gravelly sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Shabliss--Landform: Fan remnants
Palinor--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans

Inclusion 4--Landform: Inset fans

Major Component Description

Shabliss Series
Elevation: 5,600 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Palinor Series
Elevation: 5,600 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Palinor: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Shabliss: 028BY080NV
Palinor: 028BY011NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY052NV

485--Shabliss-Parisa-Hunnton association

Composition

Major Components
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--45 percent
Parisa gravelly loam, 2 to 8 percent slopes--30 percent
Hunnton silt loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Durixerollic Haplargids, fine-loamy, mixed, mesic loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Aridic Duric Haploxerolls, fine-loamy, mixed, mesic silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Shabliss--Landform: Fan remnants
Parisa--Landform: Fan remnants
Hunnton--Landform: Fan remnants; position on slope: lower
Inclusion 1--Landform: Fan remnants; position on slope: lower
Inclusion 2--Landform: Inset fans; position on slope: lower

Major Component Description

Shabliss Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Parisa Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Hunnton Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread

Parisa: Indian ricegrass, Wyoming big sagebrush, needleandthread
Hunnton: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Shabliss: 028BY010NV
Parisa: 028BY010NV
Hunnton: 028BY010NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY045NV

490--Wintermute-Automal association

Composition

Major Components

Wintermute gravelly silt loam, 2 to 4 percent slopes--75 percent
Automal gravelly silt loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Kunzler silt loam, 2 to 4 percent slopes--3 percent
Inclusion 3: Jericho gravelly sandy loam, 2 to 8 percent slopes--1 percent
Inclusion 4: Typic Calciorthids, loamy-skeletal, mixed, mesic very gravelly loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants
Automal--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Fan remnants; position on slope: lower

Major Component Description

Wintermute Series

Elevation: 5,700 to 6,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series

Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Winterfat

Ecological Site

Wintermute: 028BY075NV
Automal: 028BY011NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY028NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY084NV

492--Wintermute-Peeko-Hundraw association

Composition

Major Components

Wintermute gravelly silt loam, 4 to 15 percent slopes--40 percent
Peeko gravelly loam, 2 to 8 percent slopes--30 percent
Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Hundraw very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Okan gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Pyrat gravelly sandy loam, 4 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants
Peeko--Landform: Fan remnants; geomorphic position: summit
Hundraw--Landform: Pediments; geomorphic position: backslope
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

Wintermute Series
Elevation: 6,000 to 6,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Peeko Series
Elevation: 6,000 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Hundraw Series
Elevation: 6,000 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Peeko: Indian ricegrass, black sagebrush, needleandthread
Hundraw: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Utah juniper, Utah juniper, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Wintermute: 028BY075NV
Peeko: 028BY011NV
Hundraw: 028BY016NV
Inclusion 1: 028BY083NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY010NV

494--Wintermute-Pyrat-Automal association

Composition

Major Components
Wintermute gravelly silt loam, 2 to 4 percent slopes--45 percent
Pyrat gravelly sandy loam, 2 to 4 percent slopes--25 percent
Automal gravelly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Okan gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Palinor very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Automal gravelly loam, 8 to 30 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants
Pyrat--Landform: Fan remnants
Automal--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

Wintermute Series
Elevation: 5,800 to 6,300 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days

Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Pyrat Series
Elevation: 5,800 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series
Elevation: 5,800 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Wintermute: 028BY075NV
Pyrat: 028BY010NV
Automal: 028BY011NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY016NV
Inclusion 3: 028BY011NV

496--Sodhouse-Linoyer association

Composition

Major Components
Sodhouse gravelly loam, 2 to 8 percent slopes--40 percent
Sodhouse gravelly loam, dry, 2 to 8 percent slopes--30 percent
Linoyer gravelly fine sandy loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Okan gravelly sandy loam, 0 to 2 percent slopes--9 percent
Inclusion 2: Palinor very gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Pyrat gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Sodhouse--Landform: Fan remnants
Sodhouse--Landform: Fan remnants
Linoyer--Landform: Inset fans
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Sodhouse Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Sodhouse Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Linoyer Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Sodhouse: Indian ricegrass, winterfat
Sodhouse: Indian ricegrass, bud sagebrush, shadscale, winterfat
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Sodhouse: 028BY084NV
Sodhouse: 028AY075NV
Linoyer: 028BY084NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY010NV

497--Sodhouse-Palinor association

Composition

Major Components
Sodhouse gravelly loam, 2 to 8 percent slopes--40 percent
Sodhouse gravelly loam, 2 to 8 percent slopes--25 percent
Palinor gravelly loam, 2 to 8 percent slopes--20 percent
Contrasting Inclusions
Inclusion 1: Okan gravelly loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Linoyer silt loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Palinor very gravelly loam, 8 to 30 percent slopes--3 percent
Inclusion 4: Tulase silt loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Sodhouse--Landform: Fan remnants
Sodhouse--Landform: Fan remnants
Palinor--Landform: Fan remnants; position on slope: lower
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope
Inclusion 4--Landform: Inset fans

Major Component Description

Sodhouse Series
Elevation: 5,700 to 5,900 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Sodhouse Series
Elevation: 5,700 to 5,900 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Palinor Series
Elevation: 5,700 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Sodhouse: Indian ricegrass, winterfat
Sodhouse: Indian ricegrass, bud sagebrush, shadscale, winterfat
Palinor: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, winterfat

Inclusion 3: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Sodhouse: 028BY084NV
Sodhouse: 028AY075NV
Palinor: 028BY011NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY083NV
Inclusion 4: 028BY045NV

501--Pharo-Izar-Okan association

Composition

Major Components

Pharo gravelly loam, 4 to 15 percent slopes--35 percent
Izar very gravelly loam, 15 to 50 percent slopes--25 percent
Okan sandy loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents very gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Xeric Torriorthents gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Eastwell very gravelly sandy loam, 4 to 15 percent slopes--2 percent
Inclusion 4: Izar very gravelly loam, 4 to 15 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pharo--Landform: Fan remnants
Izar--Landform: Pediments; geomorphic position: backslope
Okan--Landform: Inset fans
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Pharo Series

Elevation: 6,300 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Izar Series

Elevation: 6,300 to 7,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Okan Series

Elevation: 6,300 to 7,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Izar: Indian ricegrass, black sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Pharo: 028BY006NV
Izar: 028BY016NV
Okan: 028BY052NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY060NV
Inclusion 3: 028BY011NV

Inclusion 4: 028BY011NV

503--Automal-Okan-Wintermute association

Composition

Major Components

Automal gravelly silt loam, 4 to 8 percent slopes--35 percent
Okan sandy loam, 2 to 8 percent slopes--25 percent
Wintermute gravelly silt loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Linoyer silt loam, 2 to 4 percent slopes--10 percent
Inclusion 2: Palinor very gravelly loam, 4 to 15 percent slopes--3 percent
Inclusion 3: Zimbob very gravelly loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Automal--Landform: Fan remnants; position on slope: upper
Okan--Landform: Inset fans
Wintermute--Landform: Fan remnants; position on slope: lower
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants; position on slope: upper
Inclusion 3--Landform: Hills

Major Component Description

Automal Series

Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Okan Series

Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Wintermute Series

Elevation: 5,700 to 6,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Automal: Indian ricegrass, black sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Automal: 028BY011NV
Okan: 028BY010NV
Wintermute: 028BY075NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY011NV

504--Automal-Wintermute association

Composition

Major Components

Automal gravelly silt loam, 2 to 8 percent slopes--65 percent
Wintermute gravelly silt loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Heist gravelly sandy loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Urmafot very gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Okan very gravelly loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Automal--Landform: Fan remnants; position on slope: upper
Wintermute--Landform: Fan remnants; position on

slope: lower
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Automal Series
Elevation: 5,900 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Wintermute Series
Elevation: 5,900 to 7,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Automal: Indian ricegrass, black sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Automal: 028BY011NV
Wintermute: 028BY075NV
Inclusion 1: 028BY084NV
Inclusion 2: 028BY006NV
Inclusion 3: 028BY052NV

510--Adobe-Haunchee-Hardzem association

Composition

Major Components
Adobe very gravelly silt loam, 30 to 75 percent slopes--45 percent
Hardzem channery loam, 30 to 75 percent slopes--20 percent
Haunchee very gravelly loam, 30 to 75 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Wardbay very gravelly loam, 30 to 75 percent slopes--6 percent
Inclusion 2: Hyzen extremely stony loam, 15 to 50 percent slopes--4 percent
Inclusion 3: Muiral gravelly loam, 30 to 75 percent slopes--3 percent
Inclusion 4: Halacan very gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Adobe--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Hardzem--Landform: Mountains; geomorphic position: backslope; aspect: north
Haunchee--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: backslope
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Adobe Series
Elevation: 7,500 to 9,800 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface rock fragments: 25 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Hardzem Series
Elevation: 7,500 to 9,800 feet
Precipitation: About 25 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 25 percent cobbles; 45 percent gravel
Surface layer texture: Channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Haunchee Series
Elevation: 7,500 to 9,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Adobe: Black sagebrush, bluebunch wheatgrass
Hardzem: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir
Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 1: Bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Columbia needlegrass, mountain brome, mountain gooseberry
Inclusion 4: Black sagebrush, bluebunch wheatgrass

Ecological Site

Adobe: 028BY027NV
Hardzem: 028BY063NV
Haunchee: 028BY043NV
Inclusion 1: 028BY070NV
Inclusion 2: 028BY060NV
Inclusion 3: 028BY072NV
Inclusion 4: 028BY048NV

511--Adobe-Wardbay-Hardol association

Composition

Major Components
Adobe very gravelly silt loam, 15 to 50 percent slopes--40 percent
Wardbay very gravelly loam, 15 to 50 percent slopes--30 percent
Hardol very gravelly silt loam, 30 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Rock outcrop--10 percent
Inclusion 2: Hyzen very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 3: Haunchee gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Adobe--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Wardbay--Landform: Mountains; geomorphic position: backslope
Hardol--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 3--Landform: Mountains; geomorphic position: backslope

Major Component Description

Adobe Series
Elevation: 7,500 to 9,500 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface rock fragments: 25 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Wardbay Series
Elevation: 7,500 to 9,500 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Hardol Series
Elevation: 7,500 to 9,500 feet
Precipitation: About 20 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Adobe: Black sagebrush, bluebunch wheatgrass

Wardbay: Bluebunch wheatgrass, mountain big sagebrush
Hardol: Bluebunch wheatgrass, mountain big sagebrush, needlegrass
Inclusion 1: None
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Ecological Site

Adobe: 028BY048NV
Wardbay: 028BY070NV
Hardol: 028BY085NV
Inclusion 1: None
Inclusion 2: 028BY060NV
Inclusion 3: 028BY043NV

512--Adobe-Cavehill-Wardbay association

Composition

Major Components

Adobe very gravelly silt loam, 15 to 50 percent slopes--40 percent
Cavehill very gravelly silt loam, 15 to 50 percent slopes--30 percent
Wardbay very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Tecomar very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Hyzen very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Rock outcrop--3 percent
Inclusion 4: Aridic Calcixerolls, loamy-skeletal, mixed, frigid gravelly silt loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Adobe--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Cavehill--Landform: Mountains; geomorphic position: backslope; aspect: north
Wardbay--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: summit
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave

Major Component Description

Adobe Series

Elevation: 6,200 to 8,000 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface rock fragments: 25 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Cavehill Series

Elevation: 6,200 to 8,000 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Wardbay Series

Elevation: 6,200 to 8,000 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Adobe: Black sagebrush, bluebunch wheatgrass
Cavehill: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Wardbay: Bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: None

Inclusion 4: Bluebunch wheatgrass, bluegrass, mountain big sagebrush

Ecological Site

Adobe: 028BY027NV
Cavehill: 028BY058NV
Wardbay: 028BY070NV
Inclusion 1: 028BY008NV
Inclusion 2: 028BY060NV
Inclusion 3: None
Inclusion 4: 028BY088NV

520--Haunchee-Muiral-Wardbay association

Composition

Major Components

Haunchee very gravelly loam, 30 to 75 percent slopes--30 percent
Muiral gravelly loam, 30 to 75 percent slopes--30 percent
Wardbay very gravelly loam, 30 to 75 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Adobe very gravelly silt loam, 15 to 50 percent slopes--6 percent
Inclusion 2: Hardzem channery loam, 30 to 75 percent slopes--6 percent
Inclusion 3: Halacan very gravelly loam, 15 to 50 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
Haunchee--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
Muiral--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Wardbay--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 3--Landform: Mountains; geomorphic position: summit

Major Component Description

Haunchee Series

Elevation: 7,500 to 9,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Muiral Series

Elevation: 7,500 to 9,800 feet
Precipitation: About 18 inches
Air temperature: About 38 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Wardbay Series

Elevation: 7,500 to 9,800 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Muiral: Columbia needlegrass, mountain gooseberry
Wardbay: Bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Black sagebrush, bluebunch wheatgrass
Inclusion 2: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir
Inclusion 3: Black sagebrush, bluebunch wheatgrass

Ecological Site

Haunchee: 028BY043NV
Muiral: 028BY072NV
Wardbay: 028BY070NV
Inclusion 1: 028BY027NV
Inclusion 2: 028BY063NV
Inclusion 3: 028BY048NV

530--Wardbay-Adobe-Haunchee association

Composition

Major Components

Wardbay very gravelly loam, 30 to 75 percent slopes--35 percent
Adobe very gravelly silt loam, 30 to 75 percent slopes--30 percent
Haunchee very gravelly loam, 30 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Hardol gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Muiral gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Halacan very gravelly loam, 30 to 75 percent slopes--3 percent
Inclusion 4: Pachic Cryoborolls, loamy-skeletal, mixed gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Wardbay--Landform: Mountains; geomorphic position: backslope
Adobe--Landform: Mountains; geomorphic position: summit
Haunchee--Landform: Mountains; geomorphic position: summit
Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: north

Major Component Description

Wardbay Series

Elevation: 7,500 to 9,400 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Adobe Series

Elevation: 7,500 to 9,400 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface rock fragments: 25 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Haunchee Series

Elevation: 7,500 to 9,400 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Wardbay: Bluebunch wheatgrass, mountain big sagebrush
Adobe: Black sagebrush, bluebunch wheatgrass
Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 1: Bluebunch wheatgrass, mountain big sagebrush, needlegrass
Inclusion 2: Columbia needlegrass, mountain brome, mountain gooseberry
Inclusion 3: Black sagebrush, bluebunch wheatgrass
Inclusion 4: Bluebunch wheatgrass, mountain big sagebrush, muttongrass, singleleaf pinyon

Ecological Site

Wardbay: 028BY070NV
Adobe: 028BY027NV
Haunchee: 028BY043NV
Inclusion 1: 028BY085NV
Inclusion 2: 028BY072NV
Inclusion 3: 028BY048NV
Inclusion 4: 028BY076NV

532--Onkeyo-Pookaloo-Tecomar association

Composition

Major Components

Onkeyo very gravelly silt loam, 15 to 50 percent slopes--35 percent
Pookaloo very gravelly loam, 8 to 30 percent slopes--30 percent

Tecomar extremely gravelly loam, 8 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Haunchee very gravelly loam, 15 to 50 percent slopes--5 percent

Inclusion 2: Aridic Calcixerolls, loamy-skeletal, mixed, frigid gravelly silt loam, 8 to 30 percent slopes--5 percent

Inclusion 3: Aridic Argixerolls, fine, montmorillonitic, frigid gravelly loam, 4 to 15 percent slopes--4 percent

Inclusion 4: Typic Haploxerolls, coarse-loamy, mixed (calcareous), mesic gravelly sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Onkeyo--Landform: Mountains; geomorphic position: backslope

Pookaloo--Landform: Mountains; geomorphic position: backslope; aspect: south

Tecomar--Landform: Mountains; geomorphic position: backslope; position on slope: lower

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper

Inclusion 4--Landform: Drainageways

Major Component Description

Onkeyo Series

Elevation: 6,000 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series

Elevation: 6,000 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series

Elevation: 6,000 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Onkeyo: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush

Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Inclusion 2: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush

Inclusion 3: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush

Inclusion 4: Basin wildrye, big sagebrush, bluegrass, thickspike wheatgrass

Ecological Site

Onkeyo: 028BY096NV
Pookaloo: 028BY060NV
Tecomar: 028BY008NV
Inclusion 1: 028BY043NV
Inclusion 2: 025XY012NV
Inclusion 3: 025XY007NV
Inclusion 4: 028BY082NV

540--Kunzler-Sycomat association

Composition

Major Components

Kunzler loam, 2 to 4 percent slopes--50 percent

Sycomat sandy loam, 2 to 4 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Duffer silt loam, 0 to 2 percent slopes--7 percent

Inclusion 2: Kolda silt loam, 0 to 2 percent slopes--6 percent
Inclusion 3: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Kunzler--Landform: Fan skirts; position on slope: upper
Sycomat--Landform: Fan skirts; position on slope: lower
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Lake plains

Major Component Description

Kunzler Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Sycomat Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kunzler: Basin wildrye, big sagebrush, black greasewood
Sycomat: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 2: Bluegrass, rush, sedge
Inclusion 3: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Kunzler: 028BY028NV
Sycomat: 028BY074NV
Inclusion 1: 028BY002NV
Inclusion 2: 028BY001NV
Inclusion 3: 028BY020NV

541--Kunzler-Sheffit association

Composition

Major Components
Kunzler silt loam, 2 to 4 percent slopes--45 percent
Sheffit silt loam, 0 to 2 percent slopes--40 percent
Contrasting Inclusions
Inclusion 1: Tulase silt loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Blimo loam, 0 to 2 percent slopes--6 percent
Inclusion 3: Zorravista fine sand, 2 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Kunzler--Landform: Fan skirts
Sheffit--Landform: Lake plains
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Dunes

Major Component Description

Kunzler Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Sheffit Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Kunzler: Basin wildrye, big sagebrush, black greasewood
Sheffit: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, wheatgrass
Inclusion 3: Indian ricegrass, big sagebrush, thickspike wheatgrass

Ecological Site

Kunzler: 028BY028NV
Sheffit: 028BY028NV
Inclusion 1: 028BY045NV
Inclusion 2: 028BY014NV
Inclusion 3: 028BY068NV

550--Urmafot-Bobs-Urmafot, eroded association

Composition

Major Components

Urmafot gravelly loam, 4 to 15 percent slopes--45 percent
Bobs gravelly loam, 4 to 15 percent slopes--25 percent
Urmafot gravelly loam, eroded, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Calciorthids, coarse-loamy, mixed, mesic gravelly silt loam, 8 to 30 percent slopes--6 percent
Inclusion 2: Pachic Haploxerolls, loamy-skeletal, mixed, mesic silt loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Calciorthidic Haploxerolls, fine-silty, mixed, mesic silt loam, 2 to 8 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
Urmafot--Landform: Fan remnants
Bobs--Landform: Fan remnants
Urmafot--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; shape of slope: concave
Inclusion 3--Landform: Inset fans

Major Component Description

Urmafot Series

Elevation: 6,100 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bobs Series

Elevation: 6,100 to 7,700 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite, loess and volcanic ash

Urmafot Series

Elevation: 6,100 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Bobs: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Urmafot: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Bluebunch wheatgrass, bluegrass, mountain big sagebrush
Inclusion 3: Basin big sagebrush, basin wildrye, rubber rabbitbrush

Ecological Site

Urmafot: 028BY006NV
Bobs: 028BY094NV
Urmafot: 028BY060NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY088NV
Inclusion 3: 028BY003NV

551--Urmafot-Bobs association

Composition

Major Components

Urmafot gravelly loam, 4 to 15 percent slopes--65 percent

Bobs gravelly loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Aridic Durixerolls, loamy, mixed, mesic, shallow gravelly silt loam, 4 to 15 percent slopes--5 percent

Inclusion 2: Aridic Durixerolls, loamy, mixed, mesic, shallow loam, 4 to 15 percent slopes--5 percent

Inclusion 3: Durixerollic Camborthids, coarse-loamy, mixed, mesic silt loam, 2 to 8 percent slopes--3 percent

Inclusion 4: Typic Durixerolls, fine-loamy, mixed, mesic silt loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Urmafot--Landform: Fan remnants

Bobs--Landform: Fan remnants

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Inset fans

Inclusion 4--Landform: Fan remnants

Major Component Description

Urmafot Series

Elevation: 5,900 to 7,200 feet

Precipitation: About 12 inches

Air temperature: About 47 degrees

Frost-free season: About 100 days

Surface rock fragments: 40 percent gravel

Surface layer texture: Gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Bobs Series

Elevation: 5,900 to 7,200 feet

Precipitation: About 11 inches

Air temperature: About 44 degrees

Frost-free season: About 85 days

Surface rock fragments: 30 percent gravel

Surface layer texture: Gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from limestone and dolomite, loess and volcanic ash

Dominant Present Vegetation

Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Bobs: Indian ricegrass, big sagebrush, bluebunch wheatgrass

Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Inclusion 3: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Inclusion 4: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Urmafot: 028BY006NV

Bobs: 028BY094NV

Inclusion 1: 028BY007NV

Inclusion 2: 028BY006NV

Inclusion 3: 028BY007NV

Inclusion 4: 028BY007NV

552--Urmafot-Pharo association

Composition

Major Components

Urmafot very gravelly loam, 2 to 8 percent slopes--55 percent

Pharo gravelly loam, 2 to 8 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Simon very gravelly loam, 8 to 30 percent slopes--6 percent

Inclusion 2: Bobs gravelly loam, 2 to 8 percent slopes--4 percent

Inclusion 3: Urmafot gravelly loam, 8 to 30 percent slopes--4 percent

Inclusion 4: Calciorthidic Haploxerolls, fine-silty, mixed, mesic gravelly loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Urmafot--Landform: Fan remnants; position on slope: upper

Pharo--Landform: Fan remnants; position on slope: lower

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Fan remnants; position on slope: upper

Inclusion 3--Landform: Pediments; geomorphic position: backslope; position on slope: upper

Inclusion 4--Landform: Inset fans

Major Component Description

Urmafot Series
Elevation: 6,000 to 6,600 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Pharo Series
Elevation: 6,000 to 6,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 4: Basin wildrye, big sagebrush, bluegrass, thickspike wheatgrass

Ecological Site

Urmafot: 028BY006NV
Pharo: 028BY006NV
Inclusion 1: 028BY008NV
Inclusion 2: 028BY096NV
Inclusion 3: 028BY060NV
Inclusion 4: 028BY082NV

554--Urmafot-Tecomar association

Composition

Major Components
Urmafot very gravelly loam, 8 to 30 percent slopes--45 percent
Tecomar extremely gravelly loam, 8 to 30 percent slopes--20 percent
Urmafot very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Bobs gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Tulase silt loam, 2 to 5 percent slopes--5 percent
Inclusion 3: Automal very gravelly loam, 15 to 50 percent slopes--5 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Urmafot--Landform: Fan remnants
Tecomar--Landform: Hills; geomorphic position: summit
Urmafot--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; position on slope: upper
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower

Major Component Description

Urmafot Series
Elevation: 5,900 to 6,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Tecomar Series
Elevation: 5,900 to 6,500 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Urmafot Series
Elevation: 5,900 to 6,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days

Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Urmafot: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Urmafot: 028BY006NV
Tecomar: 028BY008NV
Urmafot: 028BY060NV
Inclusion 1: 028BY094NV
Inclusion 2: 028BY045NV
Inclusion 3: 028BY016NV

561--Palinor-Urmafot-Palinor, steep association

Composition

Major Components

Palinor very gravelly loam, 4 to 15 percent slopes--50 percent
Urmafot very gravelly loam, 4 to 15 percent slopes--20 percent
Palinor very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Urmafot gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Shabliss gravelly loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Urmafot very gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; position on slope: lower
Urmafot--Landform: Fan remnants; position on slope: upper
Palinor--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; position on slope: lower
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper

Major Component Description

Palinor Series

Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Urmafot Series

Elevation: 6,500 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Palinor Series

Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Urmafot: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Palinor: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Palinor: 028BY011NV
Urmafot: 028BY006NV
Palinor: 028BY011NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY008NV
Inclusion 3: 028BY080NV
Inclusion 4: 028BY060NV

562--Bobs very gravelly loam, 2 to 8 percent slopes

Composition

Major Components

Bobs very gravelly loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Bobs very gravelly loam, 8 to 30 percent slopes--8 percent
Inclusion 2: Tulase silt loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Calciorthidic Haploxerolls, fine-silty, mixed, mesic silt loam, 0 to 4 percent slopes--1 percent
Inclusion 4: Palinor very gravelly sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Bobs--Landform: Fan remnants; geomorphic position: summit
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Bobs Series

Elevation: 5,600 to 7,700 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite, loess and volcanic ash

Dominant Present Vegetation

Bobs: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 3: Basin big sagebrush, basin wildrye, rubber rabbitbrush
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Bobs: 028BY094NV
Inclusion 1: 028BY094NV
Inclusion 2: 028BY045NV
Inclusion 3: 028BY003NV
Inclusion 4: 028BY011NV

563--Bobs-Pyrat association

Composition

Major Components

Bobs cobbly loam, 4 to 15 percent slopes--60 percent
Pyrat very stony sandy loam, 4 to 15 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Aridic Calcixerolls, loamy-skeletal, mixed, mesic stony loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Tosser very gravelly sandy loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Bobs--Landform: Fan remnants
Pyrat--Landform: Alluvial fans
Inclusion 1--Landform: Alluvial fans
Inclusion 2--Landform: Beach terraces

Major Component Description

Bobs Series
Elevation: 5,600 to 7,700 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite, loess and volcanic ash

Pyrat Series
Elevation: 5,600 to 7,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Bobs: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Pyrat: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Bobs: 028BY007NV
Pyrat: 028BY007NV
Inclusion 1: 028BY007NV
Inclusion 2: 028BY011NV

575--Pookaloo-Cavehill-Rock outcrop association

Composition

Major Components
Pookaloo very gravelly loam, 15 to 50 percent slopes--40 percent
Cavehill very gravelly silt loam, 15 to 50 percent slopes--30 percent
Rock outcrop--15 percent

Contrasting Inclusions
Inclusion 1: Tecomar very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Haunchee gravelly loam, 15 to 50 percent slopes--4 percent
Inclusion 3: Bobs gravelly loam, 4 to 15 percent slopes--3 percent
Inclusion 4: Cavehill very gravelly silt loam, 15 to 50 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
Pookaloo--Landform: Mountains; geomorphic position: backslope; aspect: south
Cavehill--Landform: Mountains; geomorphic position: backslope; aspect: north
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: upper
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Major Component Description

Pookaloo Series
Elevation: 5,400 to 8,800 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Cavehill Series
Elevation: 5,400 to 8,800 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area
Elevation: 5,400 to 8,800 feet

Dominant Present Vegetation

Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Cavehill: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 3: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 4: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

Ecological Site

Pookaloo: 028BY060NV
Cavehill: 028BY058NV
Rock outcrop: None
Inclusion 1: 028BY008NV
Inclusion 2: 028BY043NV
Inclusion 3: 028BY094NV
Inclusion 4: 028BY062NV

576--Pookaloo-Tecomar-Onkeyo association

Composition

Major Components

Pookaloo very gravelly loam, 15 to 50 percent slopes--35 percent
Tecomar extremely gravelly loam, 15 to 50 percent slopes--30 percent
Onkeyo very gravelly silt loam, 8 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Zimbob very gravelly loam, 8 to 30 percent slopes--6 percent
Inclusion 2: Bobs gravelly silt loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Rock outcrop--3 percent
Inclusion 4: Aridic Calcixerolls, loamy-skeletal, carbonatic, mesic gravelly loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Pookaloo--Landform: Mountains; geomorphic position: summit; aspect: north
Tecomar--Landform: Mountains; geomorphic position: summit; aspect: south
Onkeyo--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Mountains; geomorphic position: summit
Inclusion 4--Landform: Drainageways

Major Component Description

Pookaloo Series

Elevation: 6,200 to 8,000 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series

Elevation: 6,200 to 8,000 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Onkeyo Series

Elevation: 6,200 to 8,000 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Onkeyo: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread

Inclusion 2: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 3: None
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Pookaloo: 028BY060NV
Tecomar: 028BY008NV
Onkeyo: 028BY079NV
Inclusion 1: 028BY016NV
Inclusion 2: 028BY094NV
Inclusion 3: None
Inclusion 4: 028BY045NV

582--Sheffit-Katelana association

Composition

Major Components

Sheffit fine sandy loam, 0 to 2 percent slopes--50 percent
Sheffit sandy loam, 0 to 2 percent slopes--30 percent
Katelana silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Kawich fine sand, 2 to 8 percent slopes--2 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--2 percent
Inclusion 3: Cumulic Endoaquolls, fine-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Sheffit--Landform: Lake plains
Sheffit--Landform: Lake plains
Katelana--Landform: Lake plains
Inclusion 1--Landform: Dunes
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains

Major Component Description

Sheffit Series

Elevation: 5,500 to 5,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Sheffit Series

Elevation: 5,500 to 5,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Katelana Series

Elevation: 5,500 to 5,600 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Sheffit: Basin wildrye, big sagebrush, creeping wildrye
Sheffit: Basin wildrye, big sagebrush, black greasewood
Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Indian ricegrass, big sagebrush, thickspike wheatgrass
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Bluegrass, rush, sedge

Ecological Site

Sheffit: 028AY025NV
Sheffit: 028BY028NV
Katelana: 028BY074NV
Inclusion 1: 028BY068NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY001NV

590--Upatad-Segura association

Composition

Major Components

Upatad very gravelly silt loam, 15 to 50 percent slopes--50 percent
Segura very cobbly loam, 15 to 50 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, mesic very gravelly loam, 8 to 30 percent slopes--5 percent

Inclusion 2: Pioche very gravelly loam, 8 to 30 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains

Upatad--Landform: Mountains; geomorphic position: backslope; aspect: north

Segura--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains; geomorphic position: backslope

Inclusion 2--Landform: Mountains; geomorphic position: backslope

Major Component Description

Upatad Series

Elevation: 6,100 to 7,300 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Segura Series

Elevation: 6,100 to 7,300 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Upatad: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Segura: Mountain big sagebrush

Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Inclusion 2: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

Ecological Site

Upatad: 028BY060NV

Segura: 028BY087NV

Inclusion 1: 028BY007NV

Inclusion 2: 028BY062NV

600--Onkeyo-Amene-Pookaloo association

Composition

Major Components

Onkeyo very gravelly silt loam, 15 to 50 percent slopes--35 percent

Amene very gravelly silt loam, 15 to 50 percent slopes--25 percent

Pookaloo very gravelly loam, 15 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Adobe very gravelly silt loam, 15 to 50 percent slopes--8 percent

Inclusion 2: Haunchee gravelly loam, 15 to 50 percent slopes--3 percent

Inclusion 3: Typic Calcixerolls, loamy-skeletal, carbonatic, mesic gravelly silt loam, 4 to 15 percent slopes--2 percent

Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Onkeyo--Landform: Mountains; geomorphic position: backslope

Amene--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Pookaloo--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 1--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Inclusion 2--Landform: Mountains; geomorphic position: backslope

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Mountains

Major Component Description

Onkeyo Series

Elevation: 6,800 to 9,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Amene Series
Elevation: 6,800 to 9,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 1 percent stones and boulders; 2 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum derived from limestone and dolomite

Pookaloo Series
Elevation: 6,800 to 9,200 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Onkeyo: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Amene: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Black sagebrush, bluebunch wheatgrass
Inclusion 2: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 3: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass
Inclusion 4: None

Ecological Site

Onkeyo: 028BY096NV
Amene: 028BY079NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY027NV
Inclusion 2: 028BY043NV
Inclusion 3: 028BY007NV
Inclusion 4: None

610--Wintermute-Eastwell association

Composition

Major Components

Wintermute gravelly silt loam, 2 to 8 percent slopes--50 percent
Eastwell gravelly sandy loam, 4 to 15 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Camborthids, coarse-loamy, mixed, mesic gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Okan gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Shabliss gravelly fine sandy loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants; geomorphic position: summit; position on slope: lower
Eastwell--Landform: Fan remnants; geomorphic position: summit; position on slope: upper
Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: lower
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants

Major Component Description

Wintermute Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Eastwell Series
Elevation: 6,200 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Eastwell: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Wintermute: 028BY075NV
Eastwell: 028BY011NV
Inclusion 1: 028BY075NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY010NV

614--Wintermute-Eastwell-Zerk association

Composition

Major Components

Wintermute gravelly sandy loam, 4 to 15 percent slopes--55 percent
Eastwell gravelly sandy loam, 4 to 15 percent slopes--25 percent
Zerk gravelly loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Okan gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants; position on slope: lower
Eastwell--Landform: Fan remnants; position on slope: upper
Zerk--Landform: Fan remnants; position on slope: lower
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Inset fans

Major Component Description

Wintermute Series

Elevation: 5,800 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Eastwell Series

Elevation: 6,200 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Zerk Series

Elevation: 5,800 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Eastwell: Indian ricegrass, black sagebrush, needleandthread
Zerk: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Wintermute: 028BY075NV
Eastwell: 028BY011NV
Zerk: 028BY084NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY078NV

617--Wintermute-Zerk-Loray association

Composition

Major Components

Wintermute gravelly silt loam, 2 to 8 percent slopes--35 percent
Zerk gravelly loam, 2 to 8 percent slopes--30 percent
Loray gravelly loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Okan gravelly sandy loam, 0 to 4 percent slopes--6 percent
Inclusion 2: Tosser gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Linoyer silt loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Wintermute--Landform: Fan remnants; position on slope: upper
Zerk--Landform: Fan remnants; position on slope: lower
Loray--Landform: Fan skirts
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Wintermute Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Loray Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Zerk: Indian ricegrass, winterfat
Loray: Indian ricegrass, bud sagebrush, shadscale
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, winterfat

Ecological Site

Wintermute: 028BY075NV
Zerk: 028BY084NV
Loray: 028AY012NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY016NV
Inclusion 3: 028BY013NV

620--Atlow association

Composition

Major Components
Atlow very gravelly loam, 15 to 50 percent slopes--65 percent
Atlow very gravelly loam, 4 to 15 percent slopes--20 percent
Contrasting Inclusions
Inclusion 1: Rock outcrop--10 percent
Inclusion 2: Okan sandy loam, 0 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Hills
Atlow--Landform: Hills; geomorphic position: backslope
Atlow--Landform: Hills; geomorphic position: summit
Inclusion 1--Landform: Hills; geomorphic position: summit
Inclusion 2--Landform: Drainageways

Major Component Description

Atlow Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Atlow Series
Elevation: 5,700 to 6,500 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Atlow: Indian ricegrass, Thurber needlegrass, black sagebrush
Atlow: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 1: None
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Atlow: 028BY089NV
Atlow: 028BY089NV
Inclusion 1: None
Inclusion 2: 028BY052NV

631--Eastwell-Wintermute-Okan association

Composition

Major Components

Eastwell gravelly sandy loam, 2 to 8 percent slopes--55 percent
Wintermute gravelly silt loam, 2 to 8 percent slopes--15 percent
Okan sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Automal gravelly loam, 0 to 2 percent slopes--9 percent
Inclusion 2: Palinor gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Typic Paleargids, fine, montmorillonitic, mesic gravelly loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Eastwell--Landform: Fan remnants; position on slope: upper
Wintermute--Landform: Fan remnants; position on slope: lower
Okan--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants; position on slope: upper
Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Eastwell Series

Elevation: 6,200 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Wintermute Series

Elevation: 5,800 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series

Elevation: 5,800 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Eastwell: Indian ricegrass, black sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, needleandthread, pigmy sagebrush

Ecological Site

Eastwell: 028BY011NV
Wintermute: 028BY075NV
Okan: 028BY052NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY011NV

Inclusion 3: 028BY040NV

632--Eastwell-Zafod association

Composition

Major Components

Eastwell gravelly sandy loam, 4 to 15 percent slopes--50 percent

Zafod gravelly coarse sandy loam, 4 to 15 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Wintermute gravelly silt loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Urmafot gravelly silt loam, 15 to 30 percent slopes--3 percent

Inclusion 4: Xerollic Durargids, loamy-skeletal, mixed, mesic very gravelly loam, 4 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Eastwell--Landform: Fan remnants

Zafod--Landform: Fan remnants

Inclusion 1--Landform: Fan remnants; position on slope: lower

Inclusion 2--Landform: Fan remnants; position on slope: lower

Inclusion 3--Landform: Fan remnants; position on slope: upper

Inclusion 4--Landform: Fan remnants; geomorphic position: backslope; aspect: south

Major Component Description

Eastwell Series

Elevation: 5,200 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Zafod Series

Elevation: 5,200 to 6,300 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Eastwell: Indian ricegrass, black sagebrush, needleandthread

Zafod: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat

Inclusion 3: Black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Eastwell: 028BY011NV
Zafod: 028BY010NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY090NV
Inclusion 4: 028BY011NV

634--Eastwell-Shabliss-Izar association

Composition

Major Components

Eastwell gravelly sandy loam, 2 to 8 percent slopes--40 percent

Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--35 percent

Izar very gravelly loam, 4 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents gravelly sandy loam, 15 to 50 percent slopes--5 percent

Inclusion 2: Okan loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Eastwell--Landform: Fan remnants

Shabliss--Landform: Fan remnants

Izar--Landform: Pediments

Inclusion 1--Landform: Pediments; geomorphic position: backslope

Inclusion 2--Landform: Inset fans

Major Component Description

Eastwell Series
Elevation: 6,300 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Shabliss Series
Elevation: 6,300 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Izar Series
Elevation: 6,300 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Eastwell: Indian ricegrass, black sagebrush, needleandthread
Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Izar: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Utah juniper, black sagebrush
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Eastwell: 028BY011NV
Shabliss: 028BY010NV
Izar: 028BY011NV
Inclusion 1: 028BY083NV
Inclusion 2: 028BY010NV

636--Eastwell-Hundraw-Okan association

Composition

Major Components
Eastwell very gravelly loam, 2 to 8 percent slopes--45 percent
Hundraw gravelly fine sandy loam, 4 to 15 percent slopes--25 percent
Okan sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Okan loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Urmafot very gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Palinor very gravelly loam, 4 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Eastwell--Landform: Fan remnants; geomorphic position: summit
Hundraw--Landform: Pediments; geomorphic position: backslope
Okan--Landform: Inset fans
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Eastwell Series
Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Hundraw Series
Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Okan Series
Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Eastwell: Indian ricegrass, black sagebrush, needleandthread
Hundraw: Utah juniper
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Eastwell: 028BY011NV
Hundraw: 028BY083NV
Okan: 028BY052NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY006NV
Inclusion 3: 028BY011NV

650--Mizpah-Zerk-Wintermute association

Composition

Major Components
Mizpah sandy loam, 2 to 4 percent slopes--35 percent
Zerk gravelly sandy loam, 2 to 4 percent slopes--30 percent
Wintermute gravelly silt loam, 2 to 4 percent slopes--30 percent
Contrasting Inclusions
Inclusion 1: Izar gravelly loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Mizpah--Landform: Pediments
Zerk--Landform: Fan remnants
Wintermute--Landform: Fan remnants
Inclusion 1--Landform: Pediments

Major Component Description

Mizpah Series
Elevation: 6,000 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 55 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series
Elevation: 6,000 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Wintermute Series
Elevation: 6,000 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mizpah: Indian ricegrass, needleandthread, pigmy sagebrush
Zerk: Indian ricegrass, winterfat
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Mizpah: 028BY040NV
Zerk: 028BY084NV
Wintermute: 028BY075NV
Inclusion 1: 028BY011NV

671--Idway-Mysol association

Composition

Major Components

Idway sandy loam, 0 to 2 percent slopes--60 percent
Mysol silt loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Sheffit silty clay loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Idway--Landform: Lake plains
Mysol--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Idway Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mysol Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Dominant Present Vegetation

Idway: Basin wildrye, big sagebrush, black greasewood
Mysol: Bottlebrush squirreltail, shadscale
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Indian ricegrass, bottlebrush squirreltail, shadscale

Ecological Site

Idway: 028BY028NV
Mysol: 028BY073NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY009NV

672--Idway-James Canyon, drained association

Composition

Major Components

Idway sandy loam, 0 to 2 percent slopes--65 percent
James Canyon loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: James Canyon loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Idway--Landform: Alluvial flats
James Canyon--Landform: Flood plains
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Stream terraces

Major Component Description

Idway Series

Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

James Canyon Series

Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Idway: Basin wildrye, big sagebrush, black greasewood
James Canyon: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 1: Alkali sacaton, bluegrass, mat muhly
Inclusion 2: Black greasewood, rubber rabbitbrush

Ecological Site

Idway: 028BY028NV
James Canyon: 028BY031NV
Inclusion 1: 028BY100NV
Inclusion 2: 028BY004NV

680--Simon-Graley-Chen association

Composition

Major Components

Simon loam, 15 to 30 percent slopes--45 percent
Graley stony loam, 8 to 30 percent slopes--30 percent
Chen very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Lithic Argixerolls, loamy-skeletal, mixed, frigid extremely gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Lithic Argixerolls, loamy-skeletal, mixed, frigid extremely gravelly loam, 8 to 30 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains
Simon--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave
Graley--Landform: Mountains; geomorphic position: backslope
Chen--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Major Component Description

Simon Series

Elevation: 6,500 to 7,400 feet
Precipitation: About 11 inches
Air temperature: About 49 degrees
Frost-free season: About 95 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Graley Series

Elevation: 6,500 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 2 percent stones and boulders; 15 percent cobbles; 15 percent gravel
Surface layer texture: Stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Chen Series

Elevation: 6,500 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Simon: Idaho fescue, basin big sagebrush
Graley: Mountain big sagebrush
Chen: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 1: Mountain big sagebrush
Inclusion 2: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush

Ecological Site

Simon: 025XY027NV
Graley: 025XY012NV
Chen: 028BY037NV
Inclusion 1: 028BY087NV
Inclusion 2: 028BY046NV

691--Tarnach-Wesfil association

Composition

Major Components

Tarnach very gravelly loam, 30 to 50 percent slopes--40 percent
Tarnach very gravelly loam, 8 to 30 percent slopes--30 percent
Wesfil very channery loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Haplargids, loamy-skeletal, mixed, mesic extremely cobbly loam, 30 to 50 percent slopes--7 percent
Inclusion 2: Okan gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic gravelly sandy loam, 8 to 30 percent slopes--2 percent
Inclusion 4: Lithic Torriorthents gravelly loam, 8 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills
Tarnach--Landform: Hills; geomorphic position: backslope; shape of slope: plane
Tarnach--Landform: Hills; geomorphic position: backslope; shape of slope: plane
Wesfil--Landform: Hills; geomorphic position: summit; shape of slope: convex
Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: concave
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Hills; geomorphic position: summit
Inclusion 4--Landform: Hills; geomorphic position: backslope; position on slope: lower

Major Component Description

Tarnach Series
Elevation: 5,800 to 7,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Tarnach Series
Elevation: 5,800 to 7,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Wesfil Series
Elevation: 5,800 to 7,200 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Tarnach: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Tarnach: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Wesfil: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Indian ricegrass, bud sagebrush, galleta, shadscale

Ecological Site

Tarnach: 028BY008NV
Tarnach: 028BY006NV
Wesfil: 028BY016NV
Inclusion 1: 028BY094NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY093NV
Inclusion 4: 028AY003NV

692--Tarnach-Upatad-Wesfil association

Composition

Major Components
Tarnach very gravelly loam, 15 to 50 percent slopes--45 percent
Upatad very gravelly silt loam, 15 to 50 percent slopes--25 percent
Wesfil very channery loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Xerollic Calciorthids, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Pioche very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 3: Shabliss very gravelly loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Eastwell very gravelly loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Tarnach--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south
Upatad--Landform: Mountains; geomorphic position: backslope; aspect: north
Wesfil--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex
Inclusion 1--Landform: Mountains; geomorphic position: backslope
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Fan remnants

Major Component Description

Tarnach Series
Elevation: 6,800 to 7,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Upatad Series
Elevation: 6,800 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Wesfil Series
Elevation: 6,200 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent stones and boulders; 60 percent gravel
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Tarnach: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Upatad: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Wesfil: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Utah juniper, singleleaf pinyon
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Tarnach: 028BY008NV
Upatad: 028BY093NV
Wesfil: 028BY016NV
Inclusion 1: 028BY087NV
Inclusion 2: 028BY062NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY011NV

700--Shabliss-Tulase-Linoyer association

Composition

Major Components
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--35 percent
Tulase very fine sandy loam, 2 to 8 percent slopes--30 percent
Linoyer silt loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Okan gravelly sandy loam, 4 to 8 percent slopes--5 percent
Inclusion 2: Entic Durorthids, loamy, mixed, mesic, shallow silt loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic silt loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Palinor very gravelly sandy loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Shabliss--Landform: Fan remnants
Tulase--Landform: Inset fans
Linoyer--Landform: Inset fans
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan skirts
Inclusion 4--Landform: Fan remnants

Major Component Description

Shabliss Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Tulase Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Linoyer Series
Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Tulase: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Shabliss: 028BY010NV
Tulase: 028BY045NV
Linoyer: 028BY013NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY084NV
Inclusion 3: 028BY017NV
Inclusion 4: 028BY011NV

720--Mysol association

Composition

Major Components
Mysol silty clay loam, 0 to 2 percent slopes--50 percent
Mysol silty clay loam, 0 to 2 percent slopes, ponded--35 percent

Contrasting Inclusions
Inclusion 1: Mysol fine sand, 0 to 2 percent slopes--9 percent
Inclusion 2: Idway loamy sand, 0 to 2 percent slopes--6 percent

Map Unit Setting

Landscape position: Intermontane basins
Mysol--Landform: Alluvial flats
Mysol--Landform: Alluvial flats
Inclusion 1--Landform: Alluvial flats
Inclusion 2--Landform: Alluvial flats

Major Component Description

Mysol Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Mysol Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Dominant Present Vegetation

Mysol: Black greasewood, bottlebrush squirreltail, shadscale

Mysol: Bottlebrush squirreltail, shadscale
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Mysol: 028BY074NV
Mysol: 028BY073NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY028NV

730--Idway-Kawich-Mysol association

Composition

Major Components

Idway loamy sand, 0 to 2 percent slopes--50 percent
Kawich fine sand, 8 to 30 percent slopes--20 percent
Mysol silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Mysol silty clay loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Typic Halaquepts, coarse-loamy, mixed (calcareous), mesic sandy loam, 0 to 2 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Idway--Landform: Alluvial flats
Kawich--Landform: Dunes
Mysol--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Idway Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Loamy sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Kawich Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Mysol Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Dominant Present Vegetation

Idway: Basin wildrye, big sagebrush, black greasewood
Kawich: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Mysol: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Bottlebrush squirreltail, shadscale
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Idway: 028BY028NV
Kawich: 028BY021NV
Mysol: 028BY074NV
Inclusion 1: 028BY073NV
Inclusion 2: 028BY004NV

733--Idway-Idway, moist-Mysol association

Composition

Major Components

Idway loamy sand, 0 to 2 percent slopes--35 percent
Idway sandy loam, 0 to 4 percent slopes--25 percent
Mysol silty clay loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Mysol silty clay loam, 0 to 2 percent slopes--9 percent
Inclusion 2: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silty clay loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Typic Torriorthents, fine, montmorillonitic (calcareous), mesic silty clay loam, 0 to 2 percent slopes--1 percent
Inclusion 4: Playas, 0 to 1 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Idway--Landform: Alluvial flats
Idway--Landform: Alluvial flats
Mysol--Landform: Lake plains
Inclusion 1--Landform: Lake plains

Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Idway Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Loamy sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Idway Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mysol Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Dominant Present Vegetation

Idway: Basin big sagebrush, basin wildrye, black greasewood
Idway: Indian ricegrass, Wyoming big sagebrush, needleandthread
Mysol: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Indian ricegrass, bottlebrush squirreltail, shadscale
Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 3: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Inclusion 4: None

Ecological Site

Idway: 028BY028NV
Idway: 028BY010NV
Mysol: 028BY074NV
Inclusion 1: 028BY009NV
Inclusion 2: 028BY020NV
Inclusion 3: 028BY056NV
Inclusion 4: None

740--Upatad-Pioche-Tarnach association

Composition

Major Components
Upatad extremely cobbly loam, 15 to 50 percent slopes--45 percent
Pioche extremely stony loam, 15 to 50 percent slopes--30 percent
Tarnach very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Lithic Argixerolls, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Xerollic Calciorthids, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 50 percent slopes--4 percent
Inclusion 3: Rubble land, 15 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Upatad--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south
Pioche--Landform: Mountains; geomorphic position: backslope; aspect: south
Tarnach--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south
Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south
Inclusion 3--Landform: Mountains; geomorphic position: backslope

Major Component Description

Upatad Series
Elevation: 7,000 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees

Frost-free season: About 100 days
Surface rock fragments: 20 percent cobbles; 60 percent gravel
Surface layer texture: Extremely cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Pioche Series
Elevation: 6,400 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Tarnach Series
Elevation: 6,400 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Upatad: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Pioche: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon
Tarnach: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: None

Ecological Site

Upatad: 028BY060NV
Pioche: 028BY062NV
Tarnach: 028BY008NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY016NV
Inclusion 3: None

760--Playas, 0 to 1 percent slopes

Composition

Major Components
Playas silty clay loam, 0 to 1 percent slopes--99 percent
Contrasting Inclusions
Inclusion 1: Benin silty clay loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Playas--Landform: Basin floors
Inclusion 1--Landform: Lake plains

Major Component Description

Playas Miscellaneous Area
Elevation: 4,200 to 6,100 feet
Surface layer texture: Silty clay loam
Drainage class: Very poorly drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Dominant Present Vegetation

Playas: None
Inclusion 1: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Playas: None
Inclusion 1: 028BY020NV

761--Umberland association

Composition

Major Components
Umberland silty clay, 0 to 1 percent slopes--65 percent
Umberland silty clay, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
Inclusion 1: Playas, 0 to 1 percent slopes--5 percent
Inclusion 2: Umberland clay, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Umberland--Landform: Lake plains
Umberland--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Umberland Series
Elevation: 6,000 to 6,100 feet

Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Umberland Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Umberland: Bluegrass, foxtail barley, inland saltgrass, rush, sedge
Umberland: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 1: None
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Umberland: 028BY098NV
Umberland: 028BY004NV
Inclusion 1: None
Inclusion 2: 028BY004NV

762--Umberland-Playas association

Composition

Major Components
Umberland silty clay, 0 to 1 percent slopes--50 percent
Playas silty clay loam, 0 to 1 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Umberland clay, 0 to 2 percent slopes--5 percent
Inclusion 2: Benin clay, 0 to 2 percent slopes--5 percent
Inclusion 3: Umberland silty clay, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Umberland--Landform: Lake plains
Playas--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains

Major Component Description

Umberland Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Playas Miscellaneous Area
Elevation: 5,900 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Very poorly drained

Dominant Present Vegetation

Umberland: Bluegrass, foxtail barley, inland saltgrass, rush, sedge
Playas: None
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Inland saltgrass, western wheatgrass

Ecological Site

Umberland: 028BY098NV
Playas: None
Inclusion 1: 028BY004NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY023NV

763--Equis-Umberland-Duffer association

Composition

Major Components
Equis silty clay, 0 to 2 percent slopes--40 percent
Umberland silty clay, 0 to 2 percent slopes--30 percent
Duffer silty clay loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Aquic Calciorthids, fine-loamy, mixed, mesic loam, 2 to 4 percent slopes--4 percent
Inclusion 2: Aquic Durorthids, fine, montmorillonitic, mesic silty clay, 0 to 1 percent slopes--4 percent
Inclusion 3: Sheffit silty clay loam, 0 to 2 percent slopes--4 percent
Inclusion 4: Aquic Durorthids, fine-loamy, mixed, mesic silty clay loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Intermontane basins
Equis--Landform: Alluvial flats
Umberland--Landform: Lake plains
Duffer--Landform: Lake plains
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Equis Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Umberland Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Duffer Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Equis: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Umberland: Alkali sacaton, black greasewood, inland saltgrass
Duffer: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass
Inclusion 3: Basin big sagebrush, basin wildrye, rubber rabbitbrush, western wheatgrass
Inclusion 4: Alkali sacaton, bluegrass, mat muhly

Ecological Site

Equis: 028BY004NV
Umberland: 028BY020NV
Duffer: 028BY002NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY069NV
Inclusion 3: 028BY041NV
Inclusion 4: 028BY100NV

764--Umberland-Rubylake-Orupa association

Composition

Major Components

Umberland silty clay loam, 0 to 2 percent slopes--45 percent
Rubylake clay loam, 0 to 4 percent slopes--30 percent
Orupa silty clay loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Playas, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Umberland--Landform: Lake plains
Rubylake--Landform: Lake terraces
Orupa--Landform: Parna dunes
Inclusion 1--Landform: Lake plains

Major Component Description

Umberland Series

Elevation: 5,900 to 6,000 feet
Precipitation: About 7 inches

Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Rubylake Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Orupa Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Eolian material

Dominant Present Vegetation

Umberland: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Rubylake: Inland saltgrass, sedge, western wheatgrass
Orupa: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: None

Ecological Site

Umberland: 028BY004NV
Rubylake: 028BY012NV
Orupa: 028BY020NV
Inclusion 1: None

765--Umberland-Wendane association

Composition

Major Components
Umberland silty clay, ponded, 0 to 2 percent slopes--35 percent
Umberland silty clay, 0 to 2 percent slopes--30 percent
Wendane silt loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Rubylake silt loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Umberland silty clay, 0 to 2 percent slopes--5 percent
Inclusion 3: Playas silty clay, 0 to 1 percent slopes--4 percent
Inclusion 4: Orupa silty clay, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Umberland--Landform: Lake plains
Umberland--Landform: Lake plains
Wendane--Landform: Lake terraces
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Parna dunes

Major Component Description

Umberland Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Umberland Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Wendane Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Umberland: Bluegrass, inland saltgrass, sedge
Umberland: Alkali sacaton, black greasewood, inland saltgrass
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Inclusion 1: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 2: Inland saltgrass, western wheatgrass
Inclusion 3: None
Inclusion 4: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Umberland: 028BY098NV
Umberland: 028BY020NV
Wendane: 028BY004NV
Inclusion 1: 028BY002NV
Inclusion 2: 028BY023NV
Inclusion 3: None
Inclusion 4: 028BY020NV

767--Umberland-Orupa association

Composition

Major Components

Umberland silty clay, 0 to 2 percent slopes--45 percent
Umberland silty clay, 0 to 2 percent slopes, ponded--30 percent
Orupa silty clay, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Umberland silty clay, 0 to 2 percent slopes--5 percent
Inclusion 2: Playas silty clay, 0 to 1 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Umberland--Landform: Lake terraces
Umberland--Landform: Lake plains
Orupa--Landform: Parna dunes
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Umberland Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Umberland Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Orupa Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Well drained
Dominant parent material: Eolian material

Dominant Present Vegetation

Umberland: Alkali sacaton, black greasewood, inland saltgrass
Umberland: Bluegrass, foxtail barley, inland saltgrass, rush, sedge
Orupa: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: None

Ecological Site

Umberland: 028BY020NV
Umberland: 028BY098NV
Orupa: 028BY020NV
Inclusion 1: 028BY004NV
Inclusion 2: None

781--Mysol-Benin-Wendane association

Composition

Major Components

Mysol silty clay loam, 0 to 2 percent slopes--35 percent
Benin silt loam, 0 to 2 percent slopes--25 percent
Wendane silty clay loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, fine-loamy over sandy or sandy-skeletal, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Playas, 0 to 1 percent slopes--3 percent
Inclusion 3: Toano silt loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins

Mysol--Landform: Lake plains
Benin--Landform: Lake plains
Wendane--Landform: Drainageways
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Mysol Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Benin Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Wendane Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mysol: Black greasewood, bottlebrush squirreltail, shadscale
Benin: Alkali sacaton, black greasewood, inland saltgrass
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: None
Inclusion 3: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 4: Bottlebrush squirreltail, shadscale

Ecological Site

Mysol: 028BY074NV
Benin: 028BY020NV
Wendane: 028BY004NV
Inclusion 1: 028BY028NV
Inclusion 2: None
Inclusion 3: 028BY047NV
Inclusion 4: 028BY073NV

800--Mazuma-Toano association

Composition

Major Components
Mazuma silt loam, 0 to 2 percent slopes--55 percent
Toano silt loam, 0 to 4 percent slopes--35 percent

Contrasting Inclusions
Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Linoyer silt loam, 0 to 2 percent slopes--3 percent
Inclusion 3: Tulase silt loam, 0 to 2 percent slopes--1 percent
Inclusion 4: Zerk gravelly loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Mazuma--Landform: Fan skirts
Toano--Landform: Fan skirts; position on slope: upper
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Fan skirts
Inclusion 4--Landform: Fan skirts

Major Component Description

Mazuma Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Toano Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 115 days
Surface layer texture: Silt loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Mazuma: Bottlebrush squirreltail, shadscale
Toano: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 1: Bottlebrush squirreltail, shadscale
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 4: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Mazuma: 028BY073NV
Toano: 028BY047NV
Inclusion 1: 028BY073NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY045NV
Inclusion 4: 028BY075NV

801--Mazuma-Zerk-Okan association

Composition

Major Components

Mazuma silt loam, 2 to 4 percent slopes--45 percent
Zerk gravelly loam, 0 to 2 percent slopes--25 percent
Okan sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Ragtown silty clay loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Piltdown loamy fine sand, 0 to 4 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Mazuma--Landform: Fan skirts
Zerk--Landform: Barrier beaches
Okan--Landform: Fan skirts
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Barrier beaches

Major Component Description

Mazuma Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Zerk Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Mazuma: Bottlebrush squirreltail, shadscale
Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 2: Black greasewood, bottlebrush squirreltail, sickle saltbush

Ecological Site

Mazuma: 028BY073NV
Zerk: 028BY075NV
Okan: 028BY052NV
Inclusion 1: 028BY047NV
Inclusion 2: 028BY097NV

804--Mazuma-Kawich-Playas association

Composition

Major Components

Mazuma silt loam, 0 to 4 percent slopes--35 percent
Kawich fine sand, 4 to 30 percent slopes--30 percent
Playas silty clay loam, 0 to 1 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Aquic Torriorthents, coarse-loamy,

mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--9 percent
Inclusion 2: Aeric Halaquepts, coarse-loamy, mixed (calcareous), mesic silty clay loam, 0 to 2 percent slopes--2 percent
Inclusion 3: Typic Torriorthents, fine-loamy over sandy or sandy-skeletal, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Benin silty clay loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Mazuma--Landform: Lake plains
Kawich--Landform: Dunes
Playas--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Mazuma Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kawich Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Playas Miscellaneous Area
Elevation: 5,600 to 5,700 feet
Surface layer texture: Silty clay loam
Drainage class: Very poorly drained

Dominant Present Vegetation

Mazuma: Black greasewood, bottlebrush squirreltail, shadscale
Kawich: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Playas: None
Inclusion 1: Inland saltgrass
Inclusion 2: Inland saltgrass, iodinebush
Inclusion 3: Basin wildrye, black greasewood, inland saltgrass
Inclusion 4: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Mazuma: 028BY074NV
Kawich: 028BY021NV
Playas: None
Inclusion 1: 028BY050NV
Inclusion 2: 028AY009NV
Inclusion 3: 028BY069NV
Inclusion 4: 028BY020NV

807--Mazuma-Kunzler-Zerk association

Composition

Major Components
Mazuma silt loam, 0 to 2 percent slopes--40 percent
Kunzler loam, 0 to 2 percent slopes--30 percent
Zerk gravelly sandy loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Threesee very gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic gravelly loamy sand, 2 to 4 percent slopes--5 percent
Inclusion 3: Typic Camborthids, fine-loamy, mixed, mesic gravelly silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Mazuma--Landform: Lake plains
Kunzler--Landform: Barrier beaches
Zerk--Landform: Barrier beaches
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Barrier beaches

Major Component Description

Mazuma Series
Elevation: 6,100 to 6,300 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam

Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kunzler Series
Elevation: 6,100 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Zerk Series
Elevation: 6,100 to 6,300 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Bottlebrush squirreltail, shadscale
Kunzler: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 3: Indian ricegrass, winterfat

Ecological Site

Mazuma: 028BY073NV
Kunzler: 028BY056NV
Zerk: 028BY075NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY078NV
Inclusion 3: 028BY084NV

823--Kunzler-Pyrat-Blimo association

Composition

Major Components
Kunzler loam, 2 to 4 percent slopes--40 percent
Pyrat gravelly sandy loam, 2 to 4 percent slopes--25 percent
Blimo gravelly loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Loray very gravelly sandy loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Sycomat silt loam, 0 to 4 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Kunzler--Landform: Barrier beaches
Pyrat--Landform: Spits
Blimo--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Barrier beaches

Major Component Description

Kunzler Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Pyrat Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Blimo Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kunzler: Basin wildrye, big sagebrush, black greasewood
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread

Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Kunzler: 028BY028NV
Pyrat: 028BY010NV
Blimo: 028BY010NV
Inclusion 1: 028BY017NV
Inclusion 2: 028BY074NV

824--Kunzler-Katelana association

Composition

Major Components

Kunzler loam, 0 to 2 percent slopes--70 percent
Katelana silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Duffer silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Sycomat silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Kunzler--Landform: Fan skirts
Katelana--Landform: Lake plains
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan skirts

Major Component Description

Kunzler Series

Elevation: 5,800 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Katelana Series

Elevation: 5,800 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Kunzler: Basin wildrye, big sagebrush, black greasewood
Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Kunzler: 028BY028NV
Katelana: 028BY074NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY074NV

827--Kunzler-James Canyon association

Composition

Major Components

Kunzler silt loam, 0 to 2 percent slopes--55 percent
James Canyon fine sandy loam, 0 to 2 percent slopes--15 percent
James Canyon loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Camborthids, coarse-loamy over sandy or sandy-skeletal, mixed, mesic fine sandy loam, 0 to 4 percent slopes--8 percent
Inclusion 2: Wendane silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Benin silty clay, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Kunzler--Landform: Barrier beaches
James Canyon--Landform: Flood plains
James Canyon--Landform: Flood plains
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Lake terraces
Inclusion 3--Landform: Lake terraces

Major Component Description

Kunzler Series

Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from sedimentary rocks

James Canyon Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

James Canyon Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kunzler: Basin wildrye, big sagebrush, black greasewood
James Canyon: Alkali sacaton, bluegrass, mat muhly
James Canyon: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 3: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Kunzler: 028BY028NV
James Canyon: 028BY100NV
James Canyon: 028BY031NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY020NV
Inclusion 3: 028BY028NV

828--Kunzler-Pyrat-Wendane association

Composition

Major Components
Kunzler loam, 2 to 4 percent slopes--50 percent
Pyrat gravelly sandy loam, 0 to 2 percent slopes--20 percent
Wendane silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Cumulic Endoaquolls, fine-loamy, mixed, mesic silt loam, 2 to 8 percent slopes--2 percent
Inclusion 2: Palinor gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Boofuss silty clay, 0 to 2 percent slopes--5 percent
Inclusion 4: Pyrat, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Kunzler--Landform: Fan skirts
Pyrat--Landform: Fan skirts; position on slope: upper
Wendane--Landform: Fan skirts; position on slope: lower
Inclusion 1--Landform: Fan skirts; position on slope: upper
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan skirts; position on slope: lower
Inclusion 4--Landform: Fan skirts; position on slope: upper

Major Component Description

Kunzler Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Pyrat Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Wendane Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kunzler: Basin big sagebrush, basin wildrye, black greasewood
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Kunzler: 028BY028NV
Pyrat: 028BY010NV
Wendane: 028BY004NV
Inclusion 1: 028BY001NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY002NV
Inclusion 4: 028BY010NV

830--Pharo-Kzin association

Composition

Major Components

Pharo gravelly loam, 15 to 50 percent slopes--45 percent
Kzin very gravelly loam, 15 to 50 percent slopes--25 percent
Pharo gravelly loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Camborthids, coarse-loamy, mixed, mesic gravelly very fine sandy loam, 2 to 8 percent slopes--10 percent
Inclusion 2: Izar very gravelly loam, 15 to 50 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pharo--Landform: Ballenas; geomorphic position: backslope; shape of slope: convex
Kzin--Landform: Pediments; geomorphic position: backslope
Pharo--Landform: Ballenas; geomorphic position: summit
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Pediments; geomorphic position: backslope

Major Component Description

Pharo Series

Elevation: 6,500 to 7,300 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Kzin Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from sedimentary rocks

Pharo Series

Elevation: 6,500 to 7,300 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Kzin: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Pharo: 028BY006NV
Kzin: 028BY060NV
Pharo: 028BY006NV

Inclusion 1: 028BY007NV
Inclusion 2: 028BY016NV

842--Katelana-Timpie association

Composition

Major Components

Katelana silt loam, 0 to 2 percent slopes--50 percent
Timpie silt loam, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic fine sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Timpie--Landform: Alluvial flats
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Katelana Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Timpie Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 40 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Katelana: Bottlebrush squirreltail, shadscale
Timpie: Thickspike wheatgrass, western wheatgrass, winterfat
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Indian ricegrass, bottlebrush squirreltail, shadscale

Ecological Site

Katelana: 028BY073NV
Timpie: 028BY071NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY009NV

843--Katelana-Kawich association

Composition

Major Components

Katelana silt loam, 0 to 2 percent slopes--50 percent
Kawich fine sand, 2 to 8 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Kunzler silt loam, 0 to 2 percent slopes--10 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Kawich--Landform: Dunes
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Katelana Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Kawich Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Katelana: Bottlebrush squirreltail, shadscale
Kawich: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 1: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Katelana: 028BY073NV
Kawich: 028BY021NV
Inclusion 1: 028BY056NV
Inclusion 2: 028BY074NV

845--Katelana-Ragtown-Timpie association

Composition

Major Components

Katelana silt loam, 0 to 2 percent slopes--50 percent
Ragtown silt loam, 0 to 2 percent slopes--20 percent
Timpie silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--10 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Ragtown--Landform: Lake plains
Timpie--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Katelana Series

Elevation: 5,600 to 6,400 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Ragtown Series

Elevation: 5,600 to 6,400 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Timpie Series

Elevation: 5,600 to 6,400 feet
Precipitation: About 7 inches
Air temperature: About 49 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Katelana: Bottlebrush squirreltail, shadscale
Ragtown: Indian ricegrass, sickle saltbush, western wheatgrass
Timpie: Thickspike wheatgrass, western wheatgrass, winterfat
Inclusion 1: Indian ricegrass, bottlebrush squirreltail, shadscale
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Katelana: 028BY073NV
Ragtown: 028BY047NV
Timpie: 028BY071NV
Inclusion 1: 028BY009NV
Inclusion 2: 028BY074NV

847--Mazuma-Blimo-Wintermute association

Composition

Major Components

Mazuma silt loam, 0 to 2 percent slopes--45 percent
Blimo silt loam, 0 to 2 percent slopes--25 percent
Wintermute gravelly silt loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Toano silt loam, 0 to 2 percent slopes--7 percent
Inclusion 2: Linoyer silt loam, 0 to 2 percent slopes--7 percent
Inclusion 3: Loray sandy loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Mazuma--Landform: Lake plains
Blimo--Landform: Fan skirts
Wintermute--Landform: Fan remnants
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan skirts

Major Component Description

Mazuma Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Blimo Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Wintermute Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Bottlebrush squirreltail, shadscale
Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Mazuma: 028BY073NV
Blimo: 028BY010NV
Wintermute: 028BY075NV
Inclusion 1: 028BY047NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY017NV

850--Palinor-Wintermute-Okan association

Composition

Major Components
Palinor very gravelly loam, 2 to 8 percent slopes--40 percent
Wintermute gravelly silt loam, 2 to 8 percent slopes--30 percent
Okan sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Automal gravelly loam, 8 to 30 percent slopes--10 percent
Inclusion 2: Heist gravelly sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 3: Kzin very gravelly loam, 8 to 30 percent slopes--2 percent
Inclusion 4: Tecomar very gravelly loam, 8 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants; position on slope: upper
Wintermute--Landform: Fan remnants; position on slope: lower
Okan--Landform: Fan skirts
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Pediments; geomorphic position: backslope; position on slope: upper
Inclusion 4--Landform: Hills

Major Component Description

Palinor Series
Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Wintermute Series
Elevation: 5,700 to 6,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam

Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series
Elevation: 5,700 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 4: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Palinor: 028BY011NV
Wintermute: 028BY075NV
Okan: 028BY052NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY084NV
Inclusion 3: 028BY060NV
Inclusion 4: 028BY008NV

851--Palinor-Zimbob-Tecomar association

Composition

Major Components

Palinor very gravelly loam, 2 to 8 percent slopes--40 percent
Zimbob very gravelly loam, 15 to 50 percent slopes--25 percent
Tecomar extremely gravelly loam, 8 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Wintermute gravelly silt loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Rock outcrop--5 percent
Inclusion 3: Okan gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Xeric Torriorthents sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Palinor--Landform: Fan remnants
Zimbob--Landform: Hills
Tecomar--Landform: Hills; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; position on slope: lower
Inclusion 2--Landform: Hills; geomorphic position: summit
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Inset fans

Major Component Description

Palinor Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Zimbob Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days

Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Zimbob: Indian ricegrass, Utah juniper, black sagebrush
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 2: None
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 4: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Palinor: 028BY011NV
Zimbob: 028BY059NV
Tecomar: 028BY008NV
Inclusion 1: 028BY075NV
Inclusion 2: None
Inclusion 3: 028BY052NV
Inclusion 4: 028BY007NV

852--Palinor-Pyrat-Shabliss association

Composition

Major Components

Palinor very gravelly loam, 4 to 15 percent slopes--40 percent
Pyrat gravelly sandy loam, 2 to 8 percent slopes--30 percent
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Tulase silt loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Hundraw very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Urmafot very gravelly loam, 4 to 15 percent slopes--3 percent
Inclusion 4: Bobs gravelly loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants
Pyrat--Landform: Fan remnants; position on slope: lower
Shabliss--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; position on slope: upper
Inclusion 4--Landform: Fan remnants; position on slope: upper

Major Component Description

Palinor Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Pyrat Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Shabliss Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread

Shabliss: Indian ricegrass, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 2: Indian ricegrass, Utah juniper, black sagebrush, black sagebrush, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Indian ricegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Palinor: 028BY011NV
Pyrat: 028BY010NV
Shabliss: 028BY080NV
Inclusion 1: 028BY045NV
Inclusion 2: 028BY083NV
Inclusion 3: 028BY006NV
Inclusion 4: 028BY094NV

854--Palinor-Automal-Shabliss association

Composition

Major Components

Palinor very gravelly loam, 2 to 8 percent slopes--45 percent
Automal gravelly silt loam, 4 to 15 percent slopes--30 percent
Shabliss gravelly fine sandy loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Tulase silt loam, 0 to 4 percent slopes--7 percent
Inclusion 2: Wintermute gravelly silt loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants
Automal--Landform: Fan remnants; position on slope: lower
Shabliss--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants; position on slope: lower

Major Component Description

Palinor Series

Elevation: 5,700 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series

Elevation: 5,700 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Shabliss Series

Elevation: 5,700 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Shabliss: Indian ricegrass, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Palinor: 028BY011NV
Automal: 028BY011NV
Shabliss: 028BY010NV
Inclusion 1: 028BY045NV
Inclusion 2: 028BY075NV

856--Palinor-Parisa association

Composition

Major Components

Palinor gravelly loam, 4 to 15 percent slopes--70 percent
Parisa gravelly loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Urmafot very gravelly loam, 15 to 30 percent slopes--5 percent
Inclusion 2: Aridic Calcixerolls, loamy-skeletal, carbonatic, mesic gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Urmafot very gravelly loam, 4 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants
Parisa--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants; position on slope: upper
Inclusion 2--Landform: Fan remnants; position on slope: upper
Inclusion 3--Landform: Fan remnants; position on slope: upper

Major Component Description

Palinor Series

Elevation: 5,900 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Parisa Series

Elevation: 5,900 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Parisa: Indian ricegrass, Wyoming big sagebrush
Inclusion 1: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 2: Indian ricegrass, big sagebrush
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Palinor: 028BY011NV
Parisa: 028BY010NV
Inclusion 1: 028BY060NV
Inclusion 2: 028BY094NV
Inclusion 3: 028BY006NV

857--Palinor-Shabliss-Linoyer association

Composition

Major Components

Palinor very gravelly loam, 2 to 8 percent slopes--45 percent
Shabliss gravelly fine sandy loam, 2 to 8 percent slopes--30 percent
Linoyer silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Palinor very gravelly sandy loam, 8 to 15 percent slopes--5 percent
Inclusion 2: Parisa gravelly loam, 0 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants
Shabliss--Landform: Fan remnants
Linoyer--Landform: Fan skirts
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants

Major Component Description

Palinor Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Shabliss Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days

Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Linoyer Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Shabliss: Indian ricegrass, Wyoming big sagebrush, needleandthread
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Palinor: 028BY011NV
Shabliss: 028BY010NV
Linoyer: 028BY013NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY010NV

858--Palinor-Automal-Linoyer association

Composition

Major Components
Palinor very gravelly loam, 2 to 8 percent slopes--55 percent
Automal gravelly silt loam, 2 to 8 percent slopes--20 percent
Linoyer silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Okan gravelly loam, 0 to 2 percent slopes--9 percent
Inclusion 2: Shabliss gravelly sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Palinor--Landform: Fan remnants
Automal--Landform: Fan remnants
Linoyer--Landform: Fan skirts
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants

Major Component Description

Palinor Series
Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series
Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Linoyer Series
Elevation: 5,800 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Palinor: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Palinor: 028BY011NV
Automal: 028BY011NV
Linoyer: 028BY013NV
Inclusion 1: 028BY010NV

Inclusion 2: 028BY010NV

870--Theriot-Zimbob association

Composition

Major Components

Theriot very gravelly silt loam, 15 to 50 percent slopes--45 percent

Zimbob very gravelly loam, 15 to 50 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent

Inclusion 2: Tecomar very gravelly loam, 15 to 50 percent slopes--8 percent

Inclusion 3: Zimbob very gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills

Theriot--Landform: Hills; geomorphic position: backslope; aspect: south

Zimbob--Landform: Hills; geomorphic position: backslope; aspect: north

Inclusion 1--Landform: Hills; geomorphic position: summit

Inclusion 2--Landform: Hills; geomorphic position: summit; position on slope: upper

Inclusion 3--Landform: Hills; geomorphic position: backslope

Major Component Description

Theriot Series

Elevation: 5,800 to 8,300 feet

Precipitation: About 6 inches

Air temperature: About 52 degrees

Frost-free season: About 130 days

Surface rock fragments: 5 percent cobbles; 50 percent gravel

Surface layer texture: Very gravelly silt loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Zimbob Series

Elevation: 5,800 to 8,300 feet

Precipitation: About 12 inches

Air temperature: About 47 degrees

Frost-free season: About 100 days

Surface rock fragments: 15 percent cobbles; 80 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Theriot: Indian ricegrass, galleta, shadscale

Zimbob: Indian ricegrass, black sagebrush, needleandthread

Inclusion 1: None

Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Inclusion 3: Indian ricegrass, Utah juniper, black sagebrush

Ecological Site

Theriot: 028AY003NV

Zimbob: 028BY016NV

Inclusion 1: None

Inclusion 2: 028BY008NV

Inclusion 3: 028BY059NV

880--Duffer, drained-Duffer-Kolda association

Composition

Major Components

Duffer silt loam, 0 to 2 percent slopes--40 percent

Duffer silty clay loam, 0 to 2 percent slopes--30 percent

Kolda silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Sycomat gravelly very fine sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Kunzler silt loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Benin silt loam, 0 to 2 percent slopes--4 percent

Inclusion 4: Zerk gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins

Duffer--Landform: Flood plains

Duffer--Landform: Flood plains

Kolda--Landform: Flood plains

Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Fan skirts

Inclusion 3--Landform: Alluvial flats

Inclusion 4--Landform: Spits

Major Component Description

Duffer Series

Elevation: 5,600 to 6,800 feet

Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Duffer Series
Elevation: 5,600 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kolda Series
Elevation: 5,600 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Duffer: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Duffer: Alkali cordgrass, alkali sacaton, inland saltgrass
Kolda: Bluegrass, rush, sedge
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Duffer: 028BY004NV
Duffer: 028BY002NV
Kolda: 028BY001NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY028NV
Inclusion 3: 028BY020NV
Inclusion 4: 028BY084NV

881--Duffer-Kunzler association

Composition

Major Components
Duffer silt loam, 0 to 2 percent slopes--45 percent
Kunzler loam, 2 to 4 percent slopes--40 percent
Contrasting Inclusions
Inclusion 1: Kolda silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Sycomat sandy loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Duffer silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Benin silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Duffer--Landform: Flood plains
Kunzler--Landform: Fan skirts
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Flood plains
Inclusion 4--Landform: Alluvial flats

Major Component Description

Duffer Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kunzler Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Dominant Present Vegetation

Duffer: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Kunzler: Basin wildrye, big sagebrush, black greasewood

Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 4: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Duffer: 028BY004NV
Kunzler: 028BY028NV
Inclusion 1: 028BY001NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY002NV
Inclusion 4: 028BY020NV

882--Duffer-Kolda association

Composition

Major Components

Duffer silty clay loam, 0 to 2 percent slopes--45 percent
Kolda silt loam, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Kunzler fine sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Sycomat gravelly very fine sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Duffer silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Duffer--Landform: Fan skirts
Kolda--Landform: Lake plains
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Fan skirts

Major Component Description

Duffer Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kolda Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Duffer: Alkali cordgrass, alkali sacaton, inland saltgrass
Kolda: Bluegrass, rush, sedge
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Duffer: 028BY002NV
Kolda: 028BY001NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY004NV

894--Zerk-Threesee-Mazuma association

Composition

Major Components

Zerk gravelly sandy loam, 0 to 4 percent slopes--40 percent
Threesee very gravelly sandy loam, 0 to 4 percent slopes--25 percent
Mazuma silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Camborthids, fine-loamy over sandy or sandy-skeletal, mixed, mesic silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Linoyer silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Zorravista fine sand, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Zerk--Landform: Spits
Threesee--Landform: Barrier beaches
Mazuma--Landform: Lagoons
Inclusion 1--Landform: Lagoons
Inclusion 2--Landform: Lagoons

Inclusion 3--Landform: Dunes

Major Component Description

Zerk Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Threesee Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mazuma Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Mazuma: Indian ricegrass, bottlebrush squirreltail, shadscale
Inclusion 1: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, big sagebrush, needleandthread, thickspike wheatgrass

Ecological Site

Zerk: 028BY075NV
Threesee: 028BY010NV
Mazuma: 028BY009NV
Inclusion 1: 028BY056NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY005NV

900--Zerk-Automal-Linoyer association

Composition

Major Components
Zerk gravelly sandy loam, 2 to 8 percent slopes--45 percent
Automal gravelly silt loam, 2 to 8 percent slopes--25 percent
Linoyer silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Zerk gravelly loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Mazuma silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Threesee gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Typic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Zerk--Landform: Spits
Automal--Landform: Barrier beaches
Linoyer--Landform: Lagoons
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Lagoons
Inclusion 3--Landform: Spits
Inclusion 4--Landform: Drainageways

Major Component Description

Zerk Series
Elevation: 5,600 to 5,900 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series
Elevation: 5,600 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam

Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Linoyer Series
Elevation: 5,600 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Zerk: Indian ricegrass, winterfat
Automal: Indian ricegrass, black sagebrush, needleandthread
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 2: Bottlebrush squirreltail, shadscale
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Zerk: 028BY084NV
Automal: 028BY011NV
Linoyer: 028BY013NV
Inclusion 1: 028BY075NV
Inclusion 2: 028BY073NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY052NV

910--Ragtown association

Composition

Major Components
Ragtown silty clay loam, 0 to 2 percent slopes--65 percent
Ragtown silt loam, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--10 percent

Map Unit Setting

Landscape position: Intermontane basins
Ragtown--Landform: Lake plains
Ragtown--Landform: Lake plains
Inclusion 1--Landform: Lake plains

Major Component Description

Ragtown Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silty clay loam
Drainage class: Moderately well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Ragtown Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Ragtown: Black greasewood, bottlebrush squirreltail, sickle saltbush
Ragtown: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 1: Bottlebrush squirreltail, shadscale

Ecological Site

Ragtown: 028BY097NV
Ragtown: 028BY047NV
Inclusion 1: 028BY073NV

912--Katelana association

Composition

Major Components
Katelana silt loam, 0 to 2 percent slopes--50 percent
Katelana silt loam, 0 to 2 percent slopes, ponded--35 percent
Contrasting Inclusions
Inclusion 1: Katelana very fine sandy loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Kawich fine sand, 4 to 15 percent slopes--5 percent
Inclusion 3: Piltdown loamy fine sand, 2 to 8 percent slopes--4 percent
Inclusion 4: Playas, 0 to 1 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins

Katelana--Landform: Lake plains
Katelana--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Dunes
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Fan remnants

Major Component Description

Katelana Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Katelana Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Dominant Present Vegetation

Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Katelana: Bottlebrush squirreltail, shadscale
Inclusion 1: Thickspike wheatgrass, western wheatgrass, winterfat
Inclusion 2: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 3: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 4: None

Ecological Site

Katelana: 028BY074NV
Katelana: 028BY073NV
Inclusion 1: 028BY071NV
Inclusion 2: 028BY021NV
Inclusion 3: 028BY097NV
Inclusion 4: None

914--Katelana-Benin-Sheffit association

Composition

Major Components
Katelana silt loam, 0 to 2 percent slopes--45 percent
Benin silt loam, 0 to 2 percent slopes--25 percent
Sheffit sandy loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Kawich loamy sand, 4 to 15 percent slopes--5 percent
Inclusion 2: Playas silty clay, 0 to 1 percent slopes--5 percent
Inclusion 3: Katelana silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Benin--Landform: Lake plains
Sheffit--Landform: Lake plains
Inclusion 1--Landform: Dunes
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Lake plains

Major Component Description

Katelana Series
Elevation: 6,100 to 6,130 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Benin Series
Elevation: 6,100 to 6,130 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Sheffit Series
Elevation: 6,100 to 6,130 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days

Surface layer texture: Sandy loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Benin: Alkali sacaton, black greasewood, inland saltgrass
Sheffit: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 2: None
Inclusion 3: Thickspike wheatgrass, western wheatgrass, winterfat

Ecological Site

Katelana: 028BY074NV
Benin: 028BY020NV
Sheffit: 028BY028NV
Inclusion 1: 028BY021NV
Inclusion 2: None
Inclusion 3: 028BY071NV

917--Katelana-Sheffit-Ragtown association

Composition

Major Components

Katelana silt loam, 0 to 2 percent slopes--50 percent
Sheffit silt loam, 0 to 2 percent slopes--20 percent
Ragtown silty clay loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Ragtown silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Playas silty clay loam, 0 to 1 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Sheffit--Landform: Lake plains
Ragtown--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Fan remnants

Major Component Description

Katelana Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Sheffit Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Ragtown Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silty clay loam
Drainage class: Moderately well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Sheffit: Basin wildrye, big sagebrush, black greasewood
Ragtown: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 1: Bottlebrush squirreltail, shadscale
Inclusion 2: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 3: None

Ecological Site

Katelana: 028BY074NV
Sheffit: 028BY028NV
Ragtown: 028BY097NV
Inclusion 1: 028BY073NV
Inclusion 2: 028BY047NV

Inclusion 3: None

918--Katelana-Zorravista-Playas association

Composition

Major Components

Katelana silt loam, 0 to 2 percent slopes--45 percent
Zorravista loamy fine sand, 2 to 8 percent slopes--25 percent
Playas silty clay loam, 0 to 1 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Sheffit silt loam, 0 to 2 percent slopes--6 percent
Inclusion 2: Ragtown silt loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Ragtown silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Duffer silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Zorravista--Landform: Dunes
Playas--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Stream terraces

Major Component Description

Katelana Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Zorravista Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 115 days
Surface layer texture: Loamy fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian material

Playas Miscellaneous Area

Elevation: 5,600 to 6,000 feet
Surface layer texture: Silty clay loam
Drainage class: Very poorly drained

Dominant Present Vegetation

Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Zorravista: Indian ricegrass, big sagebrush, thickspike wheatgrass
Playas: None
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 3: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 4: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Katelana: 028BY074NV
Zorravista: 028BY068NV
Playas: None
Inclusion 1: 028BY028NV
Inclusion 2: 028BY097NV
Inclusion 3: 028BY047NV
Inclusion 4: 028BY004NV

930--Okan-Toano-Loray association

Composition

Major Components

Okan sandy loam, 2 to 8 percent slopes--40 percent
Toano silt loam, 0 to 4 percent slopes--30 percent
Loray gravelly sandy loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Linoyer silt loam, 0 to 2 percent slopes--7 percent
Inclusion 2: Okan gravelly sandy loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Xerollic Durorthids, loamy-skeletal, mixed, mesic, shallow gravelly sandy loam, 2 to 4 percent slopes--2 percent
Inclusion 4: Playas silty clay loam, 0 to 1 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Okan--Landform: Fan skirts
Toano--Landform: Fan skirts; position on slope: lower
Loray--Landform: Barrier beaches
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Spits; geomorphic position:

backslope
Inclusion 3--Landform: Spits
Inclusion 4--Landform: Lagoons

Major Component Description

Okan Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Toano Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 115 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Loray Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Toano: Indian ricegrass, sickle saltbush, western wheatgrass
Loray: Indian ricegrass, bud sagebrush, shadscale
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: None

Ecological Site

Okan: 028BY052NV
Toano: 028BY047NV
Loray: 028AY012NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY011NV
Inclusion 4: None

932--Okan-Pyrat association

Composition

Major Components
Okan sandy loam, 2 to 8 percent slopes--50 percent
Pyrat gravelly sandy loam, 2 to 8 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Okan very gravelly loamy sand, 2 to 8 percent slopes--8 percent
Inclusion 2: Xeric Torripsamments, mixed, mesic gravelly loamy sand, 2 to 15 percent slopes--3 percent
Inclusion 3: Pyrat extremely gravelly sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Kunzler sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Okan--Landform: Fan skirts
Pyrat--Landform: Fan skirts
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Sand sheets
Inclusion 3--Landform: Fan skirts
Inclusion 4--Landform: Fan skirts; position on slope: lower

Major Component Description

Okan Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Pyrat Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, big sagebrush, needleandthread, thickspike wheatgrass
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Okan: 028BY010NV
Pyrat: 028BY010NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY005NV
Inclusion 3: 028BY052NV
Inclusion 4: 028BY028NV

941--Sheffit-Zorravista association

Composition

Major Components

Sheffit silt loam, 0 to 2 percent slopes--45 percent
Sheffit fine sandy loam, 0 to 2 percent slopes--25 percent
Zorravista loamy fine sand, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Xeric Torriorthents, coarse-loamy, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Sheffit--Landform: Lake plains
Sheffit--Landform: Lake plains
Zorravista--Landform: Dunes
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Sheffit Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Sheffit Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Zorravista Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 115 days
Surface layer texture: Loamy fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian material

Dominant Present Vegetation

Sheffit: Basin wildrye, big sagebrush, black greasewood
Sheffit: Basin wildrye, big sagebrush, creeping wildrye
Zorravista: Indian ricegrass, big sagebrush, thickspike wheatgrass
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Sheffit: 028BY028NV
Sheffit: 028AY025NV
Zorravista: 028BY068NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY074NV

943--Sheffit-Umberland association

Composition

Major Components

Sheffit silt loam, 0 to 2 percent slopes--45 percent
Umberland silty clay, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Ragtown silty clay loam, 0 to 2 percent slopes--6 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Aeric Halaquepts, fine, montmorillonitic (calcareous), mesic fine sandy loam, 0 to 2 percent slopes--4 percent

Map Unit Setting

Landscape position: Intermontane basins
Sheffit--Landform: Lake plains
Umberland--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains

Major Component Description

Sheffit Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Umberland Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Sheffit: Basin wildrye, big sagebrush, black greasewood
Umberland: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 1: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Inland saltgrass, iodinebush

Ecological Site

Sheffit: 028BY028NV
Umberland: 028BY004NV
Inclusion 1: 028BY097NV
Inclusion 2: 028BY074NV
Inclusion 3: 028AY009NV

960--Gravier-Zerk association

Composition

Major Components

Gravier very gravelly sandy loam, 2 to 8 percent slopes--75 percent
Zerk gravelly sandy loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Durorthids, loamy-skeletal, mixed, mesic, shallow very gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Piltdown loamy fine sand, 2 to 4 percent slopes--4 percent
Inclusion 3: Threesee gravelly sandy loam, 4 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Zerk--Landform: Barrier beaches
Inclusion 1--Landform: Spits; geomorphic position: backslope
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Spits

Major Component Description

Gravier Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Gravier: Indian ricegrass, winterfat
Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Gravier: 028BY084NV
Zerk: 028BY075NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY097NV
Inclusion 3: 028BY010NV

961--Gravier-Piltdown-Zerk association

Composition

Major Components

Gravier loamy sand, 0 to 2 percent slopes--45 percent
Piltdown fine sandy loam, 2 to 8 percent slopes--30 percent
Zerk gravelly sandy loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--10 percent

Map Unit Setting

Landscape position: Intermontane basins
Gravier--Landform: Barrier beaches
Piltdown--Landform: Sand sheets
Zerk--Landform: Barrier beaches
Inclusion 1--Landform: Lake plains

Major Component Description

Gravier Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface layer texture: Loamy sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Piltdown Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Gravier: Indian ricegrass, winterfat
Piltdown: Indian ricegrass, fourwing saltbush, winterfat
Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Bottlebrush squirreltail, shadscale

Ecological Site

Gravier: 028BY084NV
Piltdown: 029XY012NV
Zerk: 028BY075NV
Inclusion 1: 028BY073NV

972--Zimbob-Pookaloo association

Composition

Major Components

Zimbob very gravelly loam, 15 to 50 percent slopes--40 percent
Zimbob very gravelly loam, very shallow, 15 to 50 percent slopes--30 percent
Pookaloo very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Calciorthids, loamy-skeletal, carbonatic, mesic very gravelly silt loam, 2 to 8 percent slopes--6 percent
Inclusion 2: Tecomar extremely gravelly silt loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Hyzen extremely stony loam, 15 to 50 percent slopes--2 percent

Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Hills
Zimbob--Landform: Hills; geomorphic position: backslope; aspect: south
Zimbob--Landform: Hills
Pookaloo--Landform: Hills; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Hills; geomorphic position: backslope; aspect: north
Inclusion 3--Landform: Hills; geomorphic position: summit
Inclusion 4--Landform: Hills; geomorphic position: summit

Major Component Description

Zimbob Series
Elevation: 5,800 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Zimbob Series
Elevation: 5,800 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series
Elevation: 5,800 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Zimbob: Indian ricegrass, black sagebrush, needleandthread
Zimbob: Indian ricegrass, Utah juniper, black sagebrush
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, Scribner needlegrass, black sagebrush, littleleaf mountainmahogany
Inclusion 4: None

Ecological Site

Zimbob: 028BY016NV
Zimbob: 028BY059NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY094NV
Inclusion 2: 028BY008NV
Inclusion 3: 028BY066NV
Inclusion 4: None

974--Zimbob-Tecomar-Pookaloo association

Composition

Major Components
Zimbob very gravelly loam, 8 to 30 percent slopes--40 percent
Tecomar extremely gravelly loam, 8 to 30 percent slopes--30 percent
Pookaloo very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Zimbob gravelly sandy loam, 4 to 15 percent slopes--4 percent
Inclusion 2: Okan loam, 0 to 4 percent slopes--4 percent
Inclusion 3: Okan sandy loam, 0 to 4 percent slopes--4 percent
Inclusion 4: Automal gravelly loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Hills
Zimbob--Landform: Hills; geomorphic position: backslope; aspect: south

Tecomar--Landform: Hills; geomorphic position: backslope; aspect: north
Pookaloo--Landform: Hills; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Fan remnants

Major Component Description

Zimbob Series
Elevation: 5,800 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series
Elevation: 5,800 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 90 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series
Elevation: 5,800 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Zimbob: Indian ricegrass, black sagebrush, needleandthread
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Zimbob: 028BY016NV
Tecomar: 028BY008NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY059NV
Inclusion 2: 028BY045NV
Inclusion 3: 028BY052NV
Inclusion 4: 028BY011NV

975--Tecomar-Zimbob association

Composition

Major Components
Zimbob very gravelly loam, 15 to 50 percent slopes--40 percent
Tecomar extremely gravelly loam, 15 to 50 percent slopes--30 percent
Tecomar extremely gravelly loam, moist, 15 to 50 percent slopes--15 percent
Contrasting Inclusions
Inclusion 1: Rock outcrop--7 percent
Inclusion 2: Pookaloo very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Xeric Torriorthents sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Zimbob gravelly loam, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Zimbob--Landform: Mountains; geomorphic position: backslope; aspect: north
Tecomar--Landform: Mountains; geomorphic position: backslope; aspect: south
Tecomar--Landform: Mountains; geomorphic position: summit
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: backslope; aspect: north
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Mountains; geomorphic position: summit; position on slope: lower

Major Component Description

Zimbob Series
Elevation: 5,300 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 90 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series
Elevation: 5,300 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series
Elevation: 5,300 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 90 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Zimbob: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Tecomar: Indian ricegrass, black sagebrush, needleandthread
Tecomar: Black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: None
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Inclusion 4: Indian ricegrass, Utah juniper, black sagebrush

Ecological Site

Zimbob: 028BY016NV
Tecomar: 028BY008NV
Tecomar: 028BY090NV
Inclusion 1: None
Inclusion 2: 028BY060NV
Inclusion 3: 028BY094NV
Inclusion 4: 028BY059NV

980--Onkeyo-Pookaloo-Zimbob association

Composition

Major Components
Onkeyo very gravelly silt loam, 15 to 50 percent slopes--35 percent
Pookaloo very gravelly loam, 15 to 50 percent slopes--30 percent
Zimbob very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Aridic Calcixerolls, loamy-skeletal, mixed, mesic very gravelly loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Lithic Argixerolls, loamy-skeletal, mixed, mesic very stony loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Lithic Calcixerolls, loamy-skeletal, mixed, mesic very gravelly silt loam, 15 to 50 percent slopes--2 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Hills
Onkeyo--Landform: Hills; geomorphic position: backslope; aspect: north
Pookaloo--Landform: Hills; geomorphic position: backslope; aspect: south
Zimbob--Landform: Hills; geomorphic position: backslope; position on slope: lower
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Hills; geomorphic position: backslope
Inclusion 3--Landform: Hills; geomorphic position: backslope; aspect: south
Inclusion 4--Landform: Hills; geomorphic position: summit

Major Component Description

Onkeyo Series
Elevation: 6,400 to 8,000 feet
Precipitation: About 14 inches

Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series
Elevation: 6,400 to 8,000 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Zimbob Series
Elevation: 6,400 to 7,000 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Onkeyo: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Zimbob: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Utah serviceberry, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Bluebunch wheatgrass, bluegrass, mountain big sagebrush
Inclusion 4: None

Ecological Site

Onkeyo: 028BY079NV
Pookaloo: 028BY060NV
Zimbob: 028BY008NV
Inclusion 1: 028BY007NV
Inclusion 2: 028BY026NV
Inclusion 3: 028BY088NV
Inclusion 4: None

990--Hyzen-Zimbob association

Composition

Major Components
Hyzen extremely stony loam, 30 to 75 percent slopes--70 percent
Zimbob very gravelly loam, 30 to 50 percent slopes--15 percent
Contrasting Inclusions
Inclusion 1: Rock outcrop--10 percent
Inclusion 2: Pookaloo very gravelly loam, 30 to 50 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains
Hyzen--Landform: Mountains; geomorphic position: backslope
Zimbob--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: backslope; aspect: north

Major Component Description

Hyzen Series
Elevation: 6,200 to 7,900 feet
Precipitation: About 13 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 45 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Zimbob Series
Elevation: 6,200 to 7,900 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 80 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Hyzen: Indian ricegrass, Scribner needlegrass, black sagebrush, littleleaf mountainmahogany
Zimbob: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 1: None
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon

Ecological Site

Hyzen: 028BY066NV
Zimbob: 028BY059NV
Inclusion 1: None
Inclusion 2: 028BY060NV

991--Hyzen-Cavehill-Tecomar association

Composition

Major Components

Hyzen extremely stony loam, 15 to 50 percent slopes--45 percent
Cavehill very gravelly silt loam, 15 to 50 percent slopes--25 percent
Tecomar extremely gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Adobe very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Wardbay very gravelly silt loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Rock outcrop--3 percent
Inclusion 4: Aridic Calcixerolls, loamy-skeletal, mixed, frigid gravelly silt loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Hyzen--Landform: Mountains; geomorphic position: summit
Cavehill--Landform: Mountains; geomorphic position: backslope; aspect: north
Tecomar--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: summit; position on slope: upper
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 3--Landform: Mountains; geomorphic position: summit
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave

Major Component Description

Hyzen Series

Elevation: 6,100 to 7,200 feet
Precipitation: About 13 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 45 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Cavehill Series

Elevation: 6,100 to 7,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series

Elevation: 6,100 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Hyzen: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Cavehill: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 1: Black sagebrush, bluebunch wheatgrass
Inclusion 2: Bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: None
Inclusion 4: Bluebunch wheatgrass, bluegrass, mountain big sagebrush

Ecological Site

Hyzen: 028BY060NV

Cavehill: 028BY058NV
Tecomar: 028BY008NV
Inclusion 1: 028BY027NV
Inclusion 2: 028BY070NV
Inclusion 3: None
Inclusion 4: 028BY088NV

1000--Pyrat-Zerk association

Composition

Major Components

Pyrat gravelly sandy loam, 2 to 4 percent slopes--65 percent
Zerk gravelly sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Wintermute sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Tulase silt loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Linoyer fine sandy loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Typic Torriorthents, fine-loamy, mixed (calcareous), mesic silt loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Zerk--Landform: Fan remnants; position on slope: lower
Inclusion 1--Landform: Fan remnants; position on slope: lower
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Fan remnants; position on slope: lower

Major Component Description

Pyrat Series

Elevation: 5,700 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series

Elevation: 5,700 to 6,500 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Zerk: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 3: Indian ricegrass, winterfat
Inclusion 4: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Pyrat: 028BY010NV
Zerk: 028BY084NV
Inclusion 1: 028BY075NV
Inclusion 2: 028BY045NV
Inclusion 3: 028BY013NV
Inclusion 4: 028BY017NV

1001--Pyrat-Okan-Eastwell association

Composition

Major Components

Pyrat gravelly sandy loam, 2 to 8 percent slopes--35 percent
Okan sandy loam, 2 to 8 percent slopes--30 percent
Eastwell gravelly sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Hundraw gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Linoyer silt loam, 2 to 4 percent slopes--4 percent
Inclusion 4: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic, shallow gravelly sandy loam, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Okan--Landform: Inset fans
Eastwell--Landform: Fan remnants
Inclusion 1--Landform: Pediments; geomorphic position: backslope

Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Pyrat Series
Elevation: 6,100 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series
Elevation: 6,100 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Eastwell Series
Elevation: 6,100 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Eastwell: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, winterfat
Inclusion 4: Indian ricegrass, needleandthread, pigmy sagebrush

Ecological Site

Pyrat: 028BY010NV
Okan: 028BY010NV
Eastwell: 028BY011NV
Inclusion 1: 028BY083NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY013NV
Inclusion 4: 028BY040NV

1002--Threesee-Kunzler association

Composition

Major Components
Threesee very gravelly loamy coarse sand, 2 to 8 percent slopes--40 percent
Kunzler loam, 0 to 2 percent slopes--25 percent
Threesee very gravelly sandy loam, 0 to 2 percent slopes--20 percent
Contrasting Inclusions
Inclusion 1: Xeric Torriorthents silt loam, 2 to 8 percent slopes--7 percent
Inclusion 2: Katelana silt loam, 0 to 4 percent slopes--4 percent
Inclusion 3: Tosser very gravelly sandy loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Linoyer fine sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Threesee--Landform: Spits
Kunzler--Landform: Barrier beaches
Threesee--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Lagoons
Inclusion 3--Landform: Spits
Inclusion 4--Landform: Fan skirts

Major Component Description

Threesee Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loamy coarse sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Kunzler Series
Elevation: 5,600 to 6,400 feet

Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Threesee Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Kunzler: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, winterfat
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Threesee: 028BY010NV
Kunzler: 028BY056NV
Threesee: 028BY010NV
Inclusion 1: 028BY054NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY016NV
Inclusion 4: 028BY013NV

1003--Pyrat-Hundraw-Tulase association

Composition

Major Components
Pyrat gravelly sandy loam, 4 to 15 percent slopes--35 percent
Hundraw gravelly fine sandy loam, 8 to 30 percent slopes--30 percent
Tulase very fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Peeko very gravelly silt loam, 4 to 15 percent slopes--10 percent
Inclusion 2: Hundraw gravelly sandy loam, 8 to 30 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Hundraw--Landform: Pediments; geomorphic position: backslope
Tulase--Landform: Inset fans
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Pediments; geomorphic position: backslope

Major Component Description

Pyrat Series
Elevation: 6,700 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Hundraw Series
Elevation: 6,700 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks, loess and volcanic ash

Tulase Series
Elevation: 6,700 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Hundraw: Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Tulase: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Pyrat: 028BY010NV
Hundraw: 028BY083NV
Tulase: 028BY045NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY016NV

1004--Pyrat-Parisa-Tulase association

Composition

Major Components

Pyrat gravelly sandy loam, 2 to 8 percent slopes--45 percent
Parisa gravelly loam, 2 to 8 percent slopes--25 percent
Tulase very fine sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Okan sandy loam, 2 to 8 percent slopes--6 percent
Inclusion 2: Palinor gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Kunzler loam, 2 to 4 percent slopes--2 percent
Inclusion 4: Heist sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Parisa--Landform: Fan remnants
Tulase--Landform: Inset fans
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan skirts
Inclusion 4--Landform: Fan skirts

Major Component Description

Pyrat Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Parisa Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Tulase Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Parisa: Indian ricegrass, Wyoming big sagebrush, needleandthread
Tulase: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Pyrat: 028BY010NV
Parisa: 028BY010NV
Tulase: 028BY045NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY084NV

1005--Pyrat-Zerk-Parisa association

Composition

Major Components

Pyrat gravelly sandy loam, 2 to 8 percent slopes--40 percent

Zerk gravelly fine sandy loam, 2 to 8 percent slopes--30 percent

Parisa gravelly loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Loray gravelly sandy loam, 2 to 4 percent slopes--6 percent

Inclusion 2: Okan sandy loam, 2 to 4 percent slopes--4 percent

Inclusion 3: Kunzler loam, 0 to 4 percent slopes--3 percent

Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins

Pyrat--Landform: Barrier beaches

Zerk--Landform: Spits

Parisa--Landform: Spits

Inclusion 1--Landform: Spits

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Barrier beaches; position on slope: lower

Inclusion 4--Landform: Lake plains

Major Component Description

Pyrat Series

Elevation: 5,600 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zerk Series

Elevation: 5,600 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Parisa Series

Elevation: 5,600 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread

Zerk: Indian ricegrass, bud sagebrush, shadscale, winterfat

Parisa: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 3: Basin wildrye, big sagebrush, black greasewood

Inclusion 4: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Pyrat: 028BY010NV
Zerk: 028BY075NV
Parisa: 028BY010NV
Inclusion 1: 028BY017NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY074NV

1006--Pyrat-Blimo association

Composition

Major Components

Pyrat gravelly sandy loam, 2 to 8 percent slopes--55 percent

Blimo sandy loam, 2 to 4 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Xerollic Durorthids, loamy-skeletal, mixed, mesic very gravelly loam, 2 to 8 percent slopes--6 percent

Inclusion 2: Okan sandy loam, 2 to 4 percent slopes--5 percent

Inclusion 3: Kunzler silt loam, 2 to 4 percent slopes--3 percent

Inclusion 4: Xerollic Durorthids, loamy-skeletal, carbonatic, mesic, shallow gravelly loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Pyrat--Landform: Barrier beaches
Blimo--Landform: Barrier beaches
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Spits

Major Component Description

Pyrat Series
Elevation: 5,600 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Blimo Series
Elevation: 5,600 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Pyrat: 028BY010NV
Blimo: 028BY010NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY052NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY011NV

1007--Pyrat-Parisa-Automal association

Composition

Major Components
Pyrat gravelly sandy loam, 4 to 15 percent slopes--55 percent
Parisa gravelly loam, 4 to 15 percent slopes--15 percent
Automal gravelly silt loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Urmafot very gravelly loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Okan gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Kunzler silt loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Parisa--Landform: Fan remnants
Automal--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants; position on slope: upper
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; position on slope: lower

Major Component Description

Pyrat Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Parisa Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel

Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Parisa: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Pyrat: 028BY010NV
Parisa: 028BY010NV
Automal: 028BY011NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY028NV

1009--Pyrat-Tulase-Wintermute associaiton

Composition

Major Components
Pyrat gravelly sandy loam, 2 to 8 percent slopes--35 percent
Tulase very fine sandy loam, 2 to 8 percent slopes--25 percent
Wintermute gravelly silt loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions
Inclusion 1: Blimo gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Zerk gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Kunzler silt loam, 0 to 4 percent slopes--3 percent
Inclusion 4: Linoyer silt loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan skirts
Tulase--Landform: Drainageways
Wintermute--Landform: Fan skirts
Inclusion 1--Landform: Fan skirts; position on slope: lower
Inclusion 2--Landform: Fan skirts; position on slope: lower
Inclusion 3--Landform: Fan skirts; position on slope: lower
Inclusion 4--Landform: Fan skirts

Major Component Description

Pyrat Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Tulase Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Wintermute Series
Elevation: 5,600 to 5,800 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Tulase: Indian ricegrass, Wyoming big sagebrush, needleandthread
Wintermute: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, wheatgrass
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Pyrat: 028BY010NV
Tulase: 028BY010NV
Wintermute: 028BY075NV
Inclusion 1: 028BY014NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY013NV

1020--Okan-Eastwell-Blimo association

Composition

Major Components

Okan sandy loam, 2 to 8 percent slopes--50 percent
Eastwell gravelly sandy loam, 2 to 8 percent slopes--20 percent
Blimo silt loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Hundraw sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Hundraw sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Linoyer silt loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Toano silt loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Okan--Landform: Inset fans
Eastwell--Landform: Fan remnants
Blimo--Landform: Fan skirts
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Pediments; geomorphic position: backslope
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Inset fans

Major Component Description

Okan Series

Elevation: 5,800 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Eastwell Series

Elevation: 5,800 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Blimo Series

Elevation: 5,800 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Eastwell: Indian ricegrass, black sagebrush, needleandthread
Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Indian ricegrass, Utah juniper, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, winterfat
Inclusion 4: Indian ricegrass, sickle saltbush, western wheatgrass

Ecological Site

Okan: 028BY010NV

Eastwell: 028BY011NV
Blimo: 028BY010NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY083NV
Inclusion 3: 028BY013NV
Inclusion 4: 028BY047NV

1023--Okan-Katelana association

Composition

Major Components

Okan sandy loam, dry, 0 to 4 percent slopes--40 percent
Okan sandy loam, 0 to 4 percent slopes--25 percent
Katelana silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 0 to 4 percent slopes--6 percent
Inclusion 2: Xerollic Durorthids, coarse-loamy, mixed, mesic gravelly sandy loam, 0 to 4 percent slopes--4 percent
Inclusion 3: Mazuma silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Wintermute gravelly silt loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Okan--Landform: Barrier beaches
Okan--Landform: Barrier beaches
Katelana--Landform: Lake plains
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Lagoons
Inclusion 4--Landform: Barrier beaches

Major Component Description

Okan Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Okan Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Katelana Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Dominant Present Vegetation

Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Katelana: Bottlebrush squirreltail, shadscale
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 4: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Okan: 028BY080NV
Okan: 028BY010NV
Katelana: 028BY073NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY074NV
Inclusion 4: 028BY075NV

1030--Segura-Bullump-Hutchley association

Composition

Major Components

Segura very stony sandy clay loam, 15 to 50 percent slopes--40 percent
Bullump very gravelly loam, 15 to 50 percent slopes--25 percent
Hutchley very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Haploxerolls, loamy-skeletal, mixed, frigid gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Chen very gravelly sandy loam, 30 to 75 percent slopes--5 percent
Inclusion 3: Rock outcrop--4 percent
Inclusion 4: Pachic Haploxerolls, loamy-skeletal, mixed, frigid gravelly loam, 15 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Segura--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Bullump--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Hutchley--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 3--Landform: Mountains; geomorphic position: summit
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Major Component Description

Segura Series

Elevation: 7,500 to 8,800 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Very stony sandy clay loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Bullump Series

Elevation: 7,500 to 8,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 20 percent cobbles
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Colluvium derived from volcanic rocks

Hutchley Series

Elevation: 7,500 to 8,800 feet
Precipitation: About 14 inches
Air temperature: About 43 degrees
Frost-free season: About 65 days
Surface rock fragments: 10 percent cobbles; 5 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Segura: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Bullump: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needlegrass
Hutchley: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 2: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 3: None
Inclusion 4: Letterman needlegrass, lupine, slenderbush eriogonum

Ecological Site

Segura: 028BY046NV
Bullump: 028BY015NV
Hutchley: 028BY034NV
Inclusion 1: 028BY043NV
Inclusion 2: 028BY037NV
Inclusion 3: None
Inclusion 4: 028BY051NV

1040--Segura-Pioche-Chen association

Composition

Major Components

Segura very cobbly loam, 8 to 30 percent slopes--45 percent
Pioche very gravelly sandy loam, 8 to 30 percent slopes--25 percent
Chen very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Lithic Argixerolls, loamy-skeletal, mixed, frigid gravelly loam, 15 to 50 percent slopes--6 percent
Inclusion 2: Pachic Haploxerolls, loamy-skeletal, mixed, frigid loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Lithic Argixerolls, loamy-skeletal, mixed, frigid very gravelly sandy loam, 8 to 30 percent slopes--2 percent
Inclusion 4: Pachic Argixerolls, loamy-skeletal, mixed, frigid gravelly sandy loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Segura--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Pioche--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Chen--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: north
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex
Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Major Component Description

Segura Series
Elevation: 6,800 to 7,500 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Pioche Series
Elevation: 6,800 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Chen Series
Elevation: 6,800 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Segura: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Pioche: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon
Chen: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 1: Utah juniper, bluebunch wheatgrass, low sagebrush, singleleaf pinyon
Inclusion 2: Utah serviceberry, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needlegrass

Ecological Site

Segura: 028BY087NV
Pioche: 028BY062NV
Chen: 028BY037NV
Inclusion 1: 028BY064NV
Inclusion 2: 028BY026NV
Inclusion 3: 028BY046NV
Inclusion 4: 028BY015NV

1061--Pioche-Cucamungo-Rock outcrop association

Composition

Major Components
Pioche very gravelly sandy loam, 15 to 50 percent slopes--45 percent
Cucamungo very gravelly sandy loam, 30 to 75 percent slopes--25 percent
Rock outcrop--15 percent

Contrasting Inclusions
Inclusion 1: Chen very cobbly loam, 4 to 30 percent slopes--5 percent
Inclusion 2: Graley stony loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Rozara very gravelly loamy coarse sand, 30 to 75 percent slopes--3 percent
Inclusion 4: Upatad very cobbly loam, 8 to 30 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
Pioche--Landform: Mountains; geomorphic position: backslope; aspect: south
Cucamungo--Landform: Mountains; geomorphic position: backslope

Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: lower

Major Component Description

Pioche Series
Elevation: 7,000 to 8,000 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Cucamungo Series
Elevation: 7,000 to 8,000 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 30 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area
Elevation: 7,000 to 8,000 feet

Dominant Present Vegetation

Pioche: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon
Cucamungo: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 2: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 4: Thurber needlegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Pioche: 028BY062NV
Cucamungo: 025XY061NV
Rock outcrop: None
Inclusion 1: 028BY037NV
Inclusion 2: 028BY087NV
Inclusion 3: 025XY071NV
Inclusion 4: 028BY093NV

1070--Zafod-Automal-Okan association

Composition

Major Components
Zafod gravelly coarse sandy loam, 4 to 15 percent slopes--40 percent
Automal gravelly sandy loam, 4 to 8 percent slopes--30 percent
Okan sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Wesfil gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Linoyer silt loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Rock outcrop--3 percent
Inclusion 4: Pachic Haploxerolls, loamy-skeletal, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Zafod--Landform: Fan remnants
Automal--Landform: Fan remnants
Okan--Landform: Inset fans
Inclusion 1--Landform: Pediments
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Pediments
Inclusion 4--Landform: Fan remnants

Major Component Description

Zafod Series
Elevation: 5,800 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Automal Series
Elevation: 5,800 to 6,600 feet
Precipitation: About 8 inches

Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Okan Series
Elevation: 5,800 to 6,600 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Zafod: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Okan: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: None
Inclusion 4: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Zafod: 028BY010NV
Automal: 028BY011NV
Okan: 028BY052NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY013NV
Inclusion 3: None
Inclusion 4: 028BY007NV

1080--Cotant-Segura association

Composition

Major Components

Cotant gravelly clay loam, 4 to 15 percent slopes--65 percent
Segura very cobbly loam, 8 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Aridic Argixerolls, fine-loamy, mixed, mesic very gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Chen extremely cobbly clay loam, 8 to 30 percent slopes--4 percent
Inclusion 4: Cumulic Endoaquolls, fine-loamy, mixed, frigid silt loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Cotant--Landform: Mountains; geomorphic position: backslope
Segura--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south
Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 3--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 4--Landform: Drainageways

Major Component Description

Cotant Series
Elevation: 7,000 to 7,600 feet
Precipitation: About 14 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly clay loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Segura Series
Elevation: 7,000 to 7,600 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 90 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Cotant: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Segura: Thurber needlegrass, antelope bitterbrush,

bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 2: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needlegrass
Inclusion 3: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 4: Rush, sedge, tufted hairgrass

Ecological Site

Cotant: 028BY037NV
Segura: 028BY087NV
Inclusion 1: 028BY060NV
Inclusion 2: 028BY015NV
Inclusion 3: 028BY037NV
Inclusion 4: 028BY022NV

1111--Parisa gravelly loam, 2 to 8 percent slopes

Composition

Major Components

Parisa gravelly loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Palinor gravelly loam, 4 to 8 percent slopes--8 percent
Inclusion 2: Xeric Torriorthents gravelly sandy loam, 2 to 8 percent slopes--7 percent

Map Unit Setting

Landscape position: Fan piedmonts
Parisa--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Inset fans

Major Component Description

Parisa Series

Elevation: 6,100 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 65 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Parisa: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Parisa: 028BY010NV
Inclusion 1: 028BY011NV
Inclusion 2: 028BY010NV

1120--Okan-Automal association

Composition

Major Components

Okan sandy loam, 2 to 8 percent slopes--65 percent
Automal gravelly silt loam, 4 to 15 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Pharo gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Durixerollic Camborthids, loamy-skeletal, mixed, mesic gravelly loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Durixerollic Camborthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Okan--Landform: Fan skirts
Automal--Landform: Fan remnants
Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: upper
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants; position on slope: upper

Major Component Description

Okan Series

Elevation: 5,900 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Automal Series

Elevation: 5,900 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days

Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Okan: 028BY010NV
Automal: 028BY011NV
Inclusion 1: 028BY006NV
Inclusion 2: 028BY045NV
Inclusion 3: 028BY080NV

1150--Adobe-Wardbay-Haunchee association

Composition

Major Components

Adobe very gravelly silt loam, 15 to 30 percent slopes--45 percent
Wardbay very gravelly loam, 15 to 50 percent slopes--25 percent
Haunchee very cobbly loam, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Belsac very gravelly loam, 15 to 50 percent slopes--7 percent
Inclusion 2: Rock outcrop--5 percent
Inclusion 3: Halacan very gravelly loam, 4 to 15 percent slopes--2 percent
Inclusion 4: Pachic Cryoborolls, loamy-skeletal, mixed very gravelly loam, 15 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Adobe--Landform: Mountains; geomorphic position: summit
Wardbay--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Haunchee--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: summit
Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Major Component Description

Adobe Series

Elevation: 7,800 to 10,080 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface rock fragments: 25 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Wardbay Series

Elevation: 7,800 to 10,080 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Haunchee Series

Elevation: 7,800 to 10,080 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 20 percent cobbles; 30 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Adobe: Idaho fescue, black sagebrush, low sagebrush
Wardbay: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Inclusion 1: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 2: None
Inclusion 3: Black sagebrush, bluebunch wheatgrass
Inclusion 4: Idaho fescue

Ecological Site

Adobe: 025XY024NV
Wardbay: 025XY042NV
Haunchee: 028BY032NV
Inclusion 1: 025XY004NV
Inclusion 2: None
Inclusion 3: 028BY048NV
Inclusion 4: 025XY010NV

1161--Pharo-Bobs-Pookaloo association

Composition

Major Components

Pharo gravelly loam, 4 to 15 percent slopes--40 percent
Bobs gravelly loam, 4 to 15 percent slopes--30 percent
Pookaloo very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pachic Calcixerolls, loamy-skeletal, mixed, frigid gravelly loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Aridic Calcixerolls, loamy-skeletal, carbonatic, frigid very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Aridic Calcixerolls, loamy-skeletal, carbonatic, mesic very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Calciorthidic Haploxerolls, fine-loamy, mixed, mesic silt loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Pharo--Landform: Fan remnants
Bobs--Landform: Fan remnants
Pookaloo--Landform: Hills
Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: concave
Inclusion 2--Landform: Hills; geomorphic position: backslope
Inclusion 3--Landform: Hills; geomorphic position: backslope
Inclusion 4--Landform: Inset fans

Major Component Description

Pharo Series

Elevation: 6,100 to 7,000 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from limestone and dolomite

Bobs Series

Elevation: 6,100 to 7,000 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite, loess and volcanic ash

Pookaloo Series

Elevation: 7,000 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Pharo: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Bobs: Indian ricegrass, big sagebrush, bluebunch wheatgrass
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Bluebunch wheatgrass, bluegrass, mountain big sagebrush
Inclusion 2: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon
Inclusion 3: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Pharo: 028BY006NV
Bobs: 028BY094NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY088NV
Inclusion 2: 028BY062NV
Inclusion 3: 028BY008NV

Inclusion 4: 028BY045NV

1171--Pyrat-Automal-Gravier association

Composition

Major Components

Pyrat gravelly sandy loam, 2 to 8 percent slopes--50 percent
Automal gravelly loam, 2 to 8 percent slopes--20 percent
Gravier very gravelly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat stony sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Durixerollic Calciorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Okan sandy loam, 0 to 4 percent slopes--3 percent
Inclusion 4: Linoyer silt loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Pyrat--Landform: Barrier beaches; position on slope: upper
Automal--Landform: Barrier beaches
Gravier--Landform: Barrier beaches; position on slope: lower
Inclusion 1--Landform: Barrier beaches; position on slope: upper
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Drainageways

Major Component Description

Pyrat Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series

Elevation: 5,700 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Gravier Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Gravier: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Pyrat: 028BY010NV
Automal: 028BY011NV
Gravier: 028BY084NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY080NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY013NV

1172--Pyrat-Automal, very stony-Automal association

Composition

Major Components

Pyrat very stony sandy loam, 4 to 8 percent slopes--35 percent
Automal very stony sandy loam, 4 to 15 percent slopes--30 percent
Automal gravelly loam, 4 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Blimo gravelly loam, 2 to 8 percent slopes--6 percent
Inclusion 2: Urmafot very gravelly loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Kunzler loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Duffer silt loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Pyrat--Landform: Barrier beaches
Automal--Landform: Fan remnants
Automal--Landform: Fan remnants
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Barrier beaches

Major Component Description

Pyrat Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Automal Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Pyrat: 028BY010NV
Automal: 028BY011NV
Automal: 028BY011NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY006NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY004NV

1173--Pyrat-Automal association

Composition

Major Components

Pyrat gravelly loam, 2 to 4 percent slopes--50 percent
Automal gravelly silt loam, 2 to 4 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Tulase silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Parisa loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Kunzler loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Automal--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan skirts

Major Component Description

Pyrat Series

Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Automal Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Automal: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Pyrat: 028BY010NV
Automal: 028BY011NV
Inclusion 1: 028BY045NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY028NV

1174--Pyrat-Tosser association

Composition

Major Components
Pyrat gravelly sandy loam, 2 to 4 percent slopes--60 percent
Tosser very gravelly sandy loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions
Inclusion 1: Aridic Calcixerolls, loamy-skeletal, mixed, mesic very gravelly loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Threesee gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Sheffit fine sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pyrat--Landform: Fan remnants
Tosser--Landform: Beach terraces
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Beach terraces
Inclusion 3--Landform: Lake plains

Major Component Description

Pyrat Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Tosser Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 70 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pyrat: Indian ricegrass, Wyoming big sagebrush, needleandthread
Tosser: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, winterfat

Ecological Site

Pyrat: 028BY010NV
Tosser: 028BY011NV
Inclusion 1: 028BY007NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY075NV

1180--Haunchee-Cavehill association

Composition

Major Components

Haunchee very cobbly loam, 15 to 50 percent slopes--50 percent

Cavehill cobbly loam, 15 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Hardzem cobbly loam, 15 to 50 percent slopes--7 percent

Inclusion 2: Halacan very gravelly loam, 8 to 30 percent slopes--3 percent

Inclusion 3: Wardbay very gravelly silt loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Haunchee very cobbly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Haunchee--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Cavehill--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: summit

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Major Component Description

Haunchee Series

Elevation: 7,000 to 9,100 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 30 percent cobbles; 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Cavehill Series

Elevation: 7,000 to 9,100 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Cavehill: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon

Inclusion 1: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir

Inclusion 2: Black sagebrush, bluebunch wheatgrass

Inclusion 3: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Inclusion 4: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Ecological Site

Haunchee: 025XY071NV
Cavehill: 025XY061NV
Inclusion 1: 028BY063NV
Inclusion 2: 028BY048NV
Inclusion 3: 025XY042NV
Inclusion 4: 028BY032NV

1181--Haunchee-Halacan-Wardbay association

Composition

Major Components

Haunchee very gravelly loam, 15 to 50 percent slopes--35 percent

Halacan very gravelly loam, 8 to 30 percent slopes--30 percent

Wardbay very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Hardzem gravelly silt loam, 30 to 75 percent slopes--5 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Pachic Cryoborolls, coarse-loamy, mixed, mesic gravelly loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Pachic Cryoborolls, loamy-skeletal, mixed very gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Haunchee--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Halacan--Landform: Mountains; geomorphic position: summit
Wardbay--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
Inclusion 4--Landform: Mountains; geomorphic position: backslope

Major Component Description

Haunchee Series
Elevation: 6,800 to 9,200 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Halacan Series
Elevation: 6,800 to 9,200 feet
Precipitation: About 16 inches
Air temperature: About 40 degrees
Frost-free season: About 50 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Wardbay Series
Elevation: 6,800 to 9,200 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Halacan: Black sagebrush, bluebunch wheatgrass
Wardbay: Mountain big sagebrush
Inclusion 1: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir
Inclusion 2: None
Inclusion 3: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 4: Idaho fescue

Ecological Site

Haunchee: 028BY043NV
Halacan: 028BY048NV
Wardbay: 025XY012NV
Inclusion 1: 028BY063NV
Inclusion 2: None
Inclusion 3: 025XY004NV
Inclusion 4: 025XY010NV

1190--Upatad-Atlow association

Composition

Major Components
Upatad very gravelly silt loam, 15 to 50 percent slopes--45 percent
Atlow very gravelly loam, 8 to 30 percent slopes--25 percent
Upatad extremely cobbly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Haploxerollic Durargids gravelly loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Segura cobbly loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Rock outcrop--2 percent
Inclusion 4: Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills
Upatad--Landform: Hills; geomorphic position: backslope; aspect: north
Atlow--Landform: Hills; geomorphic position: summit; aspect: south
Upatad--Landform: Hills; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Hills; geomorphic position: summit
Inclusion 3--Landform: Hills; geomorphic position: summit

Inclusion 4--Landform: Hills; geomorphic position: backslope

Major Component Description

Upatad Series
Elevation: 5,200 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Atlow Series
Elevation: 5,200 to 7,600 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Upatad Series
Elevation: 5,200 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 20 percent cobbles; 60 percent gravel
Surface layer texture: Extremely cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Upatad: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Atlow: Indian ricegrass, Thurber needlegrass, black sagebrush
Upatad: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Thurber needlegrass
Inclusion 2: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: None
Inclusion 4: Indian ricegrass, Scribner needlegrass, black sagebrush, littleleaf mountainmahogany

Ecological Site

Upatad: 028BY093NV
Atlow: 028BY089NV
Upatad: 028BY060NV
Inclusion 1: 028BY086NV
Inclusion 2: 028BY087NV
Inclusion 3: None
Inclusion 4: 028BY066NV

1191--Upatad-Pioche-Rock outcrop association

Composition

Major Components
Upatad very gravelly silt loam, 15 to 50 percent slopes--40 percent
Pioche very gravelly sandy loam, 15 to 50 percent slopes--35 percent
Rock outcrop--15 percent

Contrasting Inclusions
Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, mesic very gravelly loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Aridic Argixerolls, clayey-skeletal, montmorillonitic, mesic very gravelly loam, 4 to 15 percent slopes--3 percent
Inclusion 3: Xeric Torriorthents gravelly silt loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Upatad--Landform: Mountains; geomorphic position: backslope; aspect: south
Pioche--Landform: Mountains; geomorphic position: backslope; aspect: north
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Drainageways

Major Component Description

Upatad Series
Elevation: 5,700 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 80 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Pioche Series
Elevation: 5,700 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area
Elevation: 5,700 to 7,200 feet

Dominant Present Vegetation

Upatad: Thurber needlegrass, black sagebrush, bluebunch wheatgrass
Pioche: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat

Ecological Site

Upatad: 028BY093NV
Pioche: 028BY062NV
Rock outcrop: None
Inclusion 1: 028BY087NV
Inclusion 2: 028BY007NV
Inclusion 3: 028BY045NV

1200--Hardol-Hardzem-Rock outcrop association

Composition

Major Components
Hardol very gravelly silt loam, 15 to 50 percent slopes--35 percent
Hardzem channery loam, 15 to 50 percent slopes--30 percent
Rock outcrop--15 percent

Contrasting Inclusions
Inclusion 1: Cavehill gravelly silt loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Hyzen very gravelly loam, 15 to 50 percent slopes--7 percent
Inclusion 3: Haunchee cobbly loam, 8 to 30 percent slopes--3 percent
Inclusion 4: Halacan extremely gravelly loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Hardol--Landform: Mountains; geomorphic position: backslope
Hardzem--Landform: Mountains; geomorphic position: backslope; aspect: north
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 3--Landform: Mountains; geomorphic position: backslope
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Hardol Series
Elevation: 7,000 to 9,400 feet
Precipitation: About 20 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Hardzem Series
Elevation: 7,000 to 9,400 feet
Precipitation: About 25 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 25 percent cobbles; 45 percent gravel
Surface layer texture: Channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Rock outcrop Miscellaneous Area
Elevation: 7,000 to 9,400 feet

Dominant Present Vegetation

Hardol: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Hardzem: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir

Rock outcrop: None
Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 4: Black sagebrush, bluebunch wheatgrass

Ecological Site

Hardol: 028BY042NV
Hardzem: 028BY063NV
Rock outcrop: None
Inclusion 1: 028BY058NV
Inclusion 2: 028BY060NV
Inclusion 3: 028BY043NV
Inclusion 4: 028BY048NV

1201--Hardol-Rock outcrop-Wardbay association

Composition

Major Components

Hardol very gravelly silt loam, 30 to 75 percent slopes--40 percent
Rock outcrop--25 percent
Wardbay very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Haunchee cobbly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Hardol gravelly silt loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Cavehill gravelly silt loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Halacan extremely gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Hardol--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Rock outcrop--Landform: Mountains
Wardbay--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Inclusion 1--Landform: Mountains; geomorphic position: backslope
Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: north
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Hardol Series

Elevation: 6,600 to 8,800 feet
Precipitation: About 20 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 6,600 to 8,800 feet

Wardbay Series

Elevation: 6,600 to 8,800 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Hardol: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Rock outcrop: None
Wardbay: Bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 2: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir
Inclusion 3: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Inclusion 4: Black sagebrush, bluebunch wheatgrass

Ecological Site

Hardol: 028BY042NV
Wardbay: 028BY070NV
Rock outcrop: None
Inclusion 1: 028BY043NV
Inclusion 2: 028BY063NV
Inclusion 3: 028BY058NV
Inclusion 4: 028BY048NV

1210--Blimo-Kunzler-Linoyer association

Composition

Major Components

Blimo gravelly loam, 0 to 2 percent slopes--50 percent
Kunzler loam, 0 to 2 percent slopes--20 percent
Linoyer silt loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Pyrat gravelly sandy loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Zerk gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Kunzler silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Blimo--Landform: Barrier beaches
Kunzler--Landform: Barrier beaches
Linoyer--Landform: Lagoons
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Lagoons; position on slope: lower

Major Component Description

Blimo Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Kunzler Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Linoyer Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Blimo: Indian ricegrass, Wyoming big sagebrush, wheatgrass
Kunzler: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale, winterfat
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: Bottlebrush squirreltail, shadscale

Ecological Site

Blimo: 028BY014NV
Kunzler: 028BY056NV
Linoyer: 028BY013NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY075NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY073NV

1213--Blimo-Threesee association

Composition

Major Components

Blimo sandy loam, 0 to 2 percent slopes--60 percent
Threesee gravelly loam, 0 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Mazuma silt loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Tosser gravelly sandy loam, 0 to 4 percent slopes--3 percent
Inclusion 3: Durixerollic Calciorthids, sandy-skeletal, mixed, mesic very gravelly loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Kunzler loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Blimo--Landform: Barrier beaches
Threesee--Landform: Barrier beaches

Inclusion 1--Landform: Lagoons
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Spits
Inclusion 4--Landform: Barrier beaches

Major Component Description

Blimo Series
Elevation: 5,700 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Threesee Series
Elevation: 5,700 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, bottlebrush squirreltail, shadscale
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Blimo: 028BY010NV
Threesee: 028BY010NV
Inclusion 1: 028BY009NV
Inclusion 2: 028BY016NV
Inclusion 3: 028BY080NV
Inclusion 4: 028BY028NV

1215--Blimo-Zorravista association

Composition

Major Components
Blimo sandy loam, 2 to 8 percent slopes--70 percent
Zorravista loamy fine sand, 4 to 15 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Durixerollic Camborthids, coarse-loamy, mixed, mesic sandy loam, 2 to 8 percent slopes--10 percent
Inclusion 2: Tosser gravelly loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Katelana silt loam, 0 to 2 percent slopes--1 percent
Inclusion 4: Okan sandy loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Blimo--Landform: Barrier beaches
Zorravista--Landform: Dunes
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Spits
Inclusion 3--Landform: Lagoons
Inclusion 4--Landform: Barrier beaches

Major Component Description

Blimo Series
Elevation: 5,700 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zorravista Series
Elevation: 5,700 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 115 days
Surface layer texture: Loamy fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian material

Dominant Present Vegetation

Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Zorravista: Indian ricegrass, big sagebrush, thickspike wheatgrass
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Bottlebrush squirreltail, shadscale
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Blimo: 028BY010NV
Zorravista: 028BY068NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY016NV
Inclusion 3: 028BY073NV
Inclusion 4: 028BY052NV

1216--Blimo-Idway-Mazuma association

Composition

Major Components

Blimo sandy loam, 0 to 2 percent slopes--35 percent
Idway sandy loam, 0 to 2 percent slopes--30 percent
Mazuma silt loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Threesee loam, 2 to 4 percent slopes--4 percent
Inclusion 2: Toano silt loam, 0 to 2 percent slopes--2 percent
Inclusion 3: Kunzler loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Kunzler loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Blimo--Landform: Barrier beaches
Idway--Landform: Barrier beaches
Mazuma--Landform: Barrier beaches
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Fan aprons
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Barrier beaches

Major Component Description

Blimo Series

Elevation: 5,600 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Idway Series

Elevation: 5,600 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mazuma Series

Elevation: 5,600 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Idway: Indian ricegrass, Wyoming big sagebrush, needleandthread
Mazuma: Bottlebrush squirreltail, shadscale
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 3: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Blimo: 028BY010NV
Idway: 028BY010NV
Mazuma: 028BY073NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY047NV
Inclusion 3: 028BY056NV

Inclusion 4: 028BY028NV

1220--Onkeyo-Adobe-Pookaloo association

Composition

Major Components

Onkeyo very gravelly silt loam, 15 to 50 percent slopes--40 percent
Adobe very gravelly silt loam, 15 to 30 percent slopes--30 percent
Pookaloo very gravelly loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Tecomar very gravelly silt loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Haunchee gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 3: Bobs gravelly loam, 4 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains
Onkeyo--Landform: Mountains; geomorphic position: backslope; aspect: north
Adobe--Landform: Mountains; geomorphic position: summit; position on slope: upper
Pookaloo--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Fan remnants

Major Component Description

Onkeyo Series

Elevation: 6,900 to 8,300 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Adobe Series

Elevation: 7,800 to 8,300 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface rock fragments: 25 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series

Elevation: 6,900 to 7,800 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Onkeyo: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Adobe: Black sagebrush, bluebunch wheatgrass
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Inclusion 2: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 3: Indian ricegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Onkeyo: 028BY079NV
Adobe: 028BY027NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY008NV
Inclusion 2: 028BY043NV
Inclusion 3: 028BY094NV

1230--Hardzem-Haunchee-Wardbay association

Composition

Major Components

Hardzem very stony loam, 30 to 75 percent slopes--50 percent
Haunchee very gravelly loam, 30 to 75 percent slopes--20 percent
Wardbay very gravelly loam, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Pachic Cryoborolls, loamy-skeletal, mixed very gravelly loam, 30 to 75 percent slopes--5 percent
Inclusion 3: Belsac very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Entic Cryumbrepts, fine-loamy, mixed gravelly loam, 30 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Hardzem--Landform: Mountains; geomorphic position: backslope; aspect: north
Haunchee--Landform: Mountains; geomorphic position: backslope
Wardbay--Landform: Mountains; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Major Component Description

Hardzem Series
Elevation: 7,800 to 10,260 feet
Precipitation: About 25 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 5 percent stones and boulders; 25 percent cobbles; 45 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Haunchee Series
Elevation: 7,800 to 10,260 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Wardbay Series
Elevation: 7,800 to 10,260 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Hardzem: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir
Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Wardbay: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: None
Inclusion 2: Idaho fescue
Inclusion 3: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 4: Letterman needlegrass, tailcup lupine

Ecological Site

Hardzem: 028BY063NV
Haunchee: 028BY032NV
Wardbay: 025XY042NV
Inclusion 1: None
Inclusion 2: 025XY010NV
Inclusion 3: 025XY004NV
Inclusion 4: 025XY028NV

1240--Benin association

Composition

Major Components
Benin silty clay loam, 0 to 2 percent slopes--65 percent
Benin silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Benin silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Ragtown silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Benin--Landform: Lake plains
Benin--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Inclusion 3--Landform: Lake plains

Major Component Description

Benin Series
Elevation: 5,585 to 5,600 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Benin Series
Elevation: 5,585 to 5,600 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Benin: Alkali sacaton, black greasewood, inland saltgrass
Benin: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 3: Black greasewood, bottlebrush squirreltail, sickle saltbush

Ecological Site

Benin: 028BY020NV
Benin: 028BY020NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY047NV
Inclusion 3: 028BY097NV

1241--Benin, moist-Playas-Benin association

Composition

Major Components
Benin silty clay loam, 0 to 2 percent slopes--55 percent
Playas silty clay loam, 0 to 1 percent slopes--15 percent
Benin silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Aeric Halaquepts, fine, montmorillonitic (calcareous), mesic silty clay loam, 0 to 2 percent slopes--4 percent
Inclusion 2: Kawich fine sand, 4 to 30 percent slopes--4 percent
Inclusion 3: Aquic Torriorthents, fine, montmorillonitic (calcareous), mesic silt loam, 0 to 2 percent slopes--4 percent
Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Intermontane basins
Benin--Landform: Lake plains
Playas--Landform: Flood-plain playas
Benin--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Dunes
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Benin Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Playas Miscellaneous Area
Elevation: 5,600 to 6,000 feet
Surface layer texture: Silty clay loam
Drainage class: Very poorly drained

Benin Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Benin: Basin wildrye, black greasewood, inland saltgrass
Playas: None

Benin: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 3: Inland saltgrass
Inclusion 4: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Benin: 028BY069NV
Benin: 028BY020NV
Playas: None
Inclusion 1: 028BY001NV
Inclusion 2: 028BY021NV
Inclusion 3: 028BY050NV
Inclusion 4: 028BY074NV

1250--Tecomar-Pookaloo association

Composition

Major Components

Tecomar extremely gravelly loam, 15 to 50 percent slopes--65 percent
Pookaloo very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Haploxerolls, coarse-loamy, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Typic Argixerolls, fine-loamy, mixed, frigid gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 3: Cavehill very stony silt loam, 15 to 50 percent slopes--2 percent
Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Mountains
Tecomar--Landform: Mountains; geomorphic position: summit
Pookaloo--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Mountains; geomorphic position: backslope
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Tecomar Series

Elevation: 5,400 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Pookaloo Series

Elevation: 5,400 to 7,700 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 1: Basin wildrye, big sagebrush, bluegrass, thickspike wheatgrass
Inclusion 2: Bluebunch wheatgrass, bluegrass, mountain big sagebrush
Inclusion 3: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Inclusion 4: None

Ecological Site

Tecomar: 028BY008NV
Pookaloo: 028BY060NV
Inclusion 1: 028BY082NV
Inclusion 2: 028BY088NV
Inclusion 3: 028BY058NV
Inclusion 4: None

1270--Katelana-Sheffit association

Composition

Major Components

Katelana silt loam, 0 to 2 percent slopes--65 percent
Sheffit silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Duffer silt loam, 0 to 2 percent slopes--7 percent
Inclusion 2: Kunzler loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Sycomat loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Playas, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Sheffit--Landform: Lake plains
Inclusion 1--Landform: Alluvial flats
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Fan remnants

Major Component Description

Katelana Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Sheffit Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Sheffit: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 4: None

Ecological Site

Katelana: 028BY074NV
Sheffit: 028BY028NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY028NV
Inclusion 3: 028BY074NV
Inclusion 4: None

1271--Uvada-Ragtown association

Composition

Major Components

Uvada silty clay loam, 0 to 2 percent slopes--55 percent
Ragtown silty clay loam, 0 to 2 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Sheffit silt loam, 0 to 2 percent slopes--6 percent
Inclusion 2: Ragtown silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Kawich fine sand, 4 to 15 percent slopes--3 percent
Inclusion 4: Benin silty clay, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Uvada--Landform: Lake plains
Ragtown--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Dunes
Inclusion 4--Landform: Lake plains

Major Component Description

Uvada Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Ragtown Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silty clay loam
Drainage class: Moderately well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Uvada: Black greasewood, bottlebrush squirreltail, shadscale
Ragtown: Black greasewood, bottlebrush squirreltail, sickle saltbush
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 3: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 4: Alkali sacaton, black greasewood, inland saltgrass

Ecological Site

Uvada: 028BY074NV
Ragtown: 028BY097NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY047NV
Inclusion 3: 028BY021NV
Inclusion 4: 028BY020NV

1272--Katelana, cool-Kawich association

Composition

Major Components
Katelana silt loam, cool, 0 to 2 percent slopes--55 percent
Kawich fine sand, 4 to 15 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Playas silty clay, 0 to 1 percent slopes--5 percent
Inclusion 2: Typic Torriorthents, fine-silty, mixed (calcareous), mesic loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Katelana--Landform: Lake plains
Kawich--Landform: Dunes
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Lake plains

Major Component Description

Katelana Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from limestone and dolomite over lacustrine sediments

Kawich Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Katelana: Black greasewood, bottlebrush squirreltail, shadscale
Kawich: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 1: None
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Katelana: 028BY074NV
Kawich: 028BY021NV
Inclusion 1: None
Inclusion 2: 028BY017NV

1280--Sycomat-Kunzler association

Composition

Major Components
Sycomat silt loam, 0 to 4 percent slopes--65 percent
Kunzler loam, 0 to 4 percent slopes--20 percent
Contrasting Inclusions
Inclusion 1: Xerollic Calciorthids, loamy-skeletal, mixed, mesic gravelly loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Pyrat loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Benin silty clay loam, 0 to 2 percent slopes--1 percent
Inclusion 4: Katelana silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Sycomat--Landform: Barrier beaches
Kunzler--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Sycomat Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Kunzler Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Dominant Present Vegetation

Sycomat: Black greasewood, bottlebrush squirreltail, shadscale
Kunzler: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 4: Black greasewood, bottlebrush squirreltail, shadscale

Ecological Site

Sycomat: 028BY074NV
Kunzler: 028BY028NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY020NV
Inclusion 4: 028BY074NV

1281--Sycomat-Mazuma association

Composition

Major Components
Sycomat silt loam, 0 to 2 percent slopes--60 percent
Mazuma silt loam, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
Inclusion 1: Kunzler silt loam, 0 to 2 percent slopes--7 percent
Inclusion 2: Blimo sandy loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Toano silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Idway silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Sycomat--Landform: Barrier beaches
Mazuma--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Barrier beaches

Major Component Description

Sycomat Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mazuma Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Sycomat: Black greasewood, bottlebrush squirreltail, shadscale
Mazuma: Indian ricegrass, bottlebrush squirreltail, shadscale

Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Sycomat: 028BY074NV
Mazuma: 028BY009NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY047NV
Inclusion 4: 028BY010NV

1290--Heist-Blimo association

Composition

Major Components

Heist fine sandy loam, 0 to 4 percent slopes--45 percent
Blimo gravelly loam, 0 to 4 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Linoyer silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Xerollic Calciorthids, loamy-skeletal, mixed, mesic very gravelly loam, 2 to 4 percent slopes--4 percent
Inclusion 3: Tulase silt loam, 0 to 4 percent slopes--4 percent
Inclusion 4: Loray gravelly loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Heist--Landform: Inset fans
Blimo--Landform: Fan skirts
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Fan skirts

Major Component Description

Heist Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Blimo Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Heist: Indian ricegrass, winterfat
Blimo: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, basin wildrye, thickspike wheatgrass, winterfat
Inclusion 4: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Heist: 028BY084NV
Blimo: 028BY010NV
Inclusion 1: 028BY013NV
Inclusion 2: 028BY080NV
Inclusion 3: 028BY045NV
Inclusion 4: 028BY017NV

1300--Cavehill-Haunchee-Hardzem association

Composition

Major Components

Cavehill very stony silt loam, 15 to 50 percent slopes--45 percent
Haunchee very gravelly loam, 30 to 75 percent slopes--25 percent
Hardzem channery loam, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Wardbay very gravelly loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Hopeka gravelly loam, 15 to 50 percent slopes--4 percent

Inclusion 3: Halacan very gravelly loam, 8 to 30 percent slopes--2 percent
Inclusion 4: Halacan very gravelly loam, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Cavehill--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Haunchee--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Hardzem--Landform: Mountains; geomorphic position: backslope; aspect: north
Inclusion 1--Landform: Mountains; geomorphic position: backslope
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex
Inclusion 3--Landform: Mountains; geomorphic position: summit
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Cavehill Series
Elevation: 7,000 to 8,000 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 5 percent stones and boulders; 5 percent cobbles; 20 percent gravel
Surface layer texture: Very stony silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Haunchee Series
Elevation: 7,000 to 8,000 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 50 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Hardzem Series
Elevation: 7,000 to 8,000 feet
Precipitation: About 25 inches
Air temperature: About 40 degrees
Frost-free season: About 60 days
Surface rock fragments: 25 percent cobbles; 45 percent gravel
Surface layer texture: Channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Dominant Present Vegetation

Cavehill: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Haunchee: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Hardzem: Bluebunch wheatgrass, limber pine, mountain big sagebrush, white fir
Inclusion 1: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Inclusion 3: Idaho fescue, black sagebrush, low sagebrush
Inclusion 4: Black sagebrush, bluebunch wheatgrass

Ecological Site

Cavehill: 028BY058NV
Haunchee: 028BY043NV
Hardzem: 028BY063NV
Inclusion 1: 025XY042NV
Inclusion 2: 028BY060NV
Inclusion 3: 025XY024NV
Inclusion 4: 028BY048NV

1360--Toba-Appian association

Composition

Major Components
Toba loam, 0 to 2 percent slopes--60 percent
Appian loam, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
Inclusion 1: Idway sandy loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Mysol silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Wendane silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Toba--Landform: Flood plains
Appian--Landform: Lake terraces
Inclusion 1--Landform: Alluvial flats
Inclusion 2--Landform: Lake plains

Inclusion 3--Landform: Stream terraces

Major Component Description

Toba Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Appian Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Toba: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Appian: Alkali sacaton, bluegrass, mat muhly
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Toba: 028BY031NV
Appian: 028BY100NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY004NV

1370--Orupa-Playas-Boofuss association

Composition

Major Components
Orupa silty clay loam, 0 to 2 percent slopes--40 percent
Playas silty clay loam, 0 to 1 percent slopes--25 percent
Boofuss silty clay, 0 to 2 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Wendane silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Mysol silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Idway sandy loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Aeric Halaquepts, fine, montmorillonitic (calcareous), mesic silty clay loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Orupa--Landform: Parna dunes
Playas--Landform: Lake plains
Boofuss--Landform: Lake plains
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Fan skirts
Inclusion 4--Landform: Lake plains

Major Component Description

Orupa Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Eolian material

Playas Miscellaneous Area
Elevation: 5,600 to 5,700 feet
Surface layer texture: Silty clay loam
Drainage class: Very poorly drained

Boofuss Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Orupa: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Playas: None
Boofuss: Basin wildrye, black greasewood, inland saltgrass
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: Inland saltgrass

Ecological Site

Orupa: 028BY020NV
Boofuss: 028BY069NV
Playas: None
Inclusion 1: 028BY004NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY028NV
Inclusion 4: 028BY050NV

1380--Hulderman-Toba-Benin association

Composition

Major Components

Hulderman fine sandy loam, 0 to 2 percent slopes--55 percent
Toba loam, 0 to 2 percent slopes--15 percent
Benin silty clay loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Wendane silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Idway sandy loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Toba fine sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Hulderman--Landform: Flood plains
Toba--Landform: Flood plains
Benin--Landform: Lake plains
Inclusion 1--Landform: Stream terraces
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Flood plains

Major Component Description

Hulderman Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Toba Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Benin Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Hulderman: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Toba: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Benin: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Alkali sacaton, bluegrass, mat muhly

Ecological Site

Hulderman: 028BY031NV
Toba: 028BY031NV
Benin: 028BY020NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY028NV
Inclusion 3: 028BY100NV

1390--Wendane-Mysol-Toba association

Composition

Major Components

Wendane silt loam, 0 to 2 percent slopes--45 percent
Mysol silty clay loam, 0 to 2 percent slopes--25 percent
Toba loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Aquic Natrargids, fine-loamy, mixed, mesic silt loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Aquic Natrargids, fine-loamy over sandy or sandy-skeletal, mixed, mesic silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Toba fine sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Wendane--Landform: Lake terraces
Mysol--Landform: Alluvial flats
Toba--Landform: Flood plains
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Lake terraces
Inclusion 3--Landform: Flood plains

Major Component Description

Wendane Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Mysol Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from mixed rocks

Toba Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Mysol: Bottlebrush squirreltail, shadscale
Toba: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Alkali sacaton, bluegrass, mat muhly

Ecological Site

Wendane: 028BY004NV
Mysol: 028BY073NV
Toba: 028BY031NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY028NV
Inclusion 3: 028BY100NV

1410--Threesee-Tosser association

Composition

Major Components
Threesee gravelly loam, 2 to 8 percent slopes--65 percent
Tosser very gravelly sandy loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Okan gravelly sandy loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Pyrat gravelly sandy loam, 2 to 4 percent slopes--4 percent
Inclusion 3: Heist gravelly sandy loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Kunzler silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Threesee--Landform: Barrier beaches
Tosser--Landform: Spits
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Lagoons
Inclusion 4--Landform: Fan skirts

Major Component Description

Threesee Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Tosser Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 70 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Tosser: Indian ricegrass, black sagebrush, needleandthread
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, winterfat
Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Threesee: 028BY010NV
Tosser: 028BY016NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY084NV
Inclusion 4: 028BY028NV

1411--Threesee-Linoyer-Okan association

Composition

Major Components
Threesee very gravelly sandy loam, 2 to 4 percent slopes--45 percent
Linoyer gravelly fine sandy loam, 2 to 4 percent slopes--25 percent
Okan sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Kunzler silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Linoyer silt loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Threesee very gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Tosser very gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Threesee--Landform: Barrier beaches
Linoyer--Landform: Fan aprons
Okan--Landform: Fan aprons
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Fan aprons
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Spits

Major Component Description

Threesee Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Linoyer Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Okan Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Linoyer: Indian ricegrass, winterfat
Okan: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Inclusion 2: Indian ricegrass, winterfat
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 4: Indian ricegrass, black sagebrush, needleandthread

Ecological Site

Threesee: 028BY010NV
Linoyer: 028BY084NV
Okan: 028BY010NV
Inclusion 1: 028BY056NV
Inclusion 2: 028BY013NV
Inclusion 3: 028BY052NV
Inclusion 4: 028BY016NV

1412--Threesee-Idway association

Composition

Major Components

Threesee very gravelly sandy loam, 2 to 4 percent slopes--60 percent
Idway loamy sand, 2 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Xerollic Calciorthids, sandy-skeletal, mixed, mesic very gravelly sandy loam, 2 to 8 percent slopes--9 percent
Inclusion 2: Katelana silt loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Kawich fine sand, 4 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Threesee--Landform: Spits
Idway--Landform: Barrier beaches
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Lagoons
Inclusion 3--Landform: Dunes

Major Component Description

Threesee Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Idway Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Loamy sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Idway: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, spiny hopsage
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass

Ecological Site

Threesee: 028BY010NV
Idway: 028BY028NV
Inclusion 1: 028BY052NV
Inclusion 2: 028BY074NV
Inclusion 3: 028BY021NV

1413--Idway-Zorravista-Kunzler association

Composition

Major Components

Idway sandy loam, 2 to 4 percent slopes--35 percent
Zorravista loamy fine sand, 2 to 15 percent slopes--30 percent
Kunzler silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Sycomat silt loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Sheffit silty clay loam, 0 to 2 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Idway--Landform: Barrier beaches
Zorravista--Landform: Dunes

Kunzler--Landform: Barrier beaches
Inclusion 1--Landform: Lagoons
Inclusion 2--Landform: Lagoons

Major Component Description

Idway Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zorravista Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 115 days
Surface layer texture: Loamy fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian material

Kunzler Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Dominant Present Vegetation

Idway: Basin wildrye, big sagebrush, black greasewood
Zorravista: Indian ricegrass, big sagebrush, thickspike wheatgrass
Kunzler: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Idway: 028BY028NV
Zorravista: 028BY068NV
Kunzler: 028BY028NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY028NV

1414--Threesee-Shantown-Kunzler association

Composition

Major Components
Threesee very gravelly sandy loam, 0 to 4 percent slopes--35 percent
Shantown gravelly loamy sand, 0 to 2 percent slopes--30 percent
Kunzler loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Durixerollic Camborthids, fine-loamy, mixed, mesic loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: James Canyon loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Threesee--Landform: Barrier beaches
Shantown--Landform: Barrier beaches
Kunzler--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Alluvial flats
Inclusion 3--Landform: Flood plains

Major Component Description

Threesee Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Shantown Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Kunzler Series
Elevation: 5,600 to 6,300 feet
Precipitation: About 8 inches

Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Dominant Present Vegetation

Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Shantown: Indian ricegrass, Wyoming big sagebrush, needleandthread
Kunzler: Basin wildrye, big sagebrush, black greasewood
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 3: Alkali sacaton, bluegrass, mat muhly

Ecological Site

Threesee: 028BY010NV
Shantown: 028BY010NV
Kunzler: 028BY028NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY004NV
Inclusion 3: 028BY100NV

1430--Pookaloo-Tecomar-Rock outcrop association

Composition

Major Components

Pookaloo very gravelly loam, 15 to 50 percent slopes--40 percent
Tecomar extremely gravelly loam, 15 to 50 percent slopes--30 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Hyzen extremely stony loam, 15 to 50 percent slopes--6 percent
Inclusion 2: Halacan very gravelly loam, 15 to 50 percent slopes--6 percent
Inclusion 3: Onkeyo very gravelly silt loam, 15 to 50 percent slopes--2 percent
Inclusion 4: Aridic Haploxerolls, loamy-skeletal, mixed, mesic very gravelly loam, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Pookaloo--Landform: Mountains; geomorphic position: summit
Tecomar--Landform: Mountains; geomorphic position: summit
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Mountains; position on slope: upper
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 4--Landform: Mountains

Major Component Description

Pookaloo Series

Elevation: 5,800 to 8,300 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series

Elevation: 5,800 to 8,300 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 5,800 to 8,300 feet

Dominant Present Vegetation

Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Rock outcrop: None
Inclusion 1: Indian ricegrass, black sagebrush, littleleaf mountainmahogany
Inclusion 2: Black sagebrush, bluebunch wheatgrass
Inclusion 3: Indian ricegrass, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Pookaloo: 028BY060NV
Tecomar: 028BY008NV
Rock outcrop: None
Inclusion 1: 028BY066NV
Inclusion 2: 028BY048NV
Inclusion 3: 028BY079NV
Inclusion 4: 028BY007NV

1440--Boofuss-Equis association

Composition

Major Components

Boofuss silty clay, 0 to 2 percent slopes--35 percent
Boofuss silty clay, dry, 0 to 2 percent slopes--30 percent
Equis silty clay, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silt loam, 2 to 4 percent slopes--10 percent
Inclusion 2: Equis silty clay, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Boofuss--Landform: Alluvial flats
Boofuss--Landform: Alluvial flats
Equis--Landform: Alluvial flats
Inclusion 1--Landform: Alluvial flats
Inclusion 2--Landform: Alluvial flats

Major Component Description

Boofuss Series

Elevation: 5,800 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Boofuss Series

Elevation: 5,800 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Equis Series

Elevation: 5,800 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Boofuss: Basin wildrye, black greasewood, inland saltgrass
Boofuss: Alkali sacaton, black greasewood, inland saltgrass
Equis: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Boofuss: 028BY069NV
Boofuss: 028BY020NV
Equis: 028BY002NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY004NV

1441--Boofuss-Wendane-Umberland association

Composition

Major Components

Boofuss silty clay, 0 to 2 percent slopes--40 percent
Wendane silt loam, 0 to 4 percent slopes--35 percent
Umberland silty clay, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Playas silty clay, 0 to 1 percent slopes--5 percent
Inclusion 2: Umberland silty clay, 0 to 1 percent slopes--4 percent
Inclusion 3: Typic Torriorthents, fine, montmorillonitic (calcareous), mesic silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Boofuss--Landform: Lake plains
Wendane--Landform: Lake terraces
Umberland--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Inclusion 3--Landform: Lake plains

Major Component Description

Boofuss Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Wendane Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Umberland Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Boofuss: Alkali cordgrass, alkali sacaton, inland saltgrass
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Umberland: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: None
Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 3: Inland saltgrass, iodinebush

Ecological Site

Boofuss: 028BY002NV
Wendane: 028BY004NV
Umberland: 028BY020NV
Inclusion 1: None
Inclusion 2: 028BY020NV
Inclusion 3: 028AY009NV

1450--Piltdown-Kawich association

Composition

Major Components
Piltdown fine sandy loam, 2 to 8 percent slopes--70 percent
Kawich fine sand, 4 to 15 percent slopes--15 percent
Contrasting Inclusions
Inclusion 1: Xerollic Natrargids, fine-loamy, mixed, mesic fine sandy loam, 0 to 2 percent slopes--7 percent
Inclusion 2: Xerollic Natrargids, fine-loamy, mixed, mesic fine sandy loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic fine sandy loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Dune land fine sand, 8 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Piltdown--Landform: Fan skirts
Kawich--Landform: Dunes
Inclusion 1--Landform: Basin floors
Inclusion 2--Landform: Basin floors
Inclusion 3--Landform: Basin floors
Inclusion 4--Landform: Dunes

Major Component Description

Piltdown Series
Elevation: 5,700 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Kawich Series
Elevation: 5,700 to 6,100 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Piltdown: Indian ricegrass, fourwing saltbush, winterfat
Kawich: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 1: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail

Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
Inclusion 3: Basin wildrye, big sagebrush, black greasewood
Inclusion 4: None

Ecological Site

Piltdown: 029XY012NV
Kawich: 028BY021NV
Inclusion 1: 028BY056NV
Inclusion 2: 028BY011NV
Inclusion 3: 028BY028NV
Inclusion 4: None

1460--Tosser-Threesee association

Composition

Major Components

Tosser very gravelly sandy loam, 2 to 8 percent slopes--65 percent
Threesee gravelly loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Katelana silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Xerollic Camborthids, fine-loamy over sandy or sandy-skeletal, mixed, mesic silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Durixerollic Camborthids, coarse-loamy, mixed, mesic gravelly loamy sand, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Tosser--Landform: Longshore bars (relict)
Threesee--Landform: Longshore bars (relict); shape of slope: concave
Inclusion 1--Landform: Lagoons
Inclusion 2--Landform: Lagoons
Inclusion 3--Landform: Longshore bars (relict)

Major Component Description

Tosser Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface rock fragments: 70 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Threesee Series

Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tosser: Indian ricegrass, black sagebrush, needleandthread
Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Bottlebrush squirreltail, shadscale
Inclusion 2: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Tosser: 028BY016NV
Threesee: 028BY010NV
Inclusion 1: 028BY073NV
Inclusion 2: 028BY056NV
Inclusion 3: 028BY010NV

1471--Timpie-Kunzler-Threesee association

Composition

Major Components

Timpie silt loam, 0 to 2 percent slopes--35 percent
Kunzler silt loam, 0 to 2 percent slopes--30 percent
Threesee very gravelly sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Zerk very gravelly sandy loam, 2 to 8 percent slopes--8 percent
Inclusion 2: Blimo silt loam, 0 to 2 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Timpie--Landform: Barrier beaches
Kunzler--Landform: Barrier beaches
Threesee--Landform: Spits
Inclusion 1--Landform: Spits
Inclusion 2--Landform: Lagoons

Major Component Description

Timpie Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 49 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kunzler Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from sedimentary rocks

Threesee Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Timpie: Indian ricegrass, winterfat
Kunzler: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
Threesee: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 1: Indian ricegrass, winterfat
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, wheatgrass

Ecological Site

Timpie: 028BY084NV
Kunzler: 028BY056NV
Threesee: 028BY010NV
Inclusion 1: 028BY084NV
Inclusion 2: 028BY014NV

1480--Tulase-Linoyer association

Composition

Major Components
Tulase silt loam, 2 to 4 percent slopes--60 percent
Linoyer silt loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions
Inclusion 1: Shabliss gravelly silt loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Toano silt loam, 2 to 4 percent slopes--4 percent
Inclusion 3: Palinor gravelly loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Okan gravelly sandy loam, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Tulase--Landform: Fan skirts
Linoyer--Landform: Fan skirts
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Fan skirts

Major Component Description

Tulase Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Linoyer Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tulase: Indian ricegrass, Wyoming big sagebrush, basin wildrye, winterfat
Linoyer: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, spiny hopsage

Ecological Site

Tulase: 028BY045NV
Linoyer: 028BY013NV
Inclusion 1: 028BY080NV
Inclusion 2: 028BY065NV
Inclusion 3: 028BY011NV
Inclusion 4: 028BY052NV

1500--Tooele-Loray association

Composition

Major Components

Tooele sandy loam, 2 to 4 percent slopes--70 percent
Loray gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Haplargids, fine-loamy, mixed, mesic silt loam, 2 to 4 percent slopes--6 percent
Inclusion 2: Kawich fine sand, 4 to 15 percent slopes--4 percent
Inclusion 3: Saltair silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Tooele--Landform: Lake terraces
Loray--Landform: Barrier beaches
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Dunes
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Drainageways

Major Component Description

Tooele Series

Elevation: 4,300 to 4,500 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Loray Series

Elevation: 4,300 to 4,500 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Tooele: Black greasewood, bottlebrush squirreltail, shadscale
Loray: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 1: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 2: Indian ricegrass, black greasewood, shadscale, thickspike wheatgrass
Inclusion 3: Inland saltgrass, iodinebush
Inclusion 4: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Tooele: 028BY074NV
Loray: 028AY012NV
Inclusion 1: 028BY074NV
Inclusion 2: 028BY021NV
Inclusion 3: 028AY009NV
Inclusion 4: 028AY037NV

1510--Izamatch-Cliffdown association

Composition

Major Components

Izamatch gravelly sandy loam, 2 to 4 percent slopes--45 percent
Cliffdown very gravelly sandy loam, 2 to 4 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Vitrandic Camborthids, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, mesic extremely gravelly sand, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Izamatch--Landform: Barrier beaches; position on slope: upper
Cliffdown--Landform: Barrier beaches; position on slope: lower
Inclusion 1--Landform: Fan aprons

Inclusion 2--Landform: Barrier beaches; position on slope: lower
Inclusion 3--Landform: Drainageways

Major Component Description

Izamatch Series
Elevation: 4,200 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Cliffdown Series
Elevation: 4,200 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Izamatch: Indian ricegrass, galleta, shadscale
Cliffdown: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 1: Indian ricegrass, galleta, horsebrush, shadscale
Inclusion 2: Black greasewood, bottlebrush squirreltail, shadscale
Inclusion 3: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Izamatch: 028AY018NV
Cliffdown: 028AY012NV
Inclusion 1: 028AY014NV
Inclusion 2: 028BY074NV
Inclusion 3: 028AY037NV

1520--Izamatch-Luning association

Composition

Major Components
Izamatch gravelly sandy loam, 2 to 4 percent slopes--35 percent
Izamatch gravelly sandy loam, 4 to 8 percent slopes--30 percent
Luning loamy sand, 4 to 8 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Armespan very gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sand, 0 to 2 percent slopes--4 percent
Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Loray very gravelly sandy loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Intermontane basins
Izamatch--Landform: Barrier beaches
Izamatch--Landform: Fan aprons
Luning--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Barrier beaches; position on slope: lower

Major Component Description

Izamatch Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Izamatch Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Luning Series
Elevation: 4,400 to 5,200 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent gravel

Surface layer texture: Loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Izamatch: Indian ricegrass, galleta, shadscale
Izamatch: Indian ricegrass, galleta, horsebrush, shadscale
Luning: Indian ricegrass, galleta, horsebrush, shadscale
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 3: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 4: Indian ricegrass, bud sagebrush, galleta, shadscale

Ecological Site

Izamatch: 028AY018NV
Izamatch: 028AY014NV
Luning: 028AY014NV
Inclusion 1: 028AY004NV
Inclusion 2: 028AY037NV
Inclusion 3: 028AY006NV
Inclusion 4: 028AY003NV

1521--Izamatch-Theriot association

Composition

Major Components

Izamatch gravelly sandy loam, moist, 2 to 8 percent slopes--40 percent
Izamatch gravelly sandy loam, 2 to 8 percent slopes--25 percent
Theriot extremely stony loam, 8 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Kyler very gravelly loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic extremely gravelly coarse sand, 2 to 8 percent slopes--3 percent
Inclusion 3: Gravier gravelly sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Armespan very gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Izamatch--Landform: Barrier beaches
Izamatch--Landform: Fan aprons
Theriot--Landform: Hills
Inclusion 1--Landform: Hills
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Barrier beaches; position on slope: upper

Major Component Description

Izamatch Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Izamatch Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Theriot Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 25 percent cobbles; 50 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Izamatch: Indian ricegrass, galleta, shadscale
Izamatch: Indian ricegrass, galleta, horsebrush, shadscale
Theriot: Indian ricegrass, black sagebrush, horsebrush, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, fourwing saltbush, spiny hopsage

Inclusion 3: Indian ricegrass, galleta, winterfat
Inclusion 4: Indian ricegrass, black sagebrush, galleta, needleandthread

Ecological Site

Izamatch: 028AY018NV
Izamatch: 028AY014NV
Theriot: 028AY044NV
Inclusion 1: 028AY004NV
Inclusion 2: 028AY037NV
Inclusion 3: 028AY002NV
Inclusion 4: 028AY004NV

1522--Izamatch-Smaug-Badland association

Composition

Major Components

Izamatch gravelly sandy loam, 2 to 4 percent slopes--40 percent
Smaug fine sandy loam, 2 to 4 percent slopes--30 percent
Badland variable, 4 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, sandy-skeletal, mixed, mesic extremely gravelly coarse sand, 2 to 8 percent slopes--5 percent
Inclusion 2: Gravier gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Luning gravelly loamy sand, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Izamatch--Landform: Barrier beaches
Smaug--Landform: Lake terraces
Badland--Landform: Fan remnants
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Barrier beaches

Major Component Description

Izamatch Series

Elevation: 4,500 to 4,900 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Smaug Series

Elevation: 4,500 to 4,900 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Badland Miscellaneous Area

Elevation: 4,500 to 4,900 feet
Surface layer texture: Variable
Drainage class: Well drained

Dominant Present Vegetation

Izamatch: Indian ricegrass, galleta, shadscale
Smaug: Indian ricegrass, galleta, winterfat
Badland: None
Inclusion 1: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 2: Indian ricegrass, galleta, winterfat
Inclusion 3: Indian ricegrass, galleta, horsebrush, shadscale

Ecological Site

Izamatch: 028AY018NV
Smaug: 028AY002NV
Badland: None
Inclusion 1: 028AY037NV
Inclusion 2: 028AY002NV
Inclusion 3: 028AY014NV

1530--Theriot-Izamatch association

Composition

Major Components

Theriot extremely stony loam, 8 to 30 percent slopes--40 percent
Theriot very gravelly silt loam, 8 to 30 percent slopes--25 percent
Izamatch very gravelly sandy loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--7 percent
Inclusion 2: Kyler very gravelly loam, 8 to 30 percent slopes--6 percent
Inclusion 3: Gravier gravelly loam, 2 to 4 percent slopes--1 percent
Inclusion 4: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Theriot--Landform: Hills
Theriot--Landform: Hills
Izamatch--Landform: Barrier beaches
Inclusion 1--Landform: Hills; geomorphic position: summit
Inclusion 2--Landform: Hills; geomorphic position: backslope
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Drainageways

Major Component Description

Theriot Series
Elevation: 4,400 to 5,600 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Theriot Series
Elevation: 4,400 to 5,600 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Izamatch Series
Elevation: 4,400 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Theriot: Indian ricegrass, black sagebrush, horsebrush, needleandthread
Theriot: Indian ricegrass, bud sagebrush, galleta, shadscale
Izamatch: Indian ricegrass, galleta, shadscale
Inclusion 1: None
Inclusion 2: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 3: Indian ricegrass, galleta, winterfat
Inclusion 4: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Theriot: 028AY044NV
Theriot: 028AY003NV
Izamatch: 028AY018NV
Inclusion 1: None
Inclusion 2: 028AY004NV
Inclusion 3: 028AY002NV
Inclusion 4: 028AY037NV

1531--Theriot-Izamatch-Rock outcrop association

Composition

Major Components
Theriot extremely stony loam, 15 to 50 percent slopes--50 percent
Izamatch very cobbly fine sandy loam, 8 to 30 percent slopes--20 percent
Rock outcrop--15 percent

Contrasting Inclusions
Inclusion 1: Theriot extremely stony loam, 2 to 15 percent slopes--5 percent
Inclusion 2: Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic extremely stony loam, 15 to 50 percent slopes--6 percent
Inclusion 3: Gravier very gravelly sandy loam, 2 to 15 percent slopes--3 percent
Inclusion 4: Badland, 4 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Theriot--Landform: Hills
Izamatch--Landform: Spits
Rock outcrop--Landform: Hills
Inclusion 1--Landform: Hills
Inclusion 2--Landform: Hills; geomorphic position: summit
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Lake terraces

Major Component Description

Theriot Series
Elevation: 4,500 to 6,100 feet

Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 25 percent cobbles; 50 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Izamatch Series
Elevation: 4,500 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 20 percent cobbles; 50 percent gravel
Surface layer texture: Very cobbly fine sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Rock outcrop Miscellaneous Area
Elevation: 4,500 to 6,100 feet

Dominant Present Vegetation

Theriot: Indian ricegrass, black sagebrush, horsebrush, needleandthread
Izamatch: Indian ricegrass, bud sagebrush, galleta, shadscale
Rock outcrop: None
Inclusion 1: Indian ricegrass, black sagebrush, horsebrush, needleandthread
Inclusion 2: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 3: Indian ricegrass, shadscale
Inclusion 4: None

Ecological Site

Theriot: 028AY044NV
Izamatch: 028AY003NV
Rock outcrop: None
Inclusion 1: 028AY044NV
Inclusion 2: 028AY003NV
Inclusion 3: 028BY018NV
Inclusion 4: None

1532--Theriot-Rock outcrop association

Composition

Major Components
Theriot cobbly fine sandy loam, 15 to 50 percent slopes--40 percent
Theriot extremely stony loam, 15 to 50 percent slopes--30 percent
Rock outcrop--15 percent

Contrasting Inclusions
Inclusion 1: Kyler cobbly loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Izamatch gravelly sandy loam, 4 to 15 percent slopes--5 percent
Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, mesic extremely gravelly coarse sand, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Theriot--Landform: Hills
Theriot--Landform: Hills
Rock outcrop--Landform: Hills
Inclusion 1--Landform: Hills; position on slope: upper
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Drainageways

Major Component Description

Theriot Series
Elevation: 4,400 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 25 percent cobbles; 50 percent gravel
Surface layer texture: Cobbly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Theriot Series
Elevation: 4,400 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area
Elevation: 4,400 to 5,800 feet

Dominant Present Vegetation

Theriot: Indian ricegrass, black sagebrush
Theriot: Indian ricegrass, black sagebrush, horsebrush, needleandthread
Rock outcrop: None

Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, galleta, shadscale
Inclusion 3: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Theriot: 028AY044NV
Theriot: 028AY044NV
Rock outcrop: None
Inclusion 1: 028AY004NV
Inclusion 2: 028AY018NV
Inclusion 3: 028AY037NV

1540--Amtoft-Kyler association

Composition

Major Components

Kyler very gravelly loam, 8 to 30 percent slopes--35 percent
Amtoft very gravelly loam, 15 to 50 percent slopes--30 percent
Amtoft gravelly silt loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Eaglepass very gravelly sandy loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Rock outcrop--4 percent
Inclusion 3: Xeric Torriorthents gravelly sandy loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Xeric Torriorthents very gravelly coarse sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Kyler--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Amtoft--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Amtoft--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 1--Landform: Mountains; geomorphic position: backslope
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Drainageways

Major Component Description

Kyler Series

Elevation: 5,000 to 6,200 feet
Precipitation: About 10 inches
Air temperature: About 47 degrees
Frost-free season: About 125 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Amtoft Series

Elevation: 6,200 to 6,700 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Amtoft Series

Elevation: 6,200 to 6,700 feet
Precipitation: About 10 inches
Air temperature: About 47 degrees
Frost-free season: About 125 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Kyler: Indian ricegrass, Utah juniper, black sagebrush, galleta
Amtoft: Indian ricegrass, black sagebrush, galleta, needleandthread
Amtoft: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Inclusion 1: Scribner needlegrass, black sagebrush, galleta, littleleaf mountainmahogany
Inclusion 2: None
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Indian ricegrass, Nevada ephedra, big sagebrush, rubber rabbitbrush

Ecological Site

Kyler: 028AY004NV
Amtoft: 028AY027NV
Amtoft: 028AY034NV
Inclusion 1: 028AY029NV
Inclusion 2: None

Inclusion 3: 028AY028NV
Inclusion 4: 028AY038NV

1541--Kyler-Rock outcrop association

Composition

Major Components

Kyler very gravelly loam, 15 to 50 percent slopes--45 percent
Kyler very gravelly loam, 4 to 15 percent slopes--30 percent
Rock outcrop--10 percent

Contrasting Inclusions

Inclusion 1: Jericho very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Xeric Torriorthents very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Armespan very gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Typic Torriorthents, sandy-skeletal, carbonatic, mesic extremely gravelly coarse sand, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills
Kyler--Landform: Hills
Kyler--Landform: Hills
Rock outcrop--Landform: Hills
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Drainageways

Major Component Description

Kyler Series

Elevation: 5,100 to 6,100 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Kyler Series

Elevation: 5,100 to 6,100 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 5,100 to 6,100 feet

Dominant Present Vegetation

Kyler: Indian ricegrass, black sagebrush, galleta, needleandthread
Kyler: Indian ricegrass, black sagebrush, galleta, needleandthread
Rock outcrop: None
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 3: Indian ricegrass, black sagebrush, needleandthread, spiny hopsage
Inclusion 4: Indian ricegrass, fourwing saltbush, spiny hopsage

Ecological Site

Kyler: 028AY004NV
Kyler: 028AY004NV
Rock outcrop: None
Inclusion 1: 028AY004NV
Inclusion 2: 028AY028NV
Inclusion 3: 028AY047NV
Inclusion 4: 028AY037NV

1542--Kyler-Amtoft-Jericho association

Composition

Major Components

Kyler very gravelly loam, 8 to 30 percent slopes--40 percent
Amtoft very gravelly loam, 8 to 30 percent slopes--25 percent
Jericho very gravelly loam, 2 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xerollic Haplargids, fine, montmorillonitic, mesic gravelly loam, 8 to 30 percent slopes--9 percent
Inclusion 2: Rock outcrop--3 percent
Inclusion 3: Xeric Torriorthents extremely gravelly coarse sand, 0 to 4 percent slopes--2 percent
Inclusion 4: Xerollic Durorthids, loamy-skeletal,

carbonatic, mesic very gravelly loam, 2 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Kyler--Landform: Hills; aspect: south
Amtoft--Landform: Hills; geomorphic position: backslope; aspect: north
Jericho--Landform: Fan remnants
Inclusion 1--Landform: Hills
Inclusion 2--Landform: Hills; geomorphic position: summit
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Fan remnants

Major Component Description

Kyler Series
Elevation: 5,600 to 7,000 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Amtoft Series
Elevation: 5,600 to 7,000 feet
Precipitation: About 10 inches
Air temperature: About 47 degrees
Frost-free season: About 125 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Jericho Series
Elevation: 5,600 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kyler: Indian ricegrass, black sagebrush, galleta, needleandthread
Amtoft: Indian ricegrass, Utah juniper, black sagebrush, galleta
Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: None
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Indian ricegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

Kyler: 028AY004NV
Amtoft: 028AY027NV
Jericho: 028AY013NV
Inclusion 1: 028AY004NV
Inclusion 2: None
Inclusion 3: 028AY028NV
Inclusion 4: 028AY043NV

1550--Jericho association

Composition

Major Components
Jericho very gravelly loam, 4 to 15 percent slopes--50 percent
Jericho very gravelly loam, 15 to 50 percent slopes--35 percent

Contrasting Inclusions
Inclusion 1: Xerollic Calciorthids, loamy-skeletal, carbonatic, mesic very gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Xerollic Calciorthids, loamy-skeletal, carbonatic, mesic gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Xerollic Durorthids, loamy-skeletal, carbonatic, mesic very gravelly sandy loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Xerollic Durorthids, loamy-skeletal, carbonatic, mesic very gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Jericho--Landform: Fan remnants
Jericho--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope; aspect: north
Inclusion 2--Landform: Fan remnants; geomorphic

position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope
Inclusion 4--Landform: Fan remnants

Major Component Description

Jericho Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Jericho Series
Elevation: 5,600 to 6,400 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, needleandthread
Inclusion 3: Indian ricegrass, Utah juniper, black sagebrush, galleta
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage

Ecological Site

Jericho: 028AY013NV
Jericho: 028AY004NV
Inclusion 1: 028AY034NV
Inclusion 2: 028AY015NV
Inclusion 3: 028AY027NV
Inclusion 4: 028AY028NV

1560--Toano-Timpie association

Composition

Major Components
Toano very fine sandy loam, 0 to 2 percent slopes--65 percent
Timpie very fine sandy loam, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
Inclusion 1: Typic Torripsamments, mixed, mesic loamy fine sand, 2 to 4 percent slopes--7 percent
Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic gravelly sandy loam, 2 to 4 percent slopes--2 percent
Inclusion 3: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly sandy loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Toano--Landform: Inset fans
Timpie--Landform: Inset fans
Inclusion 1--Landform: Fan aprons
Inclusion 2--Landform: Fan aprons
Inclusion 3--Landform: Inset fans

Major Component Description

Toano Series
Elevation: 5,300 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 115 days
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Timpie Series
Elevation: 5,300 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 49 degrees
Frost-free season: About 130 days
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Toano: Indian ricegrass, winterfat
Timpie: Indian ricegrass, sickle saltbush, western wheatgrass
Inclusion 1: Indian ricegrass, fourwing saltbush, needleandthread, winterfat
Inclusion 2: Indian ricegrass, galleta, shadscale
Inclusion 3: Indian ricegrass, black greasewood, spiny hopsage

Ecological Site

Toano: 028AY030NV

Timpie: 028AY033NV
Inclusion 1: 028AY019NV
Inclusion 2: 028AY018NV
Inclusion 3: 028AY032NV

1570--Jericho-Xeric Torriorthents association

Composition

Major Components

Jericho very gravelly loam, 2 to 8 percent slopes--50 percent
Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Armespan very gravelly sandy loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Lithic Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic gravelly sandy loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Xeric Torriorthents gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Xerollic Durorthids, loamy, mixed, mesic, shallow gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Jericho--Landform: Fan remnants
Xeric Torriorthents--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Pediments
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Fan remnants

Major Component Description

Jericho Series

Elevation: 5,300 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Xeric Torriorthents Miscellaneous Area

Elevation: 5,300 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 45 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Xeric Torriorthents: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Indian ricegrass, needleandthread, pigmy sagebrush

Ecological Site

Jericho: 028AY004NV
Xeric Torriorthents: 028BY041NV
Inclusion 1: 028AY004NV
Inclusion 2: 028AY004NV
Inclusion 3: 028AY028NV
Inclusion 4: 028AY007NV

1580--Armespan-Jericho association

Composition

Major Components

Armespan very gravelly sandy loam, 2 to 8 percent slopes--55 percent
Jericho very gravelly loam, 2 to 8 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Izamatch gravelly sandy loam, 2 to 4 percent slopes--7 percent
Inclusion 2: Xeric Torriorthents gravelly loamy sand, 2 to 8 percent slopes--3 percent
Inclusion 3: Xeric Torriorthents very gravelly coarse sand, 2 to 8 percent slopes--3 percent
Inclusion 4: Durixerollic Calciorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Armespan--Landform: Fan remnants

Jericho--Landform: Fan remnants
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower

Major Component Description

Armespan Series
Elevation: 5,200 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Jericho Series
Elevation: 5,200 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Jericho: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 1: Indian ricegrass, galleta, shadscale
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 3: Indian ricegrass, Nevada ephedra, big sagebrush, rubber rabbitbrush
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, galleta, needleandthread

Ecological Site

Armespan: 028AY004NV
Jericho: 028AY004NV
Inclusion 1: 028AY018NV
Inclusion 2: 028AY028NV
Inclusion 3: 028AY038NV
Inclusion 4: 028AY015NV

1581--Armespan-Kyler-Heist association

Composition

Major Components
Armespan very gravelly sandy loam, 2 to 8 percent slopes--45 percent
Kyler very gravelly loam, 8 to 30 percent slopes--25 percent
Heist fine sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Amtoft very gravelly loam, 8 to 30 percent slopes--7 percent
Inclusion 2: Durixerollic Calciorthids, coarse-loamy, mixed, mesic loam, 2 to 4 percent slopes--6 percent
Inclusion 3: Durixerollic Calciorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--1 percent
Inclusion 4: Xeric Torriorthents gravelly sandy loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
Armespan--Landform: Fan remnants
Kyler--Landform: Hills; geomorphic position: backslope
Heist--Landform: Drainageways
Inclusion 1--Landform: Hills; geomorphic position: backslope
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Inset fans

Major Component Description

Armespan Series
Elevation: 5,200 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Kyler Series
Elevation: 5,800 to 6,200 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Heist Series
Elevation: 5,200 to 6,200 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 35 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Kyler: Indian ricegrass, black sagebrush, galleta, needleandthread
Heist: Indian ricegrass, winterfat
Inclusion 1: Indian ricegrass, Utah juniper, black sagebrush, galleta
Inclusion 2: Indian ricegrass, black sagebrush, needleandthread, spiny hopsage
Inclusion 3: Indian ricegrass, needleandthread, pigmy sagebrush
Inclusion 4: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage

Ecological Site

Armespan: 028AY004NV
Kyler: 028AY004NV
Heist: 028BY084NV
Inclusion 1: 028AY027NV
Inclusion 2: 028AY047NV
Inclusion 3: 028AY007NV
Inclusion 4: 028AY028NV

1582--Armespan-Xeric Torriorthents association

Composition

Major Components
Armespan very gravelly sandy loam, 2 to 8 percent slopes--50 percent
Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Armespan gravelly loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Lithic Xeric Torriorthents, coarse-loamy, mixed, nonacid, mesic gravelly loam, 4 to 15 percent slopes--4 percent
Inclusion 3: Xerollic Calciorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Xeric Torriorthents gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Armespan--Landform: Fan remnants
Xeric Torriorthents--Landform: Fan remnants; geomorphic position: backslope
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
Inclusion 2--Landform: Pediments
Inclusion 3--Landform: Inset fans
Inclusion 4--Landform: Fan remnants

Major Component Description

Armespan Series
Elevation: 5,300 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Xeric Torriorthents Series
Elevation: 5,300 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 45 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Xeric Torriorthents: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, black sagebrush, galleta, needleandthread

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 4: Indian ricegrass, Utah juniper, black sagebrush

Ecological Site

Armespan: 028AY004NV
Xeric Torriorthents: 028BY041NV
Inclusion 1: 028AY004NV
Inclusion 2: 028AY004NV
Inclusion 3: 028AY028NV
Inclusion 4: 028AY041NV

1590--Luning-Loray association

Composition

Major Components

Luning gravelly sandy loam, 2 to 8 percent slopes--45 percent
Luning gravelly loamy sand, 2 to 8 percent slopes--25 percent
Loray gravelly loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents extremely gravelly coarse sandy loam, 8 to 30 percent slopes--5 percent
Inclusion 2: Izamatch very gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, mesic extremely gravelly coarse sand, 2 to 8 percent slopes--3 percent
Inclusion 4: Toano silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Luning--Landform: Barrier beaches
Luning--Landform: Barrier beaches
Loray--Landform: Barrier beaches
Inclusion 1--Landform: Barrier beaches
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Inset fans

Major Component Description

Luning Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Luning Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Loray Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Luning: Indian ricegrass, galleta, shadscale
Luning: Indian ricegrass, galleta, horsebrush, shadscale
Loray: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 1: Indian ricegrass, Utah juniper, black sagebrush
Inclusion 2: Indian ricegrass, galleta, shadscale
Inclusion 3: Indian ricegrass, fourwing saltbush, spiny hopsage
Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Luning: 028AY018NV
Luning: 028AY014NV
Loray: 028AY012NV
Inclusion 1: 028AY041NV
Inclusion 2: 028AY018NV
Inclusion 3: 028AY037NV
Inclusion 4: 028AY030NV

1591--Luning-Izamatch-Badland association

Composition

Major Components

Luning sandy loam, 2 to 4 percent slopes--35 percent
Izamatch very gravelly sandy loam, 2 to 8 percent slopes--30 percent
Badland variable, 4 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents very gravelly coarse sandy loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Loray gravelly sandy loam, 4 to 15 percent slopes--3 percent
Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Luning--Landform: Barrier beaches
Izamatch--Landform: Barrier beaches
Badland--Landform: Fan remnants
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Barrier beaches
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Hills

Major Component Description

Luning Series

Elevation: 4,400 to 5,200 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Izamatch Series

Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Badland Miscellaneous Area

Elevation: 4,400 to 5,200 feet
Surface layer texture: Variable
Drainage class: Well drained

Dominant Present Vegetation

Luning: Indian ricegrass, galleta, shadscale
Izamatch: Indian ricegrass, galleta, horsebrush, shadscale
Badland: None
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: Indian ricegrass, bud sagebrush, galleta, shadscale
Inclusion 3: Indian ricegrass, galleta, winterfat
Inclusion 4: None

Ecological Site

Luning: 028AY018NV
Izamatch: 028AY014NV
Badland: None
Inclusion 1: 028AY004NV
Inclusion 2: 028AY012NV
Inclusion 3: 028AY002NV
Inclusion 4: None

1600--Eaglepass-Amtoft association

Composition

Major Components

Eaglepass very gravelly sandy loam, 8 to 30 percent slopes--50 percent
Amtoft very gravelly loam, 15 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Kyler very gravelly loam, 8 to 30 percent slopes--7 percent
Inclusion 2: Rock outcrop--6 percent
Inclusion 3: Durorthidic Xeric Torriorthents, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Eaglepass--Landform: Mountains; shape of slope: convex
Amtoft--Landform: Mountains; geomorphic position: summit; position on slope: upper; shape of slope: convex
Inclusion 1--Landform: Mountains
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Drainageways

Major Component Description

Eaglepass Series
Elevation: 6,000 to 6,700 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 125 days
Surface rock fragments: 10 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Amtoft Series
Elevation: 6,000 to 6,700 feet
Precipitation: About 10 inches
Air temperature: About 47 degrees
Frost-free season: About 125 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Eaglepass: Scribner needlegrass, black sagebrush, galleta, littleleaf mountainmahogany
Amtoft: Indian ricegrass, black sagebrush, bluebunch wheatgrass, galleta
Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread
Inclusion 2: None
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage

Ecological Site

Eaglepass: 028AY029NV
Amtoft: 028AY034NV
Inclusion 1: 028AY004NV
Inclusion 2: None
Inclusion 3: 028AY028NV

1610--Xeric Torriorthents-Armespan-Badland association

Composition

Major Components
Xeric Torriorthents gravelly sandy loam, 8 to 30 percent slopes--45 percent
Armespan very gravelly sandy loam, 2 to 8 percent slopes--25 percent
Badland weathered bedrock, 8 to 75 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Xeric Torriorthents gravelly sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 2: Xeric Torripsamments, mixed, mesic loamy fine sand, 2 to 4 percent slopes--4 percent
Inclusion 3: Izamatch gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Typic Torripsamments, mixed, mesic loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Xeric Torriorthents--Landform: Fan remnants; geomorphic position: backslope
Armespan--Landform: Fan remnants; geomorphic position: summit
Badland--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Sand sheets
Inclusion 3--Landform: Barrier beaches
Inclusion 4--Landform: Drainageways

Major Component Description

Xeric Torriorthents Soils
Elevation: 5,500 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 45 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Armespan Series
Elevation: 5,500 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Badland Miscellaneous Area
Elevation: 5,500 to 6,000 feet
Surface layer texture: Weathered bedrock
Drainage class: Well drained

Dominant Present Vegetation

Xeric Torriorthents: Indian ricegrass, Utah juniper, black sagebrush
Armespan: Indian ricegrass, black sagebrush, galleta, needleandthread
Badland: None
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, spiny hopsage
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, fourwing saltbush, needleandthread
Inclusion 3: Indian ricegrass, galleta, horsebrush, shadscale
Inclusion 4: Indian ricegrass, black greasewood, spiny hopsage

Ecological Site

Xeric Torriorthents: 028BY041NV
Armespan: 028AY004NV
Badland: None
Inclusion 1: 028AY028NV
Inclusion 2: 028AY005NV
Inclusion 3: 028AY014NV
Inclusion 4: 028AY032NV

1620--Kolda-Duffer-Sonoma association

Composition

Major Components

Kolda silt loam, 0 to 1 percent slopes--55 percent
Duffer silt loam, 0 to 2 percent slopes--20 percent
Sonoma silty clay loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Umberland silty clay, 0 to 2 percent slopes--7 percent
Inclusion 2: Aeric Halaquepts, fine-silty, mixed (calcareous), mesic silty clay loam, 0 to 2 percent slopes--2 percent
Inclusion 3: Cumulic Endoaquolls, fine-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Kolda--Landform: Lake plains
Duffer--Landform: Lake plains
Sonoma--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains

Major Component Description

Kolda Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Duffer Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Sonoma Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Kolda: Cattail
Duffer: Alkali cordgrass, alkali sacaton, inland saltgrass
Sonoma: Bluejoint reedgrass
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Bluegrass, foxtail barley, inland saltgrass, rush, sedge
Inclusion 3: Bluegrass, rush, sedge

Ecological Site

Kolda: 028BY044NV
Duffer: 028BY002NV
Sonoma: 028BY099NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY098NV
Inclusion 3: 028BY001NV

1621--Kolda-Rubylake association

Composition

Major Components

Kolda silt loam, 0 to 1 percent slopes--40 percent
Rubylake clay loam, 0 to 2 percent slopes--30 percent
Kolda silt loam, wet, 0 to 1 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Playas silty clay, 0 to 1 percent slopes--5 percent
Inclusion 2: Umberland silty clay, 0 to 1 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Kolda--Landform: Lake plains
Rubylake--Landform: Lake terraces
Kolda--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains

Major Component Description

Kolda Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Rubylake Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Kolda Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Kolda: Cattail
Rubylake: Alkali cordgrass, alkali sacaton, inland saltgrass
Kolda: Cattail
Inclusion 1: None
Inclusion 2: Bluegrass, foxtail barley, inland saltgrass, rush, sedge

Ecological Site

Kolda: 028BY044NV
Rubylake: 028BY002NV
Kolda: 028BY044NV
Inclusion 1: None
Inclusion 2: 028BY098NV

1622--Kolda silt loam, 0 to 1 percent slopes

Composition

Major Components

Kolda silt loam, 0 to 1 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Rubylake silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Kolda--Landform: Lake plains
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Lake terraces

Major Component Description

Kolda Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Kolda: Cattail
Inclusion 1: Inland saltgrass, sedge, western wheatgrass
Inclusion 2: Alkali cordgrass, alkali sacaton

Ecological Site

Kolda: 028BY044NV
Inclusion 1: 028BY012NV
Inclusion 2: 028BY002NV

1623--Kolda-Water association

Composition

Major Components

Kolda silt loam, 0 to 1 percent slopes--75 percent
Water--15 percent

Contrasting Inclusions

Inclusion 1: Rubylake silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Kolda--Landform: Lake plains
Water--Landform: Depressions
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Lake terraces

Major Component Description

Kolda Series

Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Water Miscellaneous Area

Elevation: 6,000 to 6,100 feet

Dominant Present Vegetation

Kolda: Cattail
Water: None
Inclusion 1: Inland saltgrass, sedge, western wheatgrass
Inclusion 2: Alkali cordgrass, alkali sacaton, inland saltgrass

Ecological Site

Kolda: 028BY044NV
Water: None
Inclusion 1: 028BY012NV
Inclusion 2: 028BY002NV

1630--Pookaloo-Cavehill, cool-Rock outcrop association

Composition

Major Components

Pookaloo very gravelly loam, 15 to 50 percent slopes--40 percent
Cavehill very gravelly silt loam, cool, 15 to 50 percent slopes--30 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Haunchee very stony loam, 15 to 50 percent slopes--8 percent
Inclusion 2: Lithic Haploxerolls, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 50 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains
Pookaloo--Landform: Mountains; geomorphic position: backslope; aspect: south
Cavehill--Landform: Mountains; geomorphic position: backslope; aspect: north
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper
Inclusion 2--Landform: Mountains; geomorphic position: backslope

Major Component Description

Pookaloo Series

Elevation: 6,800 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Cavehill Series

Elevation: 6,800 to 8,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 6,800 to 8,200 feet

Dominant Present Vegetation

Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Cavehill: Utah juniper, Wyoming big sagebrush, bluebunch wheatgrass, singleleaf pinyon

Rock outcrop: None
Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 2: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

Ecological Site

Pookaloo: 028BY060NV
Cavehill: 028BY061NV
Rock outcrop: None
Inclusion 1: 025XY071NV
Inclusion 2: 028BY062NV

1631--Pookaloo-Tecomar-Wardbay association

Composition

Major Components

Pookaloo very gravelly loam, 15 to 50 percent slopes--35 percent
Tecomar extremely gravelly loam, 15 to 50 percent slopes--30 percent
Wardbay very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Cavehill very gravelly loam, 15 to 50 percent slopes--7 percent
Inclusion 2: Rock outcrop--5 percent
Inclusion 3: Pachic Haploxerolls, loamy-skeletal, mixed, frigid silt loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains and foothills
Pookaloo--Landform: Hills; geomorphic position: backslope; aspect: north
Tecomar--Landform: Hills; geomorphic position: backslope
Wardbay--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Major Component Description

Pookaloo Series

Elevation: 6,800 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Tecomar Series

Elevation: 6,800 to 7,600 feet
Precipitation: About 12 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent cobbles; 60 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Wardbay Series

Elevation: 6,800 to 7,600 feet
Precipitation: About 18 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Pookaloo: Utah juniper, black sagebrush, bluebunch wheatgrass, singleleaf pinyon
Tecomar: Indian ricegrass, black sagebrush, bluebunch wheatgrass
Wardbay: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon
Inclusion 2: None
Inclusion 3: Basin big sagebrush

Ecological Site

Pookaloo: 028BY060NV
Tecomar: 028BY008NV
Wardbay: 025XY012NV
Inclusion 1: 028BY058NV
Inclusion 2: None
Inclusion 3: 025XY003NV

1640--Jungo association

Composition

Major Components

Jungo very gravelly loam, 15 to 50 percent slopes--55 percent

Jungo very gravelly loam, 4 to 15 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Armespan very gravelly loam, 2 to 8 percent slopes--7 percent

Inclusion 2: Xeric Torriorthents extremely gravelly coarse sand, 0 to 2 percent slopes--4 percent

Inclusion 3: Kyler very gravelly loam, 8 to 50 percent slopes--2 percent

Inclusion 4: Xerollic Haplargids, loamy-skeletal, mixed, mesic very gravelly loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Jungo--Landform: Ballenas; geomorphic position: backslope

Jungo--Landform: Ballenas; geomorphic position: summit

Inclusion 1--Landform: Ballenas; geomorphic position: backslope; position on slope: lower

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Hills

Inclusion 4--Landform: Ballenas; geomorphic position: backslope

Major Component Description

Jungo Series

Elevation: 5,200 to 6,200 feet

Precipitation: About 8 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface rock fragments: 5 percent cobbles; 70 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Jungo Series

Elevation: 5,200 to 6,200 feet

Precipitation: About 8 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface rock fragments: 1 percent stones and boulders; 5 percent cobbles; 70 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Jungo: Indian ricegrass, black sagebrush, galleta, needleandthread

Jungo: Indian ricegrass, black sagebrush, galleta, needleandthread

Inclusion 1: Indian ricegrass, black sagebrush, galleta, needleandthread

Inclusion 2: Indian ricegrass, Nevada ephedra, big sagebrush, rubber rabbitbrush

Inclusion 3: Indian ricegrass, black sagebrush, galleta, needleandthread

Inclusion 4: Indian ricegrass, Utah juniper, black sagebrush, galleta

Ecological Site

Jungo: 028AY004NV

Jungo: 028AY013NV

Inclusion 1: 028AY013NV

Inclusion 2: 028AY038NV

Inclusion 3: 028AY004NV

Inclusion 4: 028AY027NV

1650--Shantown-Zorravista association

Composition

Major Components

Shantown gravelly loamy sand, 2 to 8 percent slopes--65 percent

Zorravista loamy fine sand, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Threesee very gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Aridic Haploxerolls, sandy-skeletal over loamy, mixed, mesic sandy clay loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Xeric Torriorthents gravelly sandy clay loam, 2 to 8 percent slopes--3 percent

Inclusion 4: Shantown gravelly sandy clay loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins

Shantown--Landform: Longshore bars (relict)

Zorravista--Landform: Sand sheets; aspect: north

Inclusion 1--Landform: Spits

Inclusion 2--Landform: Spits

Inclusion 3--Landform: Spits

Inclusion 4--Landform: Spits

Major Component Description

Shantown Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Zorravista Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 48 degrees
Frost-free season: About 115 days
Surface layer texture: Loamy fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian material

Dominant Present Vegetation

Shantown: Indian ricegrass, Wyoming big sagebrush, needleandthread
Zorravista: Indian ricegrass, big sagebrush, needleandthread, thickspike wheatgrass
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread
Inclusion 4: Thurber needlegrass, big sagebrush, bluebunch wheatgrass

Ecological Site

Shantown: 028BY010NV
Zorravista: 028BY005NV
Inclusion 1: 028BY010NV
Inclusion 2: 028BY010NV
Inclusion 3: 028BY010NV
Inclusion 4: 028BY007NV

1651--Shantown association

Composition

Major Components
Shantown gravelly loamy sand, 2 to 8 percent slopes--55 percent
Shantown gravelly loamy sand, moist, 2 to 8 percent slopes--30 percent

Contrasting Inclusions
Inclusion 1: Durixerollic Camborthids, coarse-loamy, mixed, mesic coarse sandy loam, 2 to 8 percent slopes--8 percent
Inclusion 2: Idway sandy loam, 2 to 4 percent slopes--7 percent

Map Unit Setting

Landscape position: Intermontane basins
Shantown--Landform: Longshore bars (relict)
Shantown--Landform: Longshore bars (relict)
Inclusion 1--Landform: Longshore bars (relict)
Inclusion 2--Landform: Longshore bars (relict)

Major Component Description

Shantown Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Shantown Series
Elevation: 6,000 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Shantown: Indian ricegrass, Wyoming big sagebrush, needleandthread
Shantown: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Shantown: 028BY010NV
Shantown: 028BY007NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY028NV

1660--Wendane-Logan association

Composition

Major Components

Wendane silt loam, 0 to 4 percent slopes--45 percent
Logan silt loam, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Haplaquolls, fine, montmorillonitic (calcareous), mesic silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Kolda silt loam, 0 to 1 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Wendane--Landform: Lake terraces
Logan--Landform: Flood plains
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Lake terraces
Inclusion 3--Landform: Lake plains

Major Component Description

Wendane Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Logan Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Dominant Present Vegetation

Wendane: Alkali cordgrass, alkali sacaton, inland saltgrass
Logan: Alkali sacaton, bluegrass, mat muhly
Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 3: Cattail

Ecological Site

Wendane: 028BY002NV
Logan: 028BY100NV
Inclusion 1: 028BY001NV
Inclusion 2: 028BY004NV
Inclusion 3: 028BY044NV

1670--Wendane-Logan-Wendane, occasionally flooded association

Composition

Major Components

Wendane silt loam, 0 to 4 percent slopes--45 percent
Logan silt loam, 0 to 2 percent slopes--25 percent
Wendane silt loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Playas silty clay, 0 to 1 percent slopes--5 percent
Inclusion 2: Benin silty clay, 0 to 2 percent slopes--5 percent
Inclusion 3: Umberland silty clay, 0 to 2 percent slopes--3 percent
Inclusion 4: Typic Calciaquolls, fine-loamy, mesic silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Wendane--Landform: Lake terraces
Logan--Landform: Flood plains
Wendane--Landform: Lake terraces
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Flood plains

Major Component Description

Wendane Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Logan Series

Elevation: 5,600 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Silt loam

Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Wendane Series
Elevation: 5,600 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Logan: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Wendane: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 1: None
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass
Inclusion 3: Bluegrass, foxtail barley, inland saltgrass, rush, sedge
Inclusion 4: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush

Ecological Site

Wendane: 028BY004NV
Logan: 028BY100NV
Wendane: 028BY002NV
Inclusion 1: None
Inclusion 2: 028BY069NV
Inclusion 3: 028BY098NV
Inclusion 4: 028BY031NV

1680--Rubylake-Kolda-Wendane association

Composition

Major Components
Rubylake clay loam, 2 to 4 percent slopes--35 percent
Kolda silt loam, 0 to 2 percent slopes--30 percent
Wendane silt loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions
Inclusion 1: Typic Calciaquolls, fine-silty, mesic silt loam, 0 to 2 percent slopes--3 percent
Inclusion 2: Umberland, 0 to 1 percent slopes--3 percent
Inclusion 3: Umberland silty clay, 0 to 1 percent slopes--3 percent
Inclusion 4: Playas silty clay, 0 to 1 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Rubylake--Landform: Lake terraces
Kolda--Landform: Flood plains
Wendane--Landform: Lake terraces
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake plains
Inclusion 4--Landform: Lake plains

Major Component Description

Rubylake Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Clay loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Kolda Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Wendane Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Rubylake: Alkali cordgrass, alkali sacaton, inland saltgrass
Kolda: Cattail
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 1: Alkali sacaton, bluegrass, mat muhly

Inclusion 2: Bluegrass, foxtail barley, inland saltgrass, rush, sedge
Inclusion 3: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 4: None

Ecological Site

Rubylake: 028BY002NV
Kolda: 028BY044NV
Wendane: 028BY004NV
Inclusion 1: 028BY100NV
Inclusion 2: 028BY098NV
Inclusion 3: 028BY020NV
Inclusion 4: None

1681--Wendane-Logan-Umberland association

Composition

Major Components

Wendane silt loam, 0 to 2 percent slopes--40 percent
Logan silt loam, 0 to 2 percent slopes--30 percent
Umberland silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Calciaquolls, fine-silty, mesic silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Umberland silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Aquic Natrargids, fine-silty, mixed, mesic silt loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Umberland, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Wendane--Landform: Lake terraces
Logan--Landform: Flood plains
Umberland--Landform: Lake plains
Inclusion 1--Landform: Lake plains
Inclusion 2--Landform: Lake plains
Inclusion 3--Landform: Lake terraces
Inclusion 4--Landform: Lake plains

Major Component Description

Wendane Series

Elevation: 5,900 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Logan Series

Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Umberland Series

Elevation: 5,900 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Lacustrine sediments derived from volcanic rocks

Dominant Present Vegetation

Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Logan: Alkali sacaton, bluegrass, mat muhly
Umberland: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 1: Alkali sacaton, bluegrass, mat muhly
Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass
Inclusion 3: Black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 4: Bluegrass, foxtail barley, inland saltgrass, rush, sedge

Ecological Site

Wendane: 028BY004NV
Logan: 028BY100NV
Umberland: 028BY020NV
Inclusion 1: 028BY100NV
Inclusion 2: 028BY020NV
Inclusion 3: 028BY004NV
Inclusion 4: 028BY098NV

1690--Krenka-Secrepass association

Composition

Major Components

Krenka loam, 4 to 15 percent slopes--50 percent
Secrepass gravelly loam, 4 to 8 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Cumulic Endoaquolls, fine-loamy, mixed, frigid silt loam, 2 to 4 percent slopes--5 percent

Inclusion 2: Cumulic Endoaquolls, loamy-skeletal, mixed, frigid very gravelly loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Cumulic Endoaquolls, fine-loamy, mixed, frigid loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Typic Haploxerolls, loamy-skeletal, mixed, frigid gravelly clay loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Krenka--Landform: Fan remnants
Secrepass--Landform: Fan remnants
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Flood plains
Inclusion 4--Landform: Fan remnants; geomorphic position: summit; shape of slope: concave

Major Component Description

Krenka Series
Elevation: 6,400 to 6,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Secrepass Series
Elevation: 6,400 to 6,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Krenka: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Secrepass: Idaho fescue, bluegrass, low sagebrush
Inclusion 1: Nevada bluegrass, alpine timothy
Inclusion 2: Bluegrass, narrowleaf cottonwood, sedge, willow
Inclusion 3: Tufted hairgrass
Inclusion 4: Bluegrass, meadow barley

Ecological Site

Krenka: 025XY004NV
Secrepass: 025XY032NV
Inclusion 1: 025XY006NV
Inclusion 2: 025XY053NV
Inclusion 3: 025XY005NV
Inclusion 4: 025XY047NV

1700--Heechee-Rubicity association

Composition

Major Components
Heechee cobbly loam, 4 to 15 percent slopes--35 percent
Rubicity gravelly sandy loam, 4 to 15 percent slopes--30 percent
Heechee extremely stony sandy loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Krenka very stony sandy loam, 8 to 30 percent slopes--4 percent
Inclusion 2: Typic Haplaquolls, loamy-skeletal, mixed, frigid loam, 4 to 8 percent slopes--4 percent
Inclusion 3: Donna silt loam, 4 to 15 percent slopes--4 percent
Inclusion 4: Welch loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Heechee--Landform: Fan remnants
Rubicity--Landform: Alluvial fans
Heechee--Landform: Fan remnants
Inclusion 1--Landform: Alluvial fans
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Flood plains

Major Component Description

Heechee Series
Elevation: 6,100 to 6,700 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 30 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Rubicity Series
Elevation: 6,100 to 6,700 feet

Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 90 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Heechee Series
Elevation: 6,100 to 6,700 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles
Surface layer texture: Extremely stony sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Heechee: Antelope bitterbrush
Rubicity: Mountain big sagebrush
Heechee: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 2: Nevada bluegrass, Woods rose, quaking aspen, sedge
Inclusion 3: Idaho fescue, bluebunch wheatgrass, low sagebrush
Inclusion 4: Nevada bluegrass, alpine timothy

Ecological Site

Heechee: 025XY007NV
Rubicity: 025XY012NV
Heechee: 025XY007NV
Inclusion 1: 025XY004NV
Inclusion 2: 025XY064NV
Inclusion 3: 025XY017NV
Inclusion 4: 025XY006NV

1702--Heechee-McIvey-Rubicity association

Composition

Major Components
Heechee cobbly loam, 2 to 8 percent slopes--35 percent
McIvey very cobbly loam, 2 to 8 percent slopes--30 percent
Rubicity gravelly sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Typic Haplaquolls, coarse-loamy, mixed, frigid gravelly sandy loam, 2 to 8 percent slopes--8 percent
Inclusion 2: Welch loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Cumulic Endoaquolls, loamy-skeletal, mixed, frigid stony loam, 2 to 8 percent slopes--2 percent
Inclusion 4: Welch loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Heechee--Landform: Fan remnants
McIvey--Landform: Fan remnants
Rubicity--Landform: Fan remnants
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Flood plains
Inclusion 4--Landform: Flood plains

Major Component Description

Heechee Series
Elevation: 6,000 to 6,600 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

McIvey Series
Elevation: 6,000 to 6,600 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Rubicity Series
Elevation: 6,000 to 6,600 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 90 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Heechee: Antelope bitterbrush
McIvey: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Rubicity: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass
Inclusion 2: Basin big sagebrush, basin wildrye
Inclusion 3: Nevada bluegrass, Woods rose, quaking aspen, sedge
Inclusion 4: Tufted hairgrass

Ecological Site

Heechee: 025XY007NV
McIvey: 025XY012NV
Rubicity: 025XY012NV
Inclusion 1: 025XY014NV
Inclusion 2: 025XY003NV
Inclusion 3: 025XY064NV
Inclusion 4: 025XY005NV

1710--James Canyon-Wendane association

Composition

Major Components

James Canyon fine sandy loam, 0 to 2 percent slopes--60 percent
Wendane silt loam, 0 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: James Canyon silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Cumulic Endoaquolls, fine-loamy over sandy or sandy-skeletal, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Wendane silt loam, 0 to 4 percent slopes--3 percent
Inclusion 4: James Canyon silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
James Canyon--Landform: Flood plains
Wendane--Landform: Stream terraces
Inclusion 1--Landform: Stream terraces
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Stream terraces
Inclusion 4--Landform: Flood plains

Major Component Description

James Canyon Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Wendane Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

James Canyon: Alkali sacaton, bluegrass, mat muhly
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 3: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 4: Alkali sacaton, bluegrass, mat muhly

Ecological Site

James Canyon: 028BY100NV
Wendane: 028BY004NV
Inclusion 1: 028BY001NV
Inclusion 2: 028BY031NV
Inclusion 3: 028BY002NV
Inclusion 4: 028BY100NV

1711--James Canyon-Wendane-Wendane, occasionally flooded association

Composition

Major Components

James Canyon fine sandy loam, 0 to 2 percent slopes--40 percent
Wendane silt loam, 0 to 4 percent slopes--35 percent
Wendane silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Slipback sandy loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Hulderman loam, 0 to 2 percent slopes--3 percent
Inclusion 3: James Canyon loam, 0 to 2 percent slopes--2 percent

Map Unit Setting
Landscape position: Intermontane basins
James Canyon--Landform: Flood plains
Wendane--Landform: Stream terraces
Wendane--Landform: Stream terraces
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Flood plains

Major Component Description
James Canyon Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Wendane Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Wendane Series
Elevation: 5,600 to 6,000 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation
James Canyon: Alkali sacaton, bluegrass, mat muhly
Wendane: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Wendane: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 1: Basin wildrye, big sagebrush, black greasewood
Inclusion 2: Alkali sacaton, bluegrass, mat muhly
Inclusion 3: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly

Ecological Site
James Canyon: 028BY100NV
Wendane: 028BY004NV
Wendane: 028BY002NV
Inclusion 1: 028BY028NV
Inclusion 2: 028BY100NV
Inclusion 3: 028BY031NV

1720--Welch loam, 0 to 4 percent slopes

Composition
Major Components
Welch loam, 0 to 4 percent slopes--85 percent
Contrasting Inclusions
Inclusion 1: Cumulic Endoaquolls, coarse-loamy, mixed, frigid sandy loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Welch sandy loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Cumulic Endoaquolls, sandy-skeletal, mixed, frigid sandy loam, 0 to 4 percent slopes--5 percent

Map Unit Setting
Landscape position: Fan piedmonts
Welch--Landform: Fan skirts
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Drainageways

Major Component Description
Welch Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation
Welch: Bluegrass, rush, sedge
Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Alkali sacaton, bluegrass, mat muhly
Inclusion 3: Bluegrass, rush, sedge

Ecological Site

Welch: 028BY001NV
Inclusion 1: 028BY001NV
Inclusion 2: 028BY100NV
Inclusion 3: 028BY001NV

1721--Welch-Welsum complex

Composition

Major Components

Welch loam, 0 to 2 percent slopes--60 percent
Welsum silt loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Wendane silt loam, 0 to 4 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 0 to 4 percent slopes--5 percent
Inclusion 3: Fluventic Endoaquolls, loamy-skeletal, mixed, frigid loam, 0 to 2 percent slopes--3 percent
Inclusion 4: Cumulic Endoaquolls, fine, montmorillonitic, mesic silt loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Welch--Landform: Fan skirts
Welsum--Landform: Fan skirts
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Fan skirts; position on slope: lower

Major Component Description

Welch Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Welsum Series

Elevation: 5,700 to 6,400 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Welch: Bluegrass, rush, sedge
Welsum: Alkali sacaton, bluegrass, mat muhly
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Alkali cordgrass, alkali sacaton, inland saltgrass
Inclusion 3: Bluegrass, rush, sedge
Inclusion 4: Alkali sacaton, bluegrass, mat muhly

Ecological Site

Welch: 028BY001NV
Welsum: 028BY100NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY002NV
Inclusion 3: 028BY001NV
Inclusion 4: 028BY100NV

1722--Welch-Slipback association

Composition

Major Components

Welch loam, 0 to 2 percent slopes--35 percent
Slipback sandy loam, 0 to 2 percent slopes--30 percent
Welch loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Wendane silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Xerollic Natrargids, fine-loamy over sandy or sandy-skeletal, mixed, mesic loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Fluventic Endoaquolls, clayey over sandy or sandy-skeletal, mixed, mesic sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Welch--Landform: Flood plains
Slipback--Landform: Fan remnants
Welch--Landform: Inset fans
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Inset fans

Major Component Description

Welch Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees

Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Slipback Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Welch Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 58 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Welch: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Slipback: Basin wildrye, big sagebrush, black greasewood
Welch: Alkali sacaton, bluegrass, mat muhly
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush

Ecological Site

Welch: 028BY031NV
Slipback: 028BY028NV
Welch: 028BY100NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY028NV
Inclusion 3: 028BY031NV

1723--Welch association

Composition

Major Components
Welch loam, 0 to 2 percent slopes--50 percent
Welch loam, 0 to 2 percent slopes--35 percent
Contrasting Inclusions
Inclusion 1: Wendane loam, 2 to 4 percent slopes--5 percent
Inclusion 2: James Canyon silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Welch loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Welch--Landform: Flood plains
Welch--Landform: Stream terraces
Inclusion 1--Landform: Stream terraces
Inclusion 2--Landform: Flood plains; position on slope: lower
Inclusion 3--Landform: Drainageways

Major Component Description

Welch Series
Elevation: 6,100 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Welch Series
Elevation: 6,100 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Welch: Basin big sagebrush, basin wildrye
Welch: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Inclusion 2: Alkali sacaton, bluegrass, mat muhly
Inclusion 3: Bluegrass, rush, sedge

Ecological Site

Welch: 028BY100NV
Welch: 025XY003NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY100NV
Inclusion 3: 028BY001NV

1730--McIvey-Donna association

Composition

Major Components

McIvey very cobbly loam, 4 to 15 percent slopes--60 percent
Donna gravelly loam, 4 to 15 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Cumulic Endoaquolls, sandy-skeletal, mixed, frigid silt loam, 4 to 15 percent slopes--8 percent
Inclusion 2: Typic Argixerolls, loamy-skeletal, mixed, frigid very stony loam, 4 to 8 percent slopes--3 percent
Inclusion 3: Pachic Argixerolls, loamy-skeletal, mixed, frigid gravelly loam, 8 to 30 percent slopes--2 percent
Inclusion 4: McIvey silt loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
McIvey--Landform: Fan remnants
Donna--Landform: Fan remnants
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Fan remnants; position on slope: lower
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper
Inclusion 4--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

McIvey Series

Elevation: 5,800 to 7,000 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Donna Series

Elevation: 5,800 to 7,000 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

McIvey: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Donna: Idaho fescue, bluebunch wheatgrass, low sagebrush
Inclusion 1: Nevada bluegrass, Woods rose, quaking aspen, sedge
Inclusion 2: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass
Inclusion 3: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 4: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush

Ecological Site

McIvey: 025XY012NV
Donna: 025XY018NV
Inclusion 1: 025XY064NV
Inclusion 2: 025XY014NV
Inclusion 3: 025XY004NV
Inclusion 4: 025XY012NV

1731--McIvey-Chen-Donna association

Composition

Major Components

McIvey very cobbly loam, 15 to 50 percent slopes--45 percent
Chen very gravelly loam, 8 to 30 percent slopes--25 percent
Donna silt loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Cumulic Endoaquolls, loamy-skeletal, mixed, frigid gravelly loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Aridic Argixerolls, loamy-skeletal, mixed, frigid cobbly loam, 8 to 30 percent slopes--4 percent
Inclusion 3: Sumine very gravelly loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Tecomar very gravelly loam, 8 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
McIvey--Landform: Hills; shape of slope: concave
Chen--Landform: Hills; shape of slope: convex
Donna--Landform: Fan remnants
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Hills
Inclusion 3--Landform: Hills; aspect: south
Inclusion 4--Landform: Hills; geomorphic position: summit

Major Component Description

McIvey Series
Elevation: 5,800 to 7,400 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Chen Series
Elevation: 5,800 to 7,400 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent stones and boulders; 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Donna Series
Elevation: 5,800 to 7,400 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

McIvey: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Chen: Idaho fescue, bluebunch wheatgrass, low sagebrush
Donna: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 1: Nevada bluegrass, Woods rose, quaking aspen, sedge
Inclusion 2: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Thurber needlegrass, black sagebrush, bluebunch wheatgrass

Ecological Site

McIvey: 025XY012NV
Chen: 025XY017NV
Donna: 025XY018NV
Inclusion 1: 025XY064NV
Inclusion 2: 025XY007NV
Inclusion 3: 025XY009NV
Inclusion 4: 024XY031NV

1732--McIvey-Stampede-Heechee association

Composition

Major Components
McIvey gravelly loam, 2 to 8 percent slopes--35 percent
Stampede gravelly loam, 2 to 8 percent slopes--30 percent
Heechee cobbly loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Heechee cobbly loam, 8 to 15 percent slopes--5 percent
Inclusion 2: McIvey cobbly loam, 15 to 30 percent slopes--5 percent
Inclusion 3: Hussa loam, 0 to 2 percent slopes--4 percent
Inclusion 4: Durargidic Argixerolls, fine-loamy, mixed, frigid loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
McIvey--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex
Stampede--Landform: Fan remnants; geomorphic position: summit; shape of slope: plane
Heechee--Landform: Fan remnants; geomorphic position: backslope; shape of slope: convex
Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: upper

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; shape of slope: plane
Inclusion 3--Landform: Flood plains
Inclusion 4--Landform: Fan remnants; geomorphic position: summit; shape of slope: concave

Major Component Description

McIvey Series
Elevation: 5,700 to 6,600 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 2 percent stones and boulders; 2 percent cobbles; 20 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Stampede Series
Elevation: 5,700 to 6,600 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Heechee Series
Elevation: 5,700 to 6,600 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 85 days
Surface rock fragments: 3 percent stones and boulders; 5 percent cobbles; 30 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

McIvey: Mountain big sagebrush
Stampede: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass
Heechee: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Basin big sagebrush
Inclusion 4: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass

Ecological Site

McIvey: 025XY012NV
Stampede: 025XY014NV
Heechee: 025XY007NV
Inclusion 1: 025XY007NV
Inclusion 2: 025XY012NV
Inclusion 3: 025XY003NV
Inclusion 4: 025XY014NV

1740--Slipback-Welch association

Composition

Major Components
Slipback sandy loam, 0 to 2 percent slopes--60 percent
Welch loam, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
Inclusion 1: Welch loam, 0 to 2 percent slopes--8 percent
Inclusion 2: Wendane silt loam, 0 to 2 percent slopes--3 percent
Inclusion 3: Xerollic Natrargids, fine-loamy over sandy or sandy skeletal, mixed, mesic loam, 0 to 2 percent slopes--2 percent
Inclusion 4: Fluventic Endoaquolls, clayey over sandy or sandy-skeletal, mixed, mesic sandy loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Slipback--Landform: Fan remnants
Welch--Landform: Flood plains
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Alluvial flats
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Flood plains

Major Component Description

Slipback Series
Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Welch Series
Elevation: 5,600 to 5,700 feet

Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Slipback: Basin wildrye, big sagebrush, black greasewood
Welch: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 1: Alkali sacaton, bluegrass, mat muhly
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 3: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Slipback: 028BY028NV
Welch: 028BY031NV
Inclusion 1: 028BY100NV
Inclusion 2: 028BY004NV
Inclusion 3: 028BY031NV
Inclusion 4: 028BY028NV

1741--Slipback-Shantown-Toba association

Composition

Major Components

Slipback sandy loam, 0 to 2 percent slopes--50 percent
Shantown gravelly loamy sand, 0 to 2 percent slopes--25 percent
Toba loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Fluventic Endoaquolls, clayey over sandy or sandy-skeletal, mixed, mesic sandy loam, 0 to 2 percent slopes--2 percent
Inclusion 2: Kunzler sandy loam, 0 to 2 percent slopes--2 percent
Inclusion 3: Wendane loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Intermontane basins
Slipback--Landform: Alluvial flats
Shantown--Landform: Spits
Toba--Landform: Flood plains
Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Alluvial flats
Inclusion 3--Landform: Alluvial flats

Major Component Description

Slipback Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Shantown Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Gravelly loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Toba Series

Elevation: 5,600 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Slipback: Basin wildrye, big sagebrush, black greasewood
Shantown: Thurber needlegrass, big sagebrush, bluebunch wheatgrass
Toba: Alkali sacaton, basin big sagebrush, basin wildrye, mat muhly, rubber rabbitbrush
Inclusion 1: Alkali sacaton, bluegrass, mat muhly
Inclusion 2: Basin wildrye, big sagebrush, black greasewood
Inclusion 3: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Slipback: 028BY028NV
Shantown: 028BY007NV
Toba: 028BY031NV
Inclusion 1: 028BY100NV
Inclusion 2: 028BY028NV

Inclusion 3: 028BY004NV

1750--Heechee-Welch association

Composition

Major Components

Heechee gravelly loam, 2 to 4 percent slopes--45 percent
Welch loam, 0 to 4 percent slopes--25 percent
Welch loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: McIvey very stony sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 2: Welsum gravelly loam, 0 to 4 percent slopes--3 percent
Inclusion 3: Welch sandy loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Heechee--Landform: Fan remnants
Welch--Landform: Fan skirts
Welch--Landform: Fan skirts
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Fan skirts

Major Component Description

Heechee Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 85 days
Surface rock fragments: 3 percent stones and boulders; 5 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Welch Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Welch Series

Elevation: 5,700 to 6,200 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Heechee: Mountain big sagebrush
Welch: Alkali sacaton, bluegrass, mat muhly
Welch: Basin big sagebrush, basin wildrye
Inclusion 1: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Alkali sacaton, bluegrass, mat muhly
Inclusion 3: Bluegrass, rush, sedge

Ecological Site

Heechee: 025XY012NV
Welch: 028BY100NV
Welch: 025XY003NV
Inclusion 1: 025XY012NV
Inclusion 2: 028BY100NV
Inclusion 3: 028BY001NV

1760--Lykal-Wendane-James Canyon association

Composition

Major Components

Lykal silt loam, 0 to 4 percent slopes--35 percent
Wendane silt loam, 0 to 2 percent slopes--30 percent
James Canyon fine sandy loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Welch sandy loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Wendane silt loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Lykal--Landform: Stream terraces; position on slope: upper
Wendane--Landform: Stream terraces; position on slope: lower
James Canyon--Landform: Flood plains

Inclusion 1--Landform: Flood plains
Inclusion 2--Landform: Stream terraces; position on slope: lower

Major Component Description

Lykal Series
Elevation: 5,800 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Wendane Series
Elevation: 5,800 to 6,100 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

James Canyon Series
Elevation: 5,800 to 6,100 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sandy loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Lykal: Idaho fescue, bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Wendane: Alkali cordgrass, alkali sacaton, inland saltgrass
James Canyon: Alkali sacaton, bluegrass, mat muhly
Inclusion 1: Alkali sacaton, bluegrass, mat muhly
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Ecological Site

Lykal: 028BY063NV
Wendane: 028BY002NV
James Canyon: 028BY100NV
Inclusion 1: 028BY100NV
Inclusion 2: 028BY004NV

1770--Donna-McIvey-Heechee association

Composition

Major Components
Donna gravelly loam, 4 to 15 percent slopes--40 percent
McIvey very cobbly loam, 4 to 15 percent slopes--25 percent
Heechee very stony loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Abruptic Aridic Durixerolls very cobbly loam, 4 to 15 percent slopes--5 percent
Inclusion 2: Welch loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Welch loam, 2 to 8 percent slopes--5 percent
Inclusion 4: Cumulic Endoaquolls, loamy-skeletal, mixed, frigid loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Donna--Landform: Fan remnants
McIvey--Landform: Fan remnants
Heechee--Landform: Fan remnants; position on slope: upper
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Flood plains
Inclusion 4--Landform: Flood plains

Major Component Description

Donna Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

McIvey Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Heechee Series
Elevation: 5,700 to 6,800 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 85 days
Surface rock fragments: 3 percent stones and boulders; 5 percent cobbles; 30 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Donna: Idaho fescue, bluebunch wheatgrass, low sagebrush
McIvey: Mountain big sagebrush
Heechee: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 1: Idaho fescue, bluebunch wheatgrass, low sagebrush
Inclusion 2: Nevada bluegrass, alpine timothy
Inclusion 3: Basin big sagebrush, basin wildrye
Inclusion 4: Nevada bluegrass, Woods rose, quaking aspen, sedge

Ecological Site

Donna: 025XY018NV
McIvey: 025XY012NV
Heechee: 025XY007NV
Inclusion 1: 025XY017NV
Inclusion 2: 025XY006NV
Inclusion 3: 025XY003NV
Inclusion 4: 025XY064NV

1780--Schoer-Welch association

Composition

Major Components

Schoer loam, 2 to 4 percent slopes--65 percent
Welch loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Donna silt loam, 2 to 4 percent slopes--4 percent
Inclusion 2: McIvey stony loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Welch silt loam, 0 to 4 percent slopes--2 percent
Inclusion 4: Stampede gravelly loam, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Schoer--Landform: Fan remnants
Welch--Landform: Flood plains
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Flood plains
Inclusion 4--Landform: Fan remnants

Major Component Description

Schoer Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 11 inches
Air temperature: About 46 degrees
Frost-free season: About 100 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Welch Series
Elevation: 5,700 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Schoer: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass
Welch: Alkali sacaton, bluegrass, mat muhly
Inclusion 1: Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Inclusion 2: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 3: Tufted hairgrass
Inclusion 4: Thurber needlegrass, basin big sagebrush, bluebunch wheatgrass

Ecological Site

Schoer: 025XY014NV
Welch: 028BY100NV
Inclusion 1: 025XY018NV
Inclusion 2: 025XY007NV
Inclusion 3: 025XY005NV
Inclusion 4: 025XY014NV

1790--Donna-Krenka-McIvey association

Composition

Major Components

Donna gravelly loam, 4 to 15 percent slopes--40 percent

Krenka loam, 8 to 30 percent slopes--25 percent
McIvey very cobbly loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: McIvey cobbly loam, 4 to 15 percent slopes--6 percent
Inclusion 2: Cumulic Endoaquolls, fine-silty, mixed, frigid gravelly sandy loam, 0 to 2 percent slopes--4 percent
Inclusion 3: Aridic Argixerolls, loamy-skeletal, mixed, frigid very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Welch loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Donna--Landform: Fan remnants; position on slope: upper
Krenka--Landform: Fan remnants; position on slope: upper
McIvey--Landform: Fan remnants; geomorphic position: summit; shape of slope: concave
Inclusion 1--Landform: Fan remnants; position on slope: lower
Inclusion 2--Landform: Flood plains
Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; shape of slope: plane; aspect: south
Inclusion 4--Landform: Flood plains

Major Component Description

Donna Series

Elevation: 6,200 to 6,800 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Krenka Series

Elevation: 6,200 to 6,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent cobbles; 20 percent gravel
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

McIvey Series

Elevation: 6,200 to 6,800 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium and colluvium derived from mixed rocks

Dominant Present Vegetation

Donna: Antelope bitterbrush, bluebunch wheatgrass, bluegrass, low sagebrush
Krenka: Mountain big sagebrush, snowberry
McIvey: Idaho fescue, Utah serviceberry, bluebunch wheatgrass
Inclusion 1: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 2: Nevada bluegrass, Woods rose, quaking aspen, sedge
Inclusion 3: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Nevada bluegrass, alpine timothy

Ecological Site

Donna: 025XY018NV
Krenka: 025XY004NV
McIvey: 025XY046NV
Inclusion 1: 025XY012NV
Inclusion 2: 025XY064NV
Inclusion 3: 025XY009NV
Inclusion 4: 025XY006NV

1800--Chen-Graley-Rock outcrop association

Composition

Major Components

Chen very gravelly loam, 15 to 50 percent slopes--50 percent
Graley stony loam, 15 to 50 percent slopes--20 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic, 8 to 30 percent slopes--6 percent
Inclusion 2: Cleavage extremely gravelly loam, 8 to 30 percent slopes--3 percent
Inclusion 3: Sumine very gravelly loam, 15 to 50 percent slopes--3 percent
Inclusion 4: Welch loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
Chen--Landform: Mountains; geomorphic position: summit
Graley--Landform: Mountains; geomorphic position: summit
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 2--Landform: Mountains; geomorphic position: summit
Inclusion 3--Landform: Mountains; geomorphic position: backslope; aspect: south
Inclusion 4--Landform: Drainageways

Major Component Description

Chen Series
Elevation: 5,900 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent stones and boulders; 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Graley Series
Elevation: 5,900 to 8,200 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 40 percent cobbles; 15 percent gravel
Surface layer texture: Stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area
Elevation: 5,900 to 8,200 feet

Dominant Present Vegetation

Chen: Idaho fescue, bluebunch wheatgrass, low sagebrush
Graley: Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Rock outcrop: None
Inclusion 1: Indian ricegrass, Thurber needlegrass, black sagebrush
Inclusion 2: Idaho fescue, black sagebrush, low sagebrush
Inclusion 3: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Basin big sagebrush, basin wildrye, creeping wildrye, willow

Ecological Site

Chen: 025XY017NV
Graley: 025XY012NV
Rock outcrop: None
Inclusion 1: 024XY030NV
Inclusion 2: 025XY024NV
Inclusion 3: 025XY009NV
Inclusion 4: 025XY001NV

1810--Sumine-Tusel-Hapgood association

Composition

Major Components
Sumine very gravelly loam, 50 to 75 percent slopes--45 percent
Tusel gravelly loam, 50 to 75 percent slopes--25 percent
Hapgood very gravelly loam, 50 to 75 percent slopes--15 percent

Contrasting Inclusions
Inclusion 1: Cleavage extremely gravelly loam, 15 to 50 percent slopes--10 percent
Inclusion 2: Chen very gravelly loam, 15 to 30 percent slopes--3 percent
Inclusion 3: Welch silt loam, 2 to 8 percent slopes--1 percent
Inclusion 4: Bullump very gravelly loam, 30 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Sumine--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south
Tusel--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
Hapgood--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 1--Landform: Mountains; geomorphic position: summit; position on slope: upper; shape of slope: convex
Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: upper; shape of slope: convex
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Major Component Description

Sumine Series
Elevation: 6,200 to 7,000 feet
Precipitation: About 12 inches
Air temperature: About 42 degrees
Frost-free season: About 85 days
Surface rock fragments: 10 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Tusel Series
Elevation: 6,200 to 7,000 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from quartzite

Hapgood Series
Elevation: 6,200 to 7,000 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 70 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Sumine: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Tusel: Idaho fescue
Hapgood: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 1: Idaho fescue, black sagebrush, low sagebrush
Inclusion 2: Idaho fescue, bluebunch wheatgrass, low sagebrush
Inclusion 3: Tufted hairgrass
Inclusion 4: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, mountain brome

Ecological Site

Sumine: 025XY009NV
Tusel: 025XY010NV
Hapgood: 025XY004NV
Inclusion 1: 025XY024NV
Inclusion 2: 025XY017NV
Inclusion 3: 025XY005NV
Inclusion 4: 025XY016NV

1820--Hussa-Halleck-Welsum association

Composition

Major Components
Hussa silt loam, 0 to 2 percent slopes--35 percent
Halleck silt loam, 0 to 2 percent slopes--30 percent
Welsum silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Fluvaquentic Haploxerolls, sandy-skeletal, mixed, frigid sandy loam, 0 to 2 percent slopes--6 percent
Inclusion 2: Sonoma silt loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Typic Haplaquolls, sandy-skeletal, mixed, frigid loam, 0 to 2 percent slopes--4 percent

Map Unit Setting

Landscape position: Intermontane basins
Hussa--Landform: Flood plains; position on slope: upper
Halleck--Landform: Flood plains; position on slope: lower
Welsum--Landform: Flood plains
Inclusion 1--Landform: Stream terraces
Inclusion 2--Landform: Alluvial flats
Inclusion 3--Landform: Natural levees

Major Component Description

Hussa Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 12 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Halleck Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 85 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Welsum Series
Elevation: 5,600 to 6,500 feet
Precipitation: About 12 inches

Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Hussa: Tufted hairgrass
Halleck: Tufted hairgrass
Welsum: Tufted hairgrass
Inclusion 1: Basin big sagebrush
Inclusion 2: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass
Inclusion 3: Bluegrass, narrowleaf cottonwood, sedge, willow

Ecological Site

Hussa: 025XY005NV
Halleck: 025XY005NV
Welsum: 025XY005NV
Inclusion 1: 025XY014NV
Inclusion 2: 024XY007NV
Inclusion 3: 025XY053NV

1831--Enko-Kelk association

Composition

Major Components

Enko fine sandy loam, 2 to 8 percent slopes--35 percent
Kelk silt loam, 0 to 2 percent slopes--35 percent
Enko silt loam, nearly level, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents fine sandy loam, 15 to 30 percent slopes--5 percent
Inclusion 2: Chiara silt loam, 0 to 2 percent slopes--3 percent
Inclusion 3: Nevador gravelly loam, 4 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Enko--Landform: Fan skirts
Kelk--Landform: Inset fans
Enko--Landform: Inset fans
Inclusion 1--Landform: Pediments; geomorphic position: backslope
Inclusion 2--Landform: Partial ballenas; geomorphic position: summit
Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Enko Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Kelk Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Enko Series

Elevation: 5,600 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Kelk: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Enko: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 1: Indian ricegrass, Wyoming big sagebrush, black sagebrush
Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass
Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Ecological Site

Enko: 025XY019NV

Kelk: 025XY019NV
Enko: 025XY019NV
Inclusion 1: 025XY025NV
Inclusion 2: 025XY019NV
Inclusion 3: 025XY019NV

1840--Amene-Belsac-Chen association

Composition

Major Components

Amene very gravelly silt loam, 15 to 30 percent slopes--45 percent
Belsac very gravelly loam, 15 to 30 percent slopes--25 percent
Chen very gravelly loam, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Haunchee very cobbly loam, 8 to 30 percent slopes--6 percent
Inclusion 2: Adobe very gravelly silt loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Halleck silt loam, 2 to 4 percent slopes--3 percent
Inclusion 4: Typic Haplaquolls, loamy-skeletal, mixed, frigid very gravelly loam, 4 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Amene--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Belsac--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Chen--Landform: Mountains; geomorphic position: summit
Inclusion 1--Landform: Mountains; geomorphic position: summit
Inclusion 2--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Drainageways

Major Component Description

Amene Series

Elevation: 6,500 to 7,000 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 1 percent stones and boulders; 2 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Residuum derived from limestone and dolomite

Belsac Series

Elevation: 6,500 to 7,000 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 65 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Chen Series

Elevation: 6,500 to 7,000 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 85 days
Surface rock fragments: 5 percent stones and boulders; 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Amene: Idaho fescue, Utah serviceberry, bluebunch wheatgrass
Belsac: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Chen: Idaho fescue, bluebunch wheatgrass, low sagebrush
Inclusion 1: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush
Inclusion 2: Idaho fescue, black sagebrush, low sagebrush
Inclusion 3: Tufted hairgrass
Inclusion 4: Nevada bluegrass, Woods rose, quaking aspen, sedge

Ecological Site

Amene: 025XY046NV
Belsac: 025XY004NV
Chen: 025XY017NV
Inclusion 1: 028BY043NV
Inclusion 2: 025XY024NV
Inclusion 3: 025XY005NV
Inclusion 4: 025XY064NV

1850--Bullump-Cleavage-Rock outcrop association

Composition

Major Components

Bullump very gravelly loam, 30 to 75 percent slopes--45 percent
Cleavage extremely gravelly loam, 15 to 50 percent slopes--25 percent
Rock outcrop--15 percent

Contrasting Inclusions

Inclusion 1: Pachic Cryoborolls, fine-loamy, mixed gravelly silt loam, 15 to 50 percent slopes--5 percent
Inclusion 2: Hapgood very gravelly loam, 15 to 50 percent slopes--5 percent
Inclusion 3: Sumine very gravelly loam, 30 to 50 percent slopes--4 percent
Inclusion 4: Rozara very gravelly loamy coarse sand, 30 to 75 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
Bullump--Landform: Mountains; geomorphic position: backslope
Cleavage--Landform: Mountains; geomorphic position: summit; shape of slope: convex
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower
Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Bullump Series

Elevation: 6,500 to 8,800 feet
Precipitation: About 16 inches
Air temperature: About 42 degrees
Frost-free season: About 80 days
Surface rock fragments: 20 percent cobbles
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Colluvium derived from pyroclastic and extrusive volcanic rocks

Cleavage Series

Elevation: 6,500 to 8,800 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 80 days
Surface rock fragments: 5 percent cobbles; 70 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Rock outcrop Miscellaneous Area

Elevation: 6,500 to 8,800 feet

Dominant Present Vegetation

Bullump: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, mountain brome
Cleavage: Idaho fescue, black sagebrush, low sagebrush
Rock outcrop: None
Inclusion 1: Mountain brome
Inclusion 2: Idaho fescue, mountain big sagebrush, mountain brome, snowberry
Inclusion 3: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Inclusion 4: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush

Ecological Site

Bullump: 025XY016NV
Cleavage: 025XY024NV
Rock outcrop: None
Inclusion 1: 025XY065NV
Inclusion 2: 025XY004NV
Inclusion 3: 025XY009NV
Inclusion 4: 025XY071NV

1861--Equis-Devilsgait association

Composition

Major Components

Equis silty clay, 0 to 2 percent slopes--50 percent
Devilsgait silt loam, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Kolda silt loam, 0 to 2 percent slopes--5 percent
Inclusion 2: Equis silty clay, 0 to 2 percent slopes--3 percent
Inclusion 3: Water--2 percent

Map Unit Setting

Landscape position: Intermontane basins
Equis--Landform: Stream terraces
Devilsgait--Landform: Lake plains
Inclusion 1--Landform: Stream terraces
Inclusion 2--Landform: Alluvial flats

Inclusion 3--Landform: Depressions

Major Component Description

Equis Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Devilsgait Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Equis: Inland saltgrass, sedge, western wheatgrass
Devilsgait: Cattail
Inclusion 1: Bluegrass, rush, sedge
Inclusion 2: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush
Inclusion 3: None

Ecological Site

Equis: 028BY012NV
Devilsgait: 028BY044NV
Inclusion 1: 028BY001NV
Inclusion 2: 028BY004NV
Inclusion 3: None

1862--Equis-Kolda association

Composition

Major Components
Equis silty clay, 0 to 2 percent slopes--40 percent
Equis silty clay, 0 to 2 percent slopes--25 percent
Kolda silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions
Inclusion 1: Equis silty clay, 0 to 2 percent slopes--5 percent
Inclusion 2: Typic Halaquepts, fine, montmorillonitic (calcareous), mesic silty clay loam, 0 to 2 percent slopes--5 percent
Inclusion 3: Kolda silt loam, 0 to 1 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
Equis--Landform: Stream terraces
Equis--Landform: Stream terraces
Kolda--Landform: Lake plains
Inclusion 1--Landform: Lake terraces
Inclusion 2--Landform: Stream terraces
Inclusion 3--Landform: Lake plains

Major Component Description

Equis Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Equis Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silty clay
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks and lacustrine sediments

Kolda Series
Elevation: 5,900 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Very poorly drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Equis: Alkali cordgrass, alkali sacaton, inland saltgrass
Equis: Inland saltgrass, sedge, western wheatgrass
Kolda: Bluegrass, rush, sedge
Inclusion 1: Basin wildrye, black greasewood, inland saltgrass, rubber rabbitbrush

Inclusion 2: Alkali sacaton, bluegrass, mat muhly
Inclusion 3: Cattail

Ecological Site

Equis: 028BY002NV
Equis: 028BY012NV
Kolda: 028BY001NV
Inclusion 1: 028BY004NV
Inclusion 2: 028BY100NV
Inclusion 3: 028BY044NV

1870--Denied Access

Composition

Major Components
Denied Access--100 percent

1880--Water

Composition

Major Components
Water--100 percent

Map Unit Setting

Landscape position: Mountains and intermontane basins
Water--Landform: Depressions

Major Component Description

Water Miscellaneous Area
Elevation: 4,400 to 9,300 feet

Prime Farmland

Prime Farmland and Other Important Farmland

In this section, prime farmland and other important farmland are defined. The map units in the survey area that are considered prime farmland are listed under "Prime Farmland Map Units" at the end of this section.

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, seed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils result in the least damage to the environment

Prime farmland soils may presently be used as cropland, pasture, and woodland or for other purposes. They are used for food and fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 6,343 acres, or nearly 0.2 percent of the survey area, would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available.

The map unit in the survey area that meets the requirement for prime farmland are listed under "Prime Farmland Map Units." On some soils included in the list, measures that overcome limitations are needed. The location of each map unit is shown on the detailed soil maps at the back of this publication. This list does not constitute a recommendation for a particular land use.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of a specific high-quality crop when treated and managed by acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, and vegetables.

Unique farmland is used for a specific high-value food or fiber crop; has an adequate supply of available moisture for the specific crop because of stored moisture, precipitation, or irrigation; and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets, that favor the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and other entities. There are presently no soils recognized as unique farmland in Nevada.

Additional Farmland of Statewide Importance

Some areas other than areas of prime and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in defining and delineating these areas are determined by the appropriate State agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Nevada has designated any farmland that is irrigated to be of statewide importance.

Prime Farmland Map Unit

The following map unit is prime farmland where irrigated with an adequate and dependable water supply:

1480--Tulase-Linoyer association

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories. 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 15, "Classification of the Soils," in Part II of this Publication shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven 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 Mollisol.

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 Xeroll *(Xer, meaning xeric, plus oll, from Mollisol).*

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 Argixeroll. *(Argi, meaning presence of argillic horizon, plus xeroll, the suborder of the Mollisols that hava a xeric moisture regime).*

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 Argixerolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, 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 loamy-skeletal, mixed, frigid, Typic Argixerolls.

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 follow standards in the "Soil Survey Manual"(28). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy"(29). 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".

Adobe Series

The Adobe series consists of shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Adobe soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic Lithic Cryoborolls

Typical pedon: Adobe very gravelly silt loam located in an area of map unit 530. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with approximately 60 percent pebbles, 5 percent cobbles.

A--0 to 2 inches; dark grayish brown (10YR 4/2) very gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine interstitial pores; few thin lime pendants and coating on undersides of rock fragments; 55 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--2 to 7 inches; brown (10YR 4/3) very gravelly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine interstitial pores; many thin lime coating on undersides of rock fragments; 45 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk2--7 to 11 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 very fine and few fine roots; common interstitial pores; many thin lime coating and pendants on undersides of rock fragments; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

R--11 inches; hard, fractured, limestone.

Type location: Elko County, Nevada; approximately 13 miles southwest of Currie in the Cherry Creek mountains at about 1,600 feet north and 2,200 feet east of the southwest corner of section 8, T.26 N., R.63 E.; (40 degrees, 08 minutes, 26 seconds north latitude and 114 degrees, 53 minutes, 37 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter through mid spring dry late spring through fall. Aridic Xeric moisture regime.
Soil temperature: 38 to 45 degrees F.
Summer soil temperature: 54 to 59 degrees F.
Mollic epipedon thickness: 10 to 20 inches.
Chroma: Darker than 5.5 dry and 3.5 moist when the surface 7 inches is mixed.
Depth to bedrock: 14 to 20 inches.
Control section:
Clay content--18 to 27 percent.
Rock fragments--35 to 60 percent pebbles.
Calcium carbonate equivalent--40 to 60 percent by weight of the 20 millimeter soil fraction.

A horizon:
Value--4 through 6 dry, 3 or 4 moist, surface may have value of 6 dry but when mixed is greater than 5.5.
Chroma--2 or 3.

Bk horizons:
Value--4 or 5 dry.
Texture--Very gravelly silt loam or very gravelly loam.
Secondary lime accumulation--Common to many thin to moderately thick soft lime coating on undersides of pebbles and common to many thin to moderately thick lime pendants on the undersides of pebbles in the lower part of the horizon.

Amene Series

The Amene series consists of shallow, well drained soils that formed in residuum from limestone and dolomite. Amene soils are on mountains. Slopes are 30 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, carbonatic, frigid Lithic Calcixerolls

Typical pedon: Amene very gravelly silt loam 30 to 50 percent slopes, is located in an area of map unit 151. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 30 percent pebbles, 2 percent cobbles, and less than 1 percent stones.

A1--0 to 6 inches; grayish brown (10YR 5/2) very gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; 30 percent pebbles and 5 percent cobbles; strongly effervescent (10 percent calcium carbonate equivalent); moderately alkaline (pH 8.4); clear smooth boundary.

A2--6 to 12 inches; brown (10YR 5/3) very gravelly silt loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, slightly sticky and slightly

plastic; many very fine and fine roots; many very fine and fine interstitial pores; 5 percent fine slightly hard lime masses; few thin lime pendants on the undersides of coarse fragments; 45 percent pebbles and 5 percent cobbles; violently effervescent (20 percent calcium carbonate equivalent); moderately alkaline (pH 8.4); clear smooth boundary.

Bk--12 to 18 inches; white (10YR 8/2) very gravelly silt loam, very pale brown (10YR 7/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine interstitial pores; 10 percent weak lime cementation; 10 percent discontinuous fine lime in seams and soft masses; many thin lime pendants on the undersides of coarse fragments; 45 percent pebbles and 10 percent cobbles; violently effervescent (50 percent calcium carbonate equivalent); strongly alkaline (pH 8.6); abrupt smooth boundary.

R--18 inches; limestone.

Type location: Elko County, Nevada; approximately 7 miles west of Oasis; about 2,200 feet east and 100 feet south of the northwest corner of section 27, T.37 N., R.65 E.; (41 degrees, 04 minutes, 03 seconds north latitude and 114 degrees, 36 minutes, 47 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in the winter through early summer, dry late July through October for 80 to 100 consecutive days.
Soil temperature: 44 to 47 degrees F.
Depth to bedrock: 14 to 20 inches.
Mollic epipedon thickness: 7 to 13 inches.
Reaction: Mildly alkaline to strongly alkaline.
Depth to calcic horizon: 7 to 13 inches.
Control section:
Clay content--18 to 27 percent.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bk horizon:
Value--5 through 8 dry, 3 through 7 moist.
Consistence--Slightly hard to hard dry, slightly sticky to sticky and slightly plastic to plastic wet.
Chroma--2 through 4 dry and moist.
Texture--Silt loam or loam.
Rock fragments--40 to 60 percent, mainly pebbles with up to 15 percent cobbles.
Calcium carbonate equivalent--40 to 60 percent (less than 20 millimeter fraction).
Other features--Thin to thick lime coating and pendants are common on underside of rock fragments or coating all surfaces of rock fragments. Some pedons have 5 to 10 percent lime masses and filaments of lime.

Amtoft Series

The Amtoft series consists of shallow, well drained and somewhat excessively drained, moderately rapid permeable soils that formed in residuum and colluvium from limestone and dolomite. Amtoft soils are on mountains. Slopes range from 8 to 75 percent. The average annual precipitation is about 10 inches and the mean annual air temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xerollic Calciorthids

Typical pedon: Amtoft very gravelly loam located in an area of map unit 1540. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent pebbles and 5 percent cobbles.

A--0 to 4 inches; light brownish gray (10YR 6/2) very gravelly loam, brown (10YR 5/3) moist; strong fine granular structure; soft, very friable, sticky and slightly plastic; many very fine, fine and few medium roots; many very fine interstitial pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk1--4 to 10 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, sticky and slightly plastic; many very fine, fine, few medium and coarse roots; many fine tubular pores; rock fragments are continuously lime coated with 4 millimeter thick pendants on undersides; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bk2--10 to 15 inches; brown (10YR 5/3) extremely gravelly loam, dark brown (10YR 4/3) moist; slightly hard, friable, sticky and slightly plastic; common very fine roots; many very fine and common fine tubular pores; rock fragments are continuous lime coated with 4 millimeter thick pendants on undersides; 65 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt irregular boundary.

R--15 inches; limestone.

Type location: Elko County, Nevada; approximately 1 1/2 miles north of Ferber Reservoir number 1; 700 feet

south and 1,400 feet west of the northeast corner of section 30, T.28 N., R.70 E.; (40 degrees, 16 minutes, 27 seconds north latitude and 114 degrees, 06 minutes, 40 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry between a depth of 8 inches and bedrock. In 7 out of 10 years they are dry in all parts of the moisture control section 70 to 85 days during the summer and are continually moist 60 to 75 days during the winter and early spring.
Soil temperature: 47 to 59 degrees F.
Depth to bedrock: 10 to 20 inches.
Calcic horizon: 6 to 11 inches thick.
Control section:
Clay content--12 to 27 percent.
Rock fragments--35 to 80 percent.
Calcium carbonate equivalent--More than 40 percent, including the lime in the rock fragments of less than 20 millimeter size, between a depth of 10 inches and bedrock.

A horizon:
Hue--2.5Y, 10YR, or 7.5YR.
Value--5 through 7 dry, 3 through 5 moist, dry value of 5 and moist values of 3 occur within 4 inches of the surface in some pedons.
Chroma--2 or 3.
Reaction--Mildly alkaline to strongly alkaline.
Calcium carbonate equivalent--20 to 40 percent.

Bk horizon:
Hue--2.5Y, 10YR, or 7.5YR.
Value--5 through 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Reaction--Moderately alkaline or strongly alkaline.
Textures--Very flaggy loam, extremely flaggy loam, extremely flaggy fine sandy loam, very cobbly loam, extremely cobbly loam, very gravelly loam, extremely gravelly loam and very gravelly fine sandy loam.
Rock fragments--35 to 80 percent, mainly limestone flagstones, cobbles, and pebbles.
Calcium carbonate equivalent--40 to 80 percent.
Consistence--Soft to slightly hard, very friable or friable, sticky to slightly sticky and slightly plastic or plastic.

Appian Series

The Appian series consists of very deep, well drained soils that formed in alluvium over lacustrine sands. Appian soils are on lake plain terraces. 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-loamy over sandy or sandy-skeletal, mixed, mesic Typic Natrargids

Typical pedon: Appian loam located in an area of map unit 1360. (Colors are for dry soil unless otherwise noted.)

A1--0 to 3 inches; light gray (2.5Y 7/2) loam, dark grayish brown (2.5Y 4/2) moist; moderate medium and coarse platy structure; hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; many fine and medium vesicular and common fine and very fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.
A2--3 to 9 inches; light gray (2.5Y 7/2) loam, dark grayish brown (2.5Y 4/2) moist; weak fine granular structure; slightly hard, very friable, sticky and slightly plastic; common fine, very fine and few medium roots; common fine tubular and interstitial pores; strongly effervescent; strongly alkaline (pH 8.7); abrupt smooth boundary.
Btn--9 to 12 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; moderate fine and medium prismatic structure; hard, friable, sticky and plastic; few fine, very fine and medium roots; common fine and very fine tubular pores; few thin clay films on faces of peds and lining pores; strongly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.
Btnk--12 to 19 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; moderate medium and coarse prismatic structure; hard, firm, sticky and plastic; few fine and very fine roots; common fine tubular pores; few thin clay films on faces of peds and lining pores; few fine filaments of lime; strongly effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.
2C1--19 to 27 inches; pale olive (5Y 6/3) loamy fine sand, olive (5Y 5/3) moist; single grain; loose, nonsticky and nonplastic; common fine interstitial pores; few fine distinct light olive brown (2.5Y 5/6) iron mottles; very strongly alkaline (pH 9.6); clear wavy boundary.
2C2--27 to 60 inches; pale yellow (5Y 7/3) sand, olive (5Y 5/3) moist; single grain; loose, nonsticky and nonplastic; common fine interstitial pores; few fine distinct light olive brown (2.5Y 5/6) iron mottles; very strongly alkaline (pH 9.6).

Type location: Elko County, Nevada; approximately 6 miles southeast of Tobar, Nevada in the Independence Valley; located in an unsectionized area 5 miles east of

the southeast corner of section 12, T.34 N., R.62 E.; (40 degrees, 50 minutes, 18 seconds north latitude and 114 degrees, 49 minutes, 02 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist for short periods in winter and early spring, dry May through October.
Soil temperature: 53 to 57 degrees F.
Combined thickness of A and Btn horizons: 7 to 19 inches.
Depth to sandy 2C horizon: 7 to 19 inches.

A horizons:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 3 or 4 moist.
Chroma--1 or 2.
Reaction--Moderately alkaline or strongly alkaline.

Btnk horizon:
Hue--10YR, 7.5YR, or 2.5Y.
Value--4 through 6 dry, 4 or 5 moist.
Chroma--2 through 4.
Texture--Dominantly clay loam with sandy clay loam common in some pedons.
Clay content--27 to 35 percent.
Exchangeable sodium--20 to 50 percent.
Structure--Moderate or strong, fine through coarse, columnar or prismatic; parting to subangular blocky in some pedons.
Consistence--Hard to very hard dry; friable or firm moist.
Reaction--Strongly alkaline or very strongly alkaline.
Other features--Few or common, fine or medium white lime or gypsum segregations and filaments. Subhorizons in some pedons lack secondary lime.

2C horizons:
Hue--5Y, 2.5Y, 10YR or 7.5YR.
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 or 3.
Texture--Stratified; predominantly sand with strata of coarse sand, fine sand, loamy sand, loamy fine sand, fine sandy loam, or sandy loam.
Structure--Massive or single grain.
Consistence--Loose to slightly hard.
Rock fragments--5 to 15 percent pebbles; thin strata with up to 75 percent pebbles in some pedons.
Relict iron mottles--Few to many, fine to large, faint to prominent high chroma with hue of 10YR, 7.5YR or 5YR.
Reaction--Mildly alkaline to very strongly alkaline.
Effervescence--Noneffervescent to violently effervescent.

Armespan Series

The Armespan series consists of very deep, well drained soils that formed in mixed alluvium. Armespan soils are on fan piedmont remnants and beach plains. Slopes are 2 to 15 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 Durixerollic Calciorthids

Typical pedon: Armespan very gravelly sandy loam, located in an area of map unit 1580. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles.

A1--0 to 7 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; soft, very friable, sticky and slightly plastic; common very fine, fine, and few medium and coarse roots; many interstitial and few very fine vesicular pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
Bk1--7 to 11 inches; pale brown (10YR 6/3) gravelly loam, yellowish brown (10YR 5/4) moist; moderate coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and few medium and coarse roots; many interstitial and few very fine tubular pores; few 2 millimeter thick lime coating and pendants on undersides of pebbles; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk2--11 to 21 inches; white (10YR 8/2) gravelly loam, very pale brown (10YR 7/4) moist; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many interstitial and common very fine tubular pores; many 2 millimeter thick lime coating and pendants on undersides of pebbles; many coarse soft masses of lime; 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.
Bqk--21 to 32 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many interstitial pores; common 2 millimeter thick lime and silica coats and pendants on

undersides of pebbles; 30 percent discontinuous silica and lime cementations; few fine soft masses of lime; 55 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

C--32 to 60 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; many interstitial pores; many 2 millimeter thick lime coating and pendants on undersides of rock fragments; few fine soft masses of lime; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

Type location: Elko County, Nevada; approximately 3 miles southeast of Ferguson Springs Maintenance Station; 1,600 feet south and 1,500 feet west of the northeast corner of section 15, T.29 N., R.69 E.; (40 degrees, 23 minutes, 15 seconds north latitude and 114 degrees, 10 minutes, 06 seconds west longitude.)

Range in characterisicts:

Soil moisture: Usually dry, moist in winter and spring, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.
Soil temperature: 53 to 59 degrees F.
Depth to Bk horizon: 4 to 10 inches.
Thickness of calcic horizon: 15 to 35 inches.
Control section:
Clay content--10 to 18 percent.
Rock fragments--Averages 35 to 60 percent.
Reaction--Moderately alkaline or strongly alkaline.
Effervescence--Strongly effervescent or violently effervescent throughout.

A horizon:
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 or 3.

Bk horizons:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4 dry or moist.
Texture--Sandy loam or loam.
Consistence--Soft or slightly hard dry, very friable or friable moist, nonsticky or slightly sticky and nonplastic or slightly plastic, wet.
Clay content--12 to 18 percent.
Rock fragments--15 to 35 percent, dominantly pebbles.
Structure--Massive, weak to moderate platy or subangular blocky.
Secondary lime accumulation--Soft powdery lime throughout horizon. Some pedons have few to many 2 millimeter lime coating and pendants on underside of pebbles.
Calcium carbonate equivalent--10 to 35 percent.

Bqk horizon:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4 dry or moist.
Texture--Sandy loam, coarse sandy loam.
Clay content--10 to 18 percent.
Rock fragments--35 to 60 percent, predominantly pebbles.
Calcium carbonate equivalent--(less than 20 millimeter fraction) 10 to 35 percent.
Consistence--Loose to hard, dry; loose to friable, moist; nonsticky to slightly sticky and nonplastic to slightly plastic wet.
Other features--20 to 50 percent weak to strong discontinuous silica-lime cementation as plates and pendants on undersides of rock fragments. Some pedons have few fine soft masses of lime.

C horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3 dry or moist.
Texture--Loamy sand, loamy coarse sand.
Clay content--5 to 10 percent.
Rock fragments--35 to 60 percent, predominantly pebbles.
Structure--Massive or single grain.
Other features--Lime pendants on undersides of rock fragments. Some pedons have few fine soft masses of lime.
Consistence--Loose to hard, dry; loose to friable, moist.

Atlow Series

The Atlow series consists of shallow, well drained soils that formed in residuum from rhyolite and andesite. Atlow soils are on hills. Slopes are 4 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

Typical pedon: Atlow very gravelly loam located in an area of map unit 620. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 35 percent pebbles, 15 percent cobbles, and 1 percent stones.

A1--0 to 1 inches; light gray (10YR 7/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thin

platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine to coarse roots; many very fine and fine vesicular pores; 35 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.4); clear smooth boundary.

A2--1 to 5 inches; light gray (10YR 7/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate fine subangular blocky structure parting to strong very fine granular; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine to coarse roots; common very fine tubular pores; 30 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.4); clear wavy boundary.

Bt1--5 to 10 inches; very pale brown (10YR 7/3) 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 few fine to coarse roots; common very fine tubular pores; common thin clay films lining pores and on faces of peds; 25 percent pebbles, 15 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bt2--10 to 18 inches; very pale brown (10YR 7/3) very cobbly clay loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, very friable, sticky and plastic; few very fine to coarse roots; common very fine tubular pores; common thin clay films lining pores and on faces of peds; 25 percent pebbles, 20 percent cobbles, and 5 percent stones; thin lime pendants on undersides of rock fragments; strongly alkaline (pH 8.6); abrupt wavy boundary.

R--18 inches; andesite; few fine roots in fractures.

Type location: Elko County, Nevada; approximately 700 feet north and 1,150 feet west of the southeast corner of section 13, T.26 N., R.61 E.; (40 degrees, 07 minutes, 28 seconds north latitude and 115 degrees, 02 minutes, 22 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist mid fall through spring, dry summer through early fall. Xeric Aridic soil moisture regime.
Soil temperature: 48 to 52 degrees F.
Solum thickness: 14 to 20 inches.
Depth to bedrock: 14 to 20 inches.

A horizons:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 or 3.
Reaction--Mildly alkaline or moderately alkaline.

Bt horizons:
Value--5 through 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Texture--Very gravelly clay loam, or very cobbly clay loam or very gravelly sandy clay loam.
Clay content--27 to 35 percent.
Rock fragments--35 to 50 percent, dominantly pebbles and cobbles.
Structure--Angular blocky, subangular blocky.
Reaction--Moderately alkaline or strongly alkaline.
Secondary lime accumulation--The matrix is noncalcareous. Thin lime coatings are on the underside of rock fragments.
Consistence--Slightly hard or hard, slightly sticky or sticky, slightly plastic or plastic.

Automal Series

The Automal series consists of very deep, well drained soils that formed in alluvium from limestone, dolomite, and shale. Automal soils are on fan piedmont remnants and beachplains. Slopes are 2 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Durixerollic Calciorthids

Typical pedon: Automal gravelly silt loam, located in an area of map unit 504. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 35 percent pebbles.

A1--0 to 2 inches; light brownish gray (10YR 6/2) gravelly silt loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure parting to weak fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine through coarse roots; many very fine vesicular pores; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 4 inches; light brownish gray (10YR 6/2) gravelly silt loam; brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine through coarse roots; common very fine tubular pores; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

AB--4 to 6 inches; light brownish gray (10YR 6/2) gravelly silt loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine and few fine through coarse roots; common very fine tubular

pores; many thin lime pendants on undersides of pebbles; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk--6 to 8 inches; pale brown (10YR 6/3) very gravelly silt loam; dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine and few fine through medium roots; common very fine tubular pores; many thin to moderately thick lime pendants on undersides of rock fragments; 40 percent pebbles, 10 percent cobbles, 5 percent stones; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Bqk1--8 to 29 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; very hard, very firm and brittle, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 40 percent discontinuous strong lime cementation in vertical bands; continuous brittle matrix; many thin to moderately thick lime pendants on undersides of rock fragments; 55 percent pebbles, 10 percent cobbles, and 5 percent stones; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

2Bqk2--29 to 49 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; hard, firm and brittle, slightly sticky and slightly plastic; many very fine tubular pores; 10 percent discontinuous strong lime and silica cementation in vertical bands; continuous brittle matrix; common thin to moderately thick lime pendants on undersides of rock fragments; common fine soft masses of lime; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.9); clear wavy boundary.

3Bqk--49 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine interstitial pores; 50 percent discontinuous weak lime and silica cementation; common thin to moderately thick lime pendants on undersides of rock fragments; 70 percent pebbles and 5 percent stones; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 10 miles south of Currie, about 3,200 feet south and 2,400 feet east of the northwest corner of section 17, T.26 N., R.64 E.; (40 degrees, 07 minutes, 35 seconds north latitude and 114 degrees, 46 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry June through October. Xeric Aridic soil moisture regime.
Soil temperature: 47 to 52 degrees F.
Depth to calcic horizon: 5 to 12 inches.
Depth to continuous brittle matrix: 5 to 20 inches.
Reaction: Moderately alkaline or strongly alkaline.
Control section:
Clay content--3 to 20 percent.
Rock fragments--50 to 80 percent, of which 40 to 60 percent are pebbles and 10 to 20 percent are cobbles and stones.

A horizons:
Value--6 or 7; 4 or 5 moist.
Chroma--2 through 4.

Bk horizon:
Chroma--3 or 4.
Texture--Sandy loam and silt loam. Some pedons have coarse sandy loam in the lower part.
Consistence--Very friable or friable
Other features--Some pedons have few lime and silica cemented concretions.

Bqk horizons:
Value--6 through 8 dry; 4 through 6 moist.
Chroma--2 through 4.
Consistence--Hard or very hard, firm or very firm; slightly hard and very friable in lower subhorizons of some pedons.

Belsac Series

The Belsac series consists of moderately deep, well drained soils that formed in residuum and colluvium from siltstone, limestone and dolomite. Belsac soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, mixed Pachic Cryoborolls

Typical pedon: Belsac very gravelly loam in an area of map unit 140. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles and 5 percent cobbles.

A1--0 to 4 inches; dark gray (10YR 4/1), very gravelly loam, black (10YR 2/1) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; 35 percent pebbles; mildly alkaline (pH 7.4); clear wavy boundary.
A2--4 to 9 inches; dark gray (10YR 4/1) very gravelly loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; few thin strongly effervescent lime coating on undersides of pebbles; 35 percent pebbles; neutral (pH 7.2); clear wavy boundary.
A3--9 to 21 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; few thin strongly effervescent lime coating on undersides of pebbles; 40 percent pebbles; neutral (pH 7.2); clear wavy boundary.
Bk--21 to 35 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; 1 to 2 millimeter thick lime coating and pendants on undersides of pebbles; 55 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.
Cr--35 inches; fractured siltstone with lime coating along fractures.

Type location: Elko County, Nevada; about 21 miles east of Wells, Nevada; approximately 1,000 feet south and 2,500 feet west of the northeast corner of section 1, T.37 N., R.65 E.; (41 degrees, 07 minutes, 22 seconds north latitude and 114 degrees, 34 minutes, 20 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, dry late July to October.
Soil temperature: 40 to 45 degrees F.
Summer soil temperature: 55 to 59 degrees F.
Mollic epipedon thickness: 20 to 40 inches.
Depth to bedrock: 25 to 40 inches.
Depth to lime accumulation: 20 to 25 inches.
Control section:
Clay content--18 to 25 percent.
Rock fragments--Averages 35 to 60 percent, mainly pebbles with up to 10 percent cobbles.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 through 3 moist.
Reaction--Neutral or mildly alkaline.
Other features--Few thin lime coats are common on rock fragments in lower subhorizon above the Bk horizon.

Bk horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3 moist.
Structure--Fine through coarse subangular blocky
Consistence--Soft or slightly hard dry.
Reaction--Mildly alkaline or moderately alkaline.
Effervescence--Strongly effervescent or violently effervescent.
Calcium carbonate equivalent--2 to 10 percent.

Benin Series

The Benin series consists of very deep, well drained soils that formed in mixed alluvium over lacustrine sediments. Benin soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Typic Torriorthents

Typical pedon: Benin silty clay loam, located in an area of map unit 1240. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; light gray (5Y 7/1) silty clay loam, light olive gray (5Y 6/2) moist; strong very thick platy structure parting to moderate medium; hard, friable, very sticky and very plastic; few very fine vesicular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
A2--4 to 7 inches; light gray (5Y 7/1) silty clay, light olive gray (5Y 6/2) moist; moderate thin platy structure; slightly hard, very friable, very sticky and very plastic; few very fine and fine roots; common very fine vesicular and tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
2Ck--7 to 20 inches; light gray (5Y 7/2) silty clay, light olive gray (5Y 6/2) moist; strong coarse prismatic structure parting to very fine granular; slightly hard, friable, very sticky and very plastic; common very fine to medium roots; common very fine and few fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); gradual smooth boundary.
2Ckn--20 to 41 inches; light gray (5Y 7/2) silty clay, light olive gray (5Y 6/2) moist; strong coarse prismatic structure parting to very fine granular; slightly hard,

friable, very sticky and very plastic; few fine roots; few fine tubular pores; few gypsum soft masses; many lime coating on faces of peds; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
3C--41 to 60 inches; light gray (5Y 7/2) silty clay, light olive gray (5Y 6/2) moist; strong coarse prismatic structure parting to very fine angular blocky; slightly hard, friable, very sticky and very plastic; few fine roots; few fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Type location: Elko County, Nevada; approximately 7 miles west of Hogan Tunnel in the south end of Independence Valley, about 450 feet east and 720 feet south of the northwest corner of section 13, T.33 N., R.64 E.; (40 degrees, 44 minutes, 39 seconds north latitude and 114 degrees, 41 minutes, 52 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, but is intermittently moist in winter and spring and dry in summer and fall.
Soil temperature: 47 to 52 degrees F.
Depth to lacustrine materials: 1 to 10 inches.
Other features--Electrical conductivity is 4 to 32mmhos. SAR--15 to 60 at some depth between 1 to 36 inches.

A horizon:
Value--6 or 7 dry.
Chroma--1 or 2.
Reaction--Moderately alkaline to very strongly alkaline.
Effervescence--Noneffervescent to strongly effervescent.

2Ckn, 2C, and 3C horizons:
Hue--10YR, 2.5Y or 5Y.
Value--6 through 8 dry, 4 through 6 moist.
Chroma--2 or 3.
Texture--Silty clay or clay.
Structure--Weak through strong, medium or coarse prismatic that commonly parts to strong medium or coarse angular blocky or angular, or is massive.
Reaction--Moderately alkaline to strongly alkaline.
Other features--Some pedons have few to many silica coating on faces of peds. Gypsum is common in some subhorizon of most pedons. Some pedons have up to 10 percent durinodes.

Bijorja Series

The Bijorja series consists of moderately deep, well drained soils that formed in residuum and colluvium from granitic rocks. Bijorja soils are on hills. Slopes are 8 to 30 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Xerollic Camborthids

Typical pedon: Bijorja gravelly sandy loam, located in an area of map unit 440. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by 20 percent pebbles.

A--0 to 4 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/3) moist; strong thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; common very fine and fine vesicular and few very fine tubular pores; 20 percent pebbles; mildly alkaline (pH 7.6); abrupt smooth boundary.
Bw--4 to 10 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine, fine, few medium and coarse roots; few very fine vesicular pores; 15 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.
Bk1--10 to 15 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; few very fine and fine vesicular pores; few thin lime coating on undersides of pebbles; 20 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
Bk2--15 to 25 inches; light gray (2.5Y 7/2) gravelly sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine and few fine vesicular pores; 15 percent discontinuous weak lime cementation; few thin lime coating on undersides of coarse fragments; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
Cr--25 inches; decomposed granitic bedrock.

Type location: Elko County, Nevada; approximately 17 miles northwest of Wendover, Nevada; about 400 feet south and 1,800 feet east of the northwest corner of

section 22, T.35 N., R.68 E.; (40 degrees, 54 minutes, 18 seconds north latitude, and 114 degrees, 16 minutes, 40 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer and fall, except for 10 to 20 days cumulative between July and October due to convection storms.
Soil temperature: 53 to 57 degrees F.
Depth to soft rock: 20 to 40 inches.
Control section:
Clay content--10 to 18 percent.
Rock fragments--15 to 35 percent over one-half of which are 2 to 5 millimeter diameter pebbles.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3 dry or moist.
Reaction--Neutral or mildly alkaline.

Bw horizon:
Value--3 or 4 moist
Chroma--3 or 4 dry or moist.
Consistence--Soft or slightly hard dry, nonsticky or slightly sticky wet.
Reaction--Neutral to moderately alkaline.

Bk horizons:
Structure--Massive or subangular blocky.
Consistence--Soft or slightly hard dry.
Effervescence--Strongly effervescent or violently effervescent.
Reaction--Mildly alkaline or moderately alkaline.

Blimo Series

The Blimo series consists of very deep, well drained soils that formed in mixed alluvium. Blimo soils are on beach plains and fan skirts. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Xeric Torriorthents

Typical pedon: Blimo silt loam in an area of map unit 847. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 5 percent pebbles.

A1--0 to 3 inches; light gray (10YR 7/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine vesicular and tubular pores; violently effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

A2--3 to 7 inches; light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine, medium and coarse roots; many very fine interstitial pores; 10 percent pebbles; thin lime coating on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bk--7 to 12 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine, medium and coarse roots; many very fine interstitial pores; 15 percent pebbles; thin lime coating on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bqk1--12 to 16 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine and medium roots; common very fine interstitial and tubular pores; 30 percent discontinuous weak silica cementation in vertical bands with 10 percent durinodes; 15 percent pebbles; thin lime coating on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bqk2--16 to 25 inches; white (10YR 8/2) gravelly sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm and brittle, nonsticky and nonplastic; common very fine and few fine and medium roots; many very fine tubular pores; continuous brittle matrix 30 percent durinodes 10 to 20 millimeters in diameter; 15 percent pebbles; thin lime coating on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

Bqk3--25 to 40 inches; white (10YR 8/2) gravelly sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm and brittle, nonsticky and nonplastic; common very fine and few fine and medium roots; many very fine interstitial and tubular pores; continuous brittle matrix; 15 percent pebbles; moderately thick to thick lime and silica coating and few pendants on pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Bqk4--40 to 55 inches; white (10YR 8/2) gravelly coarse sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial and tubular pores; 20 percent discontinuous

weak silica cementation; 15 percent pebbles; moderately thick to thick lime and silica coating and few pendants on pebbles; violently effervescent; strongly alkaline (pH 8.8);abrupt wavy boundary.

Bqk5--55 to 60 inches; white (10YR 8/2) extremely gravelly loamy coarse sand, light yellowish brown (10YR 6/4) moist; massive; very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; 40 percent discontinuous weak silica cementation; 70 percent pebbles; thick lime coating on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.8).

Type location: Elko County, Nevada; approximately 1,900 feet north and 2,000 feet west of the southeast corner of section 6, T.29 N., R.63 E.; (40 degrees, 25 minutes, 08 seconds north latitude and 114 degrees, 54 minutes, 31 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist late fall through early spring, dry mid spring through mid fall.

Soil temperature: 47 to 52 degrees F.

Calcium carbonate equivalent: 5 to 15 percent by weight of the 20 millimeter fraction, increasing with depth.

Depth to continuous brittle matrix: 10 to 25 inches.

Reaction: Mildly alkaline to strongly alkaline, increasing with depth

Cementation: Subhorizons not continuously brittle due to silica accumulation, contain 20 to 60 percent durinodes or are 20 to 50 percent discontinuous weakly silica cemented.

Control section:

Clay content--12 to 18 percent.
Rock fragments--15 to 35 percent.

A horizons:

Hue--7.5YR or 10YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

Bk horizon:

Hue--7.5YR or 10YR.
Value--6 through 8 dry, 4 or 5 moist.
Chroma--3 or 4.
Structure--Weak coarse subangular blocky or massive.
Texture--Sandy loam, fine sandy loam or coarse sandy loam.
Effervescence--Strongly effervescent or violently effervescent.

Bqk horizons:

Hue--7.5YR or 10YR.
Value--6 through 8 dry, 5 or 6 moist.
Chroma--2 through 4.
Structure--Subangular blocky or massive.
Texture--Stratified sandy loam, coarse sandy loam.
Other features--In some pedons the lower part of the profile contains strata that has 60 to 70 percent pebbles and textures of loamy coarse sand or sand.

Bobs Series

The Bobs series consists of shallow over lime cemented hardpan, well drained soils that formed in alluvium from limestone with a component of loess. Bobs soils are on fan piedmont remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy, carbonatic, frigid, shallow Aridic Petrocalcic Palexerolls

Typical pedon: Bobs very gravelly loam 4 to 15 percent slopes, is located in an area of map unit 562. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 40 percent pebbles.

A1--0 to 1 inch; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine vesicular and few fine tubular pores; common thin lime pendants on undersides of pebbles; 20 percent calcium carbonate equivalent of the less than 20 millimeter fraction; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2--1 to 8 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; common very fine tubular pores; common thin lime pendants on undersides of pebbles; 30 percent calcium carbonate equivalent of the less than 20 millimeter fraction; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A3--8 to 13 inches; brown (10YR 5/3) gravelly silt loam; dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium

roots; common very fine interstitial pores; common thin to moderately thick lime pendants on undersides of pebbles; 35 percent calcium carbonate equivalent of the less than 20 millimeter fraction; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bkm1--13 to 34 inches; white (10YR 8/1) indurated lime hardpan, light gray (10YR 7/2) moist; massive; extremely hard, extremely firm and brittle; common very fine tubular pores; 35 percent krotovinas 1 to 12 inches in diameter of the horizon, that is composed of material the same as that in the 8 to 13 inch layer; 50 percent pebbles and 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Type location: Elko County, Nevada; approximately 8 miles southeast of Odgers Ranch; 1,600 feet north and 1,000 feet east of the southwest corner of section 7, T.26 N., R.63 E.; (40 degrees, 08 minutes, 29 seconds north latitude and 114 degrees, 55 minutes, 04 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in the winter and spring, dry summer and fall. Xeric Aridic soil moisture regime.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon thickness: 7 to 14 inches.
Depth to petrocalcic horizon: 10 to 20 inches.
Reaction: Moderately alkaline or strongly alkaline.
Control section:
Clay content--10 to 20 percent.
Calcium carbonate equivalent--20 to 40 percent of the less than 20 millimeter fraction.
Coarse fragments--15 to 35 percent, mainly pebbles, some of which are pan fragments.

A horizons:
Value--4 or 5 dry, 2 through 4 moist, 2 or 3 when mixed, value of 3.5 or less.
Chroma--1 through 3.

Bkm horizon:
Value--7.5YR or 10YR.
Value--6 through 8 dry, 5 through 7 moist.
Chroma--1 through 4.
Other features--Some pedons have 10 to 35 percent krotovinas 1 to 12 inches in diameter.

Boofuss Series

The Boofuss series consists of very deep, poorly drained soils that formed in mixed alluvium and lacustrine sediments. Boofuss soils are on lake plains and alluvial flats. Slopes are 0 to 2 percent. Mean annual precipitation is about 9 inches and mean annual temperature is about 46 degrees F.

Taxonomic class: Clayey over loamy, montmorillonitic (calcareous), mesic Typic Halaquepts

Typical pedon: Boofuss silty clay in an area of map unit 1441. (Colors are for dry soil unless otherwise noted.)

A1--0 to 3 inches; white (10YR 8/1) silty clay, gray (10YR 6/1) moist; moderate fine granular structure; slightly hard, friable, sticky and plastic; many very fine and fine roots; many very fine interstitial pores; many salt crystals on faces of peds; violently effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

A2--3 to 10 inches; light gray (10YR 7/2) silty clay, pale brown (10YR 6/3) moist; strong coarse prismatic structure; hard, friable, very sticky and very plastic; few very fine roots; many very fine and fine tubular pores; common salt crystals on faces of peds; violently effervescent; very strongly alkaline (pH 9.2); clear wavy boundary.

Bk--10 to 27 inches; white (2.5Y 8/1) silty clay, light gray (10YR 7/2) moist; strong coarse prismatic structure; hard, friable, very sticky and very plastic; few very fine roots; many very fine and fine tubular pores; common salt crystals on faces of peds; violently effervescent; very strongly alkaline (pH 9.2); abrupt wavy boundary.

2Ckq1--27 to 47 inches; white (2.5Y 8/1) silt loam, light gray (2.5Y 7/2) moist; common fine distinct yellowish brown (10YR 5/6) mottles; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine, fine and common medium tubular pores; common medium soft masses of lime and lime coating on faces of peds; few silica nodules 1 inch in diameter; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

2Ckq2--47 to 60 inches; white (2.5Y 8/1) silt loam, white (2.5Y 8/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine tubular pores; few silica nodules 1 inch in diameter; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 1 mile northeast of the Warm Creek Ranch; about 1,300 feet south and 2,400 feet east of the northwest corner

of section 7, T.33 N., R.62 E.; (40 degrees, 45 minutes, 35 seconds north latitude and 115 degrees, 01 minute, 03 seconds west longitude.)

Range in characteristics:

Soil moisture: A and B horizons are dry in mid-summer to early fall, underlying material is moist year round. The soil is saturated at depths of 1.0 to 2.5 feet most years from January to June.
Soil temperature: 47 to 52 degrees F.
Salinity: Greater than 16 millimhos/cm decreasing with depth.
Control section:
Clay content--35 to 50 percent in the upper part and 8 to 15 percent in the lower part.
Depth to contrasting layer--15 to 35 inches.

A horizons:
Hue--10YR, 2.5Y or 5Y.
Value--7 or 8 dry, 6 or 7 moist.
Chroma--1 through 3.
Reaction--Strongly alkaline or very strongly alkaline.
SAR--50 to 80.

Bk horizon:
Hue--10YR, 2.5Y or 5Y.
Value--7 or 8 dry, 6 or 7 moist.
Chroma--1 or 2.
Texture--Stratified silty clay loam, silty clay and clay.
Structure--Medium or coarse prismatic.
Consistence--Slightly hard or hard dry, friable to firm moist.
Clay content--35 to 50 percent.
Reaction--Strongly alkaline or very strongly alkaline.
SAR--50 to 80.

2Ckq horizon:
Hue--10YR or 2.5Y.
Value--7 or 8 dry, 6 through 8 moist.
Texture--Stratified fine sandy loam, loam and silt loam.
Structure--Platy, prismatic, subangular blocky or massive.
Consistence--Very friable or friable, moist.
Clay content--8 to 15 percent.
SAR--10 to 30 percent.
Other features--Some pedons have thin strata of coarse sand or sand below a depth of 50 inches. Few to common silica nodules.

Bullump Series

The Bullump series consists of deep and very deep, well drained soils that formed in colluvium from rhyolite with a component of loess. Bullump soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Pachic Argixerolls

Typical pedon: Bullump very gravelly loam located in an area of map unit 1030. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A1--0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots; many very fine interstitial and tubular pores; 35 percent pebbles; mildly alkaline (pH 7.6); abrupt smooth boundary.
A2--3 to 10 inches; dark grayish brown (10YR 4/2) 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 common fine and medium roots; many very fine interstitial and tubular pores; 45 percent pebbles; mildly alkaline (pH 7.6); abrupt smooth boundary.
Bt1--10 to 27 inches; dark grayish brown (10YR 4/2) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky; slightly hard, friable, sticky and plastic; many very fine and common fine and medium roots; many very fine interstitial and tubular pores; few thin clay films lining pores; 35 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.
Bt2--27 to 37 inches; dark grayish brown (10YR 4/2) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and few fine and medium roots; many very fine interstitial and tubular pores; few thin clay films on faces of peds and lining pores; 35 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.
Bt3--37 to 49 inches; brown (10YR 4/3) very gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; weak coarse subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine roots; many very fine interstitial pores; few thin clay films on

faces of peds and lining pores; 40 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.
R--49 inches; rhyolite.

Type location: Elko County, Nevada; located in the Dolly Varden Mountains; approximately 422 feet south and 1,530 feet west of the projected northeast corner of section 32, T.29 N., R.66 E.; (40 degrees, 21 minutes, 04 seconds north latitude and 114 degrees, 32 minutes, 37 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and early summer, dry late July to early October. Additional soil moisture may be supplied by lateral water movement in the lower part of the profile.
Soil temperature: 43 to 47 degrees F.
Mollic epipedon thickness: 20 to 40 inches and may include the upper part of the argillic horizon.
Reaction: Slightly acid through mildly alkaline.
Other features: Some pedons have a C horizon that is below 40 inches.
Depth to bedrock: 40 to 80 inches.
Control section:
Clay content--25 to 35 percent.
Rock fragments--35 to 55 percent, mainly pebbles with some cobbles.

A horizons:
Value--3 through 5 dry, 2 or 3 moist.
Chroma--1 through 3.
Other features--Organic matter 2 to 6 percent.

Bt horizons:
Hue--7.5YR or 10YR.
Value--4 through 6 dry, 2 through 4 moist.
Chroma--2 through 6.
Texture--Loam, clay loam, or sandy clay loam.
Clay content--25 to 35 percent.
Rock fragments--35 to 55 percent, mainly pebbles.
Structure--Fine through coarse subangular blocky or angular blocky.
Consistence--Slightly sticky or sticky and slightly plastic or plastic, wet.
Other features--Uncoated sand grains and few silt coats lining pores occur in some pedons. Some pedons have few distinct mottles or manganese stains on pebbles.

Cavehill series

The Cavehill series consists of moderately deep, well drained soils that formed in residuum and colluvium from limestone and dolomite. Cavehill soils are on mountains. 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, carbonatic, frigid Typic Calcixerolls

Typical pedon: Cavehill very gravelly silt loam in an area of map unit 575. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A1--0 to 4 inches; grayish brown (10YR 5/2) very gravelly silt 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; common very fine tubular and interstitial pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.
A2--4 to 12 inches; brown (10YR 5/3) very gravelly silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine and fine tubular pores; few lime coats on undersides of rock fragments; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.
Bk--12 to 30 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine fine and few medium roots; many very fine and common fine tubular pores; many moderately thick lime coats on undersides of rock fragments; 45 percent pebbles and 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
2R--30 inches; limestone

Type location: Elko County, Nevada; approximately 18 miles northwest of Currie, Nevada; about 800 feet south and 800 feet east of the northwest corner of section 33, T.31 N., R.63 E.; (40 degrees, 31 minutes, 38 seconds north latitude and 114 degrees, 52 minutes, 18 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist; dry from about mid July through mid October. Xeric Aridic soil moisture regime.

Soil temperature: 43 to 47 degrees F.
Mollic epipedon thickness: 12 to 20 inches.
Depth to bedrock: 20 to 40 inches.
Control section:
Carbonates--Averages 40 to 60 percent calcium carbonate equivalent with the upper part ranging from 15 to 50 percent and the lower part ranging from 50 to 80 percent.
Clay content--18 to 27 percent.
Rock fragments--35 to 60 percent, mainly pebbles and cobbles, with stones common in some pedons.
Reaction--Moderately alkaline or strongly alkaline.

A horizons:
Value--4 or 5 dry.
Chroma--2 or 3.
Effervescence--Effervescent after mixing to a depth of 7 inches in horizons above 10 inches and strongly or violently effervescent below 10 inches.
Other features--Thick lime pendants are on some rock fragments in the lower A horizon in some pedons.

Bk horizon:
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 or 3.
Rock fragments--Averages 35 to 60 percent.
Structure--Subangular blocky or it is massive.
Textures--Silt loam or loam.
Other features--Weak discontinuous lime cementation in most pedons and thin to thick lime pendants on undersides of rock fragments. Some pedons have thin subhorizons directly above the bedrock that are gravelly loam with 25 to 35 percent pebbles and cobbles.

Chen Series

The Chen series consists of shallow, well drained soils that formed in residuum from andesite and rhyolite. Chen soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, frigid Lithic Argixerolls

Typical pedon: Chen very gravelly loam located in an area of map unit 680. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles, 15 percent cobbles, and 2 percent stones.

A--0 to 3 inches; grayish brown (10YR 5/2) very gravelly loam, very dark brown (10YR 2/2) moist; weak coarse platy parting to strong 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 tubular and common very fine interstitial pores; 25 percent pebbles and 10 percent cobbles; neutral (pH 6.8); abrupt smooth boundary.
Bt1--3 to 6 inches; grayish brown (10YR 5/2) very cobbly clay, very dark grayish brown (10YR 3/2) moist; strong medium subangular blocky structure; hard, friable, very sticky and plastic; common very fine, fine, and few medium roots; common very fine and fine tubular pores; few thin clay films on faces of peds; 10 percent pebbles and 40 percent cobbles; neutral (pH 7.0); clear smooth boundary.
Bt2--6 to 16 inches; brown (10YR 4/3) very cobbly clay, dark brown (10YR 3/3) moist; moderate fine angular blocky structure; hard, friable, sticky and very plastic; common very fine, fine, and few medium roots; common very fine and fine tubular pores; common moderately thick clay films on faces of peds and few thin clay films lining pores; 15 percent pebbles, 35 percent cobbles; neutral (pH 6.8).
R--16 inches; fractured welded tuff.

Type location: Elko County, Nevada; about 6 miles north of Silver Zone Pass in the Toano Mountains; approximately 1,964 feet north and 132 feet east of an unsectionized area of the southwest corner of section 8, T.36 N., R.68 E.; (41 degrees, 00 minutes, 58 seconds north latitude and 114 degrees, 18 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall.
Soil temperature: 43 to 47 degrees.
Mollic epipedon thickness: 7 to 17 inches and generally includes all or the upper part of the argillic horizon.
Depth to bedrock: 12 to 20 inches.
Reaction: Slightly acid through mildly alkaline throughout.

A horizon:
Value--4 through 6 dry (less than 5.5 when the surface 7 inches are mixed), 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:
Hue--7.5YR or 10YR with 5YR common in areas with high iron concentrations in the parent material.

Value--4 or 5 dry, 3 or 4 moist.
Chroma--2 through 4.
Texture--Clay, some pedons have thin Bt1 horizons with clay loam.
Clay content--Average 40 to 55 percent.
Rock fragments--40 to 65 percent pebbles and cobbles normally increasing with depth.
Structure--Weak to strong, fine or medium angular or subangular blocky or platy.

Chiara Series

The Chiara series consists of shallow to duripan, well drained soils that formed in loess high in volcanic ash over mixed alluvium. Chiara soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is 48 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Xerollic Durorthids

Typical pedon: Chiara silt loam, located in an area of map unit 279. (Colors are for dry soil unless otherwise noted.)

A--0 to 4 inches; light brownish gray (10YR 6/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine vesicular pores; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bqk--4 to 11 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and few medium and coarse roots; common very fine and fine tubular pores; 30 percent brittle durinodes 1 inch in diameter; 5 percent pebbles; few thin lime filaments; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

2Bqkm--11 to 60 inches; very pale brown (10YR 7/3) indurated duripan with continuous 2 millimeter thick laminar cap, yellowish brown (10YR 5/4) moist; massive; extremely hard, extremely firm; few fine and medium roots in fractures; violently effervescent; moderately alkaline.

Type location: Elko County, Nevada; approximately 4 1/2 miles east of the Ruby Valley Forest Service Station; about 1,000 feet north and 100 feet east of the southwest corner of section 19, T.33 N., R.61 E.; (40 degrees, 43 minutes, 20 seconds north latitude and 115 degrees, 08 minutes, 22 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry from summer and fall.
Soil temperature: 47 to 53 degrees F.
Depth to duripan: 10 to 20 inches.
Other features: Depth to lime is 4 to 15 inches.
Control section:
Clay content--5 to 18 percent.
Rock fragments--When mixed, up to 5 percent, mainly pebbles, thin subhorizons in some pedons have 4 to 25 percent, comprised mainly of duripan fragments.
Sand--Less than 15 percent fine sand and coarser.

A horizon:
Value--3 or 4 moist.
Chroma--2 or 3.
Reaction--Neutral to moderately alkaline.

Bqk horizon:
Value--6 or 7 dry, 3 through 5 moist.
Texture--Very fine sandy loam, loam or silt loam with 70 to 85 percent silt loam plus very fine sand.
Structure--Subangular blocky or is massive.
Consistence--Very friable or friable, moist; slightly sticky or nonsticky wet.
Cementation--Contains from 20 to 60 percent weakly cemented and brittle durinodes from 0.3 to 1 inch in diameter.
Reaction--Moderately alkaline to strongly alkaline.

Bqkm horizon:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4.
Structure--Massive or thick platy.
Other features--Stratified gravelly and sandy substratums occur below 40 inches in some pedons.

Cleavage Series

The Cleavage series consists of shallow, well drained soils that formed in residuum and colluvium from sandstone and conglomerate. Cleavage soils are on mountains. Slopes are 2 to 15 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 Lithic Argixerolls

Typical pedon: Cleavage very gravelly loam in an area of map unit 400. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 70 percent pebbles and 5 percent cobbles.

A1--0 to 3 inches; brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine interstitial and common very fine tubular pores; 55 percent pebbles; neutral (pH 7.2); abrupt smooth boundary.

A2--3 to 7 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine interstitial and common very fine tubular pores; 50 percent pebbles; neutral (pH 7.2); abrupt smooth boundary.

Bt1--7 to 10 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, 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 as coats, bridging sand grains and lining pores; 50 percent pebbles; neutral (pH 7.2); clear wavy boundary.

Bt2--10 to 15 inches; light brownish gray (10YR 6/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine, fine and medium roots; many very fine and fine tubular pores; common thin clay films coating mineral grains, bridging pebbles, on faces of peds, and lining pores; 55 percent pebbles; neutral (pH 7.2); abrupt wavy boundary.

R--15 inches; conglomerate bedrock.

Type location: Elko County, Nevada; about 21 miles east of Wells, Nevada; approximately 2,000 feet north and 1,500 feet west of the southeast corner of section 1, T.37 N., R.65 E.; (41 degrees, 07 minutes, 00 seconds north latitude and 114 degrees, 34 minutes, 10 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry from July through October for 70 to 120 consecutive days.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon thickness: 7 to 10 inches, does not include Bt horizon.
Depth to bedrock: 14 to 20 inches.

Control section:
Clay content--20 to 35 percent.
Rock fragments--50 to 80 percent, mostly pebbles or cobbles.
Reaction--Neutral or mildly alkaline.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:
Hue--7.5YR or 10YR.
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 through 4.
Texture--Clay loam, loam.
Structure--Subangular blocky or angular blocky or it is massive.
Consistence--Very friable to firm, moist, slightly hard to hard dry, slightly sticky or sticky and slightly plastic or plastic wet.

Cliffdown Series

The Cliffdown series consists of very deep, excessively drained soils that formed in mixed alluvium. Cliffdown soils are on beach plains. Slopes are 2 to 4 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 Typic Torriorthents

Typical pedon: Cliffdown very gravelly sandy loam in an area of map unit 1510. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 35 percent pebbles.

A1--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate coarse platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine vesicular pores; 35 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

A2--2 to 6 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine and medium roots; many very fine interstitial and tubular pores; few thin lime coats on undersides of pebbles; 35 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

C1--6 to 12 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine and medium roots; many very fine interstitial pores; few thin lime coats on undersides of rock fragments; 40 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.9); clear smooth boundary.

C2--12 to 20 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly, plastic; many very fine, few fine roots; many very fine and fine interstitial pores; few thin lime coats on undersides of rock fragments; 40 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

C3--20 to 45 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine interstitial pores; few thin lime coats on undersides of rock fragments; 45 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

C4--45 to 60 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine interstitial pores; few thin lime coats on undersides of rock fragments; 50 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 15 miles south of Wendover, Nevada; about 2,800 feet south and 2,000 feet east of the northwest corner of section 6, T.31 N., R.70 E.; (40 degrees, 35 minutes, 17 seconds north latitude and 114 degrees, 06 minutes, 20 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July to October following convection storms. Typic Aridic soil moisture regime.

Soil temperature: 53 to 59 degrees F.

Effervescence: Slightly effervescent to strongly effervescent, violently effervescent with depth.

Reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--5 to 15 percent.

Rock fragments--Average 35 to 50 percent.

A horizons:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 3 through 5 moist.

Chroma--2 through 4.

C horizons:

Texture--Stratified gravelly sandy loam to very gravelly fine sandy loam.

Consistence--Soft or slightly hard dry, nonsticky to slightly sticky and nonplastic to slightly plastic wet.

Other features--Some pedons have an A horizon with 1/2 unit of value darker than C horizon. Some pedons contain weak Bk horizons. Some pedons have few thin lime coats on pebbles.

Cobre Series

The Cobre series consists of moderately deep, well drained soils that formed in residuum from tuffs with a component of loess and ash. Cobre soils are on hills and fan piedmont remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Ashy, mesic Vitrixerandic Camborthids

Typical pedon: Cobre silt loam in an area of map unit 240. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 10 percent pebbles.

A1--0 to 3 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak coarse platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine vesicular and tubular pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--3 to 7 inches; light gray (10YR 7/2) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine, medium, and coarse roots, many very fine interstitial and tubular pores; few thin lime coats on undersides of pebbles; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--7 to 15 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine, medium and coarse roots; many very fine interstitial pores; few thin lime coats on undersides of pebbles; 10 percent

pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Bqk1--15 to 25 inches; white (10YR 8/2) fine sandy loam, pale brown (10YR 6/3); massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, few fine roots; common very fine tubular pores; 40 percent 5 to 30 millimeter diameter durinodes; common thin lime coats on undersides of pebbles; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

2Bqk2--25 to 34 inches; very pale brown (10YR 8/3) fine sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; few thin lime coats on undersides of pebbles; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear irregular boundary.

Cr--34 to 40 inches; very pale brown (10YR 8/3) platy fractured tuff, light yellowish brown (10YR 6/4) moist.

Type location: Elko County, Nevada; approximately 16 miles northwest of Currie; 1,950 feet west and 1,600 feet north of the southeast corner of section, 23 T.30 N., R.62 E.; (40 degrees, 27 minutes, 44 seconds north latitude and 114 degrees, 56 minutes, 43 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry mid-June through late October for 70 to 100 consecutive days. Xeric Aridic

Soil temperature: 47 to 52 degrees F.

Depth to paralithic contact: 20 to 40 inches.

Reaction: Mildly alkaline or moderately alkaline.

Volcanic ash and glass aggregates: 65 to 80 percent.

Depth to horizons containing durinodes: 11 to 25 inches.

Control section:

Clay content--Averages 8 to 18 percent.
Rock fragments--0 to 15 percent, mainly ashy tuff pebbles.
Texture--Silt loam, loam or very fine sandy loam.
Clay content--15 to 25 percent.

A horizon:

Hue--10YR or 2.5Y.
Value--5 through 7 dry, 3 or 4 moist.
Chroma--2 or 3.
Effervescence--Noneffervescent or slightly effervescent.

Bw horizon:

Hue--10YR or 2.5Y.
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 or 3.
Texture--Silt loam, loam or very fine sandy loam.
Clay content--15 to 25 percent.
Rock fragments--0 to 15 percent, mainly ashy tuff pebbles.
Structure--Subangular blocky or angular blocky.
Effervescence--Noneffervescent to strongly effervescent.

Bq or Bqk horizons:

Hue--2.5Y, 5Y or 10YR.
Value--6 through 8 dry, 4 through 6 moist.
Chroma--2 or 3.
Texture--Sandy loam, fine sandy loam or loam.
Clay content--8 to 18 percent.
Rock fragments--Average 0 to 15 percent; some thin subhorizons range up to 25 percent ashy tuff pebbles.
Structure--Subangular blocky or it is massive.
Effervescence--Noneffervescent to strongly effervescent.

Cotant Series

The Cotant series consists of shallow, well drained soils that formed in residuum and colluvium from tuff. Cotant soils are on mountains. Slopes are 4 to 15 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Clayey, montmorillonitic, frigid, shallow Aridic Argixerolls

Typical pedon: Cotant gravelly clay loam in an area of map unit 1080. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 35 percent pebbles.

A--0 to 2 inches; grayish brown (10YR 5/2) gravelly clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; slightly hard, very friable, sticky and plastic; common very fine and few fine roots; common very fine vesicular pores; 20 percent pebbles; mildly alkaline (pH 7.8); abrupt smooth boundary.

Bt1--2 to 8 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; moderate medium angular blocky structure; hard, friable, sticky

and very plastic; common very fine, few fine roots; common very fine tubular pores; many distinct clay films on faces of peds and lining pores; 5 percent pebbles; mildly alkaline (pH 7.8); abrupt smooth boundary.

Bt2--8 to 15 inches; grayish brown (10YR 5/2) clay, very dark grayish brown (10YR 3/2) moist; weak medium prismatic parting to strong medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine roots; common very fine tubular pores; many distinct clay films on faces of peds and lining pores; 5 percent pebbles; mildly alkaline (pH 7.8); gradual smooth boundary.

Cr--15 to 40 inches; weathered tuffs.

Type location: Elko County, Nevada; approximately 1 mile northeast of Augustine Spring in the Cherry Creek Mountains; 1,900 feet west and 1,000 feet north of the southeast corner of section 7, T.28 N., R.63 E.; (40 degrees, 18 minutes, 52 seconds north latitude and 114 degrees, 54 minutes, 32 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist; moist in winter and spring, dry July through October. Aridic Xeric soil moisture regime.
Soil temperature: 42 to 47 degrees F.
Mollic epipedon thickness: 7 to 15 inches, including all or part of argillic horizon.
Depth to paralithic contact: 12 to 20 inches.
Reaction: Neutral or mildly alkaline.

A horizon:
Value--5 or 6 dry (5.5 or darker after mixing the surface 7 inches)
Chroma--2 or 3.

Bt horizons:
Value--4 through 6 dry, 3 through 5 moist. The upper subhorizon is 4 or 5 dry and 3 moist.
Chroma--2 through 4, with 4 only in the lower subhorizons.
Texture--Clay.
Clay content--40 to 60 percent.
Rock fragments--0 to 15 percent, mainly pebbles and cobbles; some pedons have subhorizons with up to 25 percent pebbles.
Structure--Prismatic, angular blocky or subangular blocky.
Other features--Darker crushed matrix values common in upper part of horizon.
Consistence--Very friable to firm, moist; sticky or very sticky and plastic or very plastic, wet.

Cropper Series

The Cropper series consists of well drained soils that formed in residuum and colluvium from rhyolite. Cropper soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Lithic Argixerolls

Typical pedon: Cropper very cobbly loam, located in an area of map unit 430. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by 30 percent pebbles and 15 percent cobbles.

A--0 to 2 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine tubular and interstitial pores; 35 percent pebbles and 20 percent cobbles; mildly alkaline (pH 7.6); abrupt wavy boundary.

A2--2 to 7 inches; brown (10YR 5/3) very cobbly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine and medium roots; common very fine tubular pores; few thin clay films on faces of peds; 35 percent pebbles and 20 percent cobbles; mildly alkaline (pH 7.6); clear wavy boundary.

Bt2--7 to 14 inches; brown (10YR 4/3) extremely gravelly clay loam, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine, few medium and coarse roots; many very fine tubular pores; common thin clay films on faces of peds and lining pores; 40 percent pebbles and 20 percent cobbles; mildly alkaline (pH 7.8); abrupt smooth boundary.

R--14 inches; rhyolite.

Type location: Elko County, Nevada; approximately 7 miles north of Silver Zone Pass; located in an unsectionized area 2,600 feet east and 1,300 feet south of the northwest corner of section 31, T.37 N., R.68 E.;

(41 degrees, 03 minutes, 00 seconds north latitude and 114 degrees, 19 minutes, 25 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry for 70 to 120 consecutive days most years in the summer and fall. Xeric Aridic soil moisture regime.
Soil temperature: 44 to 47 degrees.
Mollic epipedon thickness: 7 to 10 inches, may include the upper part of the argillic horizon.
Depth to bedrock: 14 to 20 inches.
Control section:
Clay content--Averages 27 to 35 percent.
Reaction--Neutral or mildly alkaline.
Rock fragments--60 to 75 percent, by average, mainly pebbles.

A horizons:
Value--3 through 5 dry, 2 or 3 moist.
Chroma--1 through 3 moist or dry.

Bt horizon:
Hue--10YR or 7.5YR.
Value--3 or 4 dry, 2 or 3 moist.
Chroma--2 to 3 moist, or can be 4 moist in the lower part.
Structure--Subangular blocky or angular blocky.
Texture--Sandy clay loam or clay loam.
Consistence--Soft to hard, dry; very friable to firm, moist; slightly sticky to sticky, slightly plastic to plastic, wet.

Cucamungo Series

The Cucamungo series consists of shallow, well drained soils that formed in residuum and colluvium from granite. Cucamungo soils are on mountains. 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 an area of map unit 471. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles, 30 percent cobbles, and 1 percent stones.

O--1 to 0 inch; singleleaf pinyon needle duff.

A1--0 to 1 inch; grayish brown (10YR 5/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; single grain; loose, non sticky and non plastic; many very fine roots; many very fine interstitial pores; 40 percent pebbles, 15 percent cobbles; mildly alkaline (pH 7.7); abrupt smooth boundary.
A2--1 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, non sticky and non plastic; many very fine, common fine roots; many very fine interstitial pores; 40 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.7); abrupt smooth boundary.
Bt1--3 to 7 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, common fine, medium and coarse roots; many very fine interstitial pores; few thin clay films on faces of peds, lining pores, and as coats on sand grains; 50 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.7); abrupt smooth boundary.
Bt2--7 to 14 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine, few fine, medium and coarse roots; many very fine tubular pores; few thin clay films on faces of peds, lining pores, and as coats on sand grains; 40 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.7); clear wavy boundary.
Cr--14 to 19 inches; weathered granite; common very fine, few fine roots matted on bedrock surface.

Type location: Elko County, Nevada; approximately 2 1/2 miles northwest of the Victoria Mine in the Dolly Varden Mountain range; located 1,600 feet east and 200 feet north of the southwest corner of section 36, T.29 N., R.65 E.; (40 degrees, 20 minutes, 22 seconds north latitude and 114 degrees, 35 minutes, 33 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist in winter, spring and early summer, dry in late summer and fall but moist intermittently due to convection storms. Dry in all parts at least 45 consecutive days following the summer solstice.
Soil temperature: 45 to 47 degrees F.
Mollic epipedon thickness: 7 to 14 inches (includes Bt1).
Depth to weathered bedrock: 14 to 20 inches.

Control section:
Clay content--20 to 30 percent.
Rock fragments--35 to 55 percent, mainly 2 to 5 mm.
Reaction--Neutral to moderately alkaline.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt1 horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.
Texture--Sandy clay loam, loam, clay loam.

Bt2 horizon:
Value--4 through 6 dry, 3 or 4 moist.
Chroma--3 or 4.
Texture--Sandy clay loam, loam, clay loam.

Dacker Series

The Dacker series consists of moderately deep over a duripan, well drained soils that formed in mixed silty alluvium with loess high in volcanic ash. Dacker soils are on fan piedmont remnants. Slopes are 2 to 4 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Xerollic Durargids

Typical pedon: Dacker silt loam located in an area of map unit 231. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 45 percent pebbles.

A1--0 to 3 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; moderate thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine vesicular and interstitial pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

A2--3 to 6 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine, medium, and coarse roots; common very fine and few fine and medium interstitial pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

Bt1--6 to 11 inches; dark brown (10YR 4/3) silty clay loam, dark yellowish brown (10YR 3/4) moist; strong medium prismatic structure parting to strong fine subangular; slightly hard, friable, sticky and plastic; common very fine and few fine, medium and coarse roots; common very fine and few fine interstitial and tubular pores; common thin clay films on faces of peds and lining pores; 10 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt2--11 to 18 inches; dark yellowish brown (10YR 4/4) silty clay loam, dark yellowish brown (10YR 3/4) moist; strong medium prismatic structure; hard, friable, sticky and plastic; common very fine, few fine, medium and coarse roots; few very fine and fine interstitial and tubular pores; common thin clay films on faces of peds and lining pores; 10 percent pebbles; moderately alkaline (pH 8.2); gradual smooth boundary.

Bqk--18 to 24 inches; very pale brown (10YR 7/3) gravelly loam, yellowish brown (10YR 5/4) moist; weak thick platy structure parting to moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; few very fine and fine roots; 50 percent durinodes; 15 percent pebbles; few fine filaments of lime; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bqkm--24 to 49 inches; white (10YR 8/2) indurated duripan, pale brown (10YR 6/3) moist; massive; extremely hard, extremely firm; 10 percent pebbles; continuous laminae are 1 to 2 millimeter thick; violently effervescent; strongly alkaline; gradual wavy boundary.

Type location: Elko County, Nevada; about 1 mile east of Welcome; approximately 1,800 feet west and 200 feet south of the northeast corner of section 16, T.37 N., R.61 E.; (41 degrees, 05 minutes, 55 seconds north latitude and 115 degrees, 05 minutes, 10 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in the winter and spring, dry June through October. Xeric Aridic soil mositure regime.
Soil temperature: 47 to 52 degrees F.
Combined thickness of A and Bt: 17 to 25 inches.
Depth to carbonates: 15 to 25 inches.
Depth to duripan: 20 to 35 inches.
Control section:
Clay content--27 to 35 percent.
Rock fragments--5 to 35 percent, mainly pebbles.
Other features--Very gravelly loamy sand substratums are common in some pedons below a depth of 40 inches.

A horizons:
Value--5 or 6 dry; 3 or 4 moist.
Chroma--2 or 3.
Reaction--Neutral or mildly alkaline.

Bt horizons:
Value--4 through 7 dry, 3 through 5 moist.
Chroma--3 or 4.
Texture--Upper subhorizon is silty clay loam. Lower subhorizon is silt loam or silty clay loam.
Clay content--Upper subhorizons 27 to 35 percent, lower subhorizons 25 to 33 percent.
Rock fragments--Upper subhorizons 0 to 20 percent, lower subhorizons 5 to 35 percent.
Structure--Prismatic parting to subangular blocky, subangular blocky or may be massive in the lower part.
Consistence--Usually hard, slightly hard in subhorizons, very friable to firm moist; slightly sticky or sticky and slightly plastic or plastic, wet.
Reaction--Mildly alkaline or moderately alkaline.

Bqk horizons:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--3 or 4.
Texture--Silt loam or loam.
Clay content--20 to 25 percent.
Consistence--Slightly hard or hard, very friable to firm, moist; slightly sticky or sticky and slightly plastic or plastic, wet.
Rock fragments--5 to 35 percent, mainly pebbles.
Structure--Massive or weak thick platy parting to subangular blocky.
Other features--20 to 50 percent, 5 to 30 millimeter durinodes or pan fragments.

Bqkm horizons:
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Reaction--Moderately alkaline or strongly alkaline.
Other features--Commonly has variable thickness of alternating layers of weak, strong or indurated silica-lime cemented material below.

Devilsgait Series

The Devilsgait series consists of very deep, very poorly drained soils that formed in mixed silty alluvium with a component of loess high in ash. Devilsgait soils are on flood plains and lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Cumulic Endoaquolls

Typical pedon: Devilsgait silt loam located in Elko County, Nevada, Northeast Part map unit 480. (Colors are for dry soils unless otherwise noted.)

A1--0 to 2 inches; dark gray (10YR 4/1) silt loam, very dark gray (10YR 3/1) moist; common fine distinct yellowish red (5YR 4/6) moist mottles; moderate medium platy structure; slightly hard, very friable, sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2--2 to 9 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; common fine distinct strong brown (7.5YR 4/6) moist mottles; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine, few medium and coarse roots; common very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A3--9 to 12 inches; dark gray (10YR 4/1) silty clay loam, black (10YR 2/1) moist; common fine distinct strong brown (7.5YR 4/6) moist mottles; moderate fine and medium subangular blocky structure; hard, friable, sticky and very plastic; common very fine and fine, and few medium roots; common very fine tubular pores; slightly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

A4--12 to 24 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; common fine distinct yellowish red (5YR 4/6) moist mottles; moderate fine prismatic structure parting to moderate fine subangular blocky; hard, firm, very sticky and very plastic; common very fine and fine roots; common very fine tubular pores; violently effervescent in lime seams; common medium lime seams and masses; strongly effervescent matrix; strongly alkaline (pH 8.6); abrupt wavy boundary.

A5--24 to 31 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; common fine distinct yellowish red (5YR 4/6) moist mottles; weak fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine roots; common very fine tubular pores; few fine gypsum crystals; few fine lime seams and masses; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C1--31 to 37 inches; light gray (10YR 6/1) silt loam, very dark gray (10YR 3/1) moist; many fine faint dark grayish brown (10YR 4/2) and few fine distinct yellowish red (5YR 4/6) moist mottles; weak medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and few fine roots;

many very fine tubular pores; few fine lime seams and masses; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Ab1--37 to 43 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; few medium distinct yellowish red (5YR 4/6) moist mottles; moderate fine prismatic structure; hard, firm, very sticky and very plastic; common very fine roots; many very fine tubular pores; few fine lime seams and masses; slightly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary.

C2--43 to 61 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; common medium distinct light olive brown (2.5Y 5/4) and few fine distinct yellowish red (5YR 4/6) moist mottles; strong coarse prismatic structure; hard, firm, very sticky and very plastic; few very fine roots; common very fine tubular pores; few fine lime seams and masses; slightly effervescent; mildly alkaline (pH 7.8).

Type location: Elko County, Nevada; approximately 26 miles north of Wells; about 2,000 feet east and 2,500 feet north of the southwest corner of section 7, T.41 N., R.64 E.; (41 degrees, 27 minutes, 10 seconds north latitude and 114 degrees, 46 minutes, 27 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated at or near the surface for at least one month during most years, mainly during the late winter through early summer months.
Soil temperature: 47 to 50 degrees F.
Mollic epipedon thickness: 24 to 50 inches.
Control section:
Clay content--20 to 35 percent.
Reaction--Mildly alkaline or moderately alkaline, with some pedons strongly alkaline in the upper part.
Other features--Some pedons have a gravelly substratum below depths of 40 inches. Some pedons are drained due to stream channel entrenchment.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 or 2.
Other features--Buried A horizons occur in some pedons.

C horizon:
Hue--10YR, 2.5Y or 5Y.
Value--3 through 5 moist.
Chroma--1 or 2.
Texture--Stratified silt loam and silty clay loam. Some pedons have thin strata of silty clay or loam in the lower part.

Dewar Series

The Dewar series consists of well drained soils that formed in loess and mixed silty alluvium with a component of ash. Dewar soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Xerollic Durargids

Typical pedon: Dewar gravelly silt loam in an area of map unit 260. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 25 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) gravelly silt loam, dark brown (10YR 3/3) moist; weak medium platy parting to subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; common very fine vesicular and few fine tubular pores; 20 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt1--3 to 8 inches; pale brown (10YR 6/3) gravelly silt loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine, few fine and medium roots; common very fine and fine tubular pores; few thin clay films lining pores; slightly effervescent; 15 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary.

Bt2--8 to 13 inches; very pale brown (10YR 7/3) gravelly silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine, fine and medium roots; common very fine, fine and few medium tubular pores; common fine clay films lining pores and on faces of peds; 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btqk--13 to 19 inches; very pale brown (10YR 8/3) gravelly silt loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; few thin clay films on faces of peds and lining pores; 15 percent pebbles; 20 percent weak durinodes; few fine filaments of lime; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bqkm--19 to 40 inches; white (10YR 8/2) indurated duripan, very pale brown (10YR 7/4) moist; massive; extremely hard and extremely firm; violently effervescent.

Type location: Elko County, Nevada; approximately 3 miles east of Moore Summit; located in an unsectionized area about 1,200 feet north and 2,300 feet west of the projected southwest corner of section 5, T.37 N., R.64 E.; (41 degrees, 06 minutes, 50 seconds north latitude and 114 degrees, 46 minutes, 05 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry early June through October.
Soil temperature: 47 to 52 degrees F.
Depth to indurated duripan: 14 to 20 inches.
Reaction: A and Bt horizons are neutral to moderately alkaline.
Control section:
Clay content--27 to 35 percent
Rock fragments--Averages 15 to 35 percent, dominantly pebbles

A horizon:
Value--3 or 4 moist.
Chroma--2 or 3.

Bt horizons:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 4 dry, 3 or 4 moist.
Texture--Silty clay loam or clay loam. Thin subhorizons are silt loam.
Clay content--27 to 35 percent.
Rock fragments--15 to 35 percent, mainly pebbles.
Structure--Weak through strong, fine through coarse subangular blocky.
Consistence--Slightly hard or hard, dry; very friable or friable, moist, slightly sticky or sticky, wet.

Btqk horizon:
Clay content--25 to 30 percent.
Texture--Silty clay loam, clay loam or silt loam.
Rock fragments--15 to 35 percent. Subhorizons with up to 45 percent pebbles are in some pedons.
Durinodes--Weak or very weak, less than 30 percent.

Bqkm horizon:
Structure--Massive or moderately thick or very thick plate like layers.
Cementation--Some pedons are alternately strongly cemented or discontinuously indurated horizons below the duripan.

Donna Series

The Donna series consists of moderately deep over a duripan, well drained soils that formed in alluvium from mixed rock sources with a component of loess high in volcanic ash. Donna soils are on fan piedmont remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Very-fine, montmorillonitic, frigid Abruptic Aridic Durixerolls

Typical pedon: Donna gravelly loam in an area of map unit 1770. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 30 percent pebbles.

A1--0 to 2 inches; grayish brown (10YR 5/2) gravelly loam, very dark brown (10YR 2/2) moist; weak thick platy structure parting to medium very thin platy; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine and few fine interstitial and tubular pores; 15 percent pebbles; slightly acid (pH 6.4); clear smooth boundary.
A2--2 to 7 inches; grayish brown (10YR 5/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; few very fine interstitial and tubular pores; 15 percent pebbles; neutral (pH 6.6); clear smooth boundary.
Bt1--7 to 19 inches; dark yellowish brown (10YR 4/4) clay, dark yellowish brown (10YR 4/4) moist; strong medium and coarse prismatic structure; very hard, very firm, sticky and plastic; few very fine, fine, medium and coarse roots; many thin clay films on faces of peds and lining pores, common pressure faces; common very fine tubular pores; 10 percent pebbles; neutral (pH 7.0); clear smooth boundary.
Bt2--19 to 33 inches; brownish yellow (10YR 6/6) clay, dark yellowish brown (10YR 4/6) moist; strong medium prismatic structure parting to moderate medium angular blocky; very hard, very firm, sticky and plastic; few very fine, fine and medium roots; many very fine and few fine interstitial and tubular pores; common moderately thick clay films on faces of peds and lining pores; 10 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.

Bqkm--33 to 43 inches; light yellowish brown (10YR 6/4) indurated duripan with 1 to 2 millimeter laminar cap, dark brown (10YR 4/3) moist; strong medium and thick platy structure; extremely hard, extremely firm; few fine filaments of lime; clear wavy boundary.
2Bqk--43 to 60 inches; brownish yellow (10YR 6/6) very gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; massive; hard, firm and brittle, nonsticky and nonplastic; many very fine interstitial pores; continuous brittle matrix; 25 percent pebbles, 5 percent cobbles, and 5 percent stones; few fine filaments of lime; mildly alkaline (pH 7.6).

Type location: Elko County, Nevada; about 3 miles south of Secret Pass; approximately 1,250 feet north and 2,000 feet east of the southwest corner of section 3, T.33 N., R.60 E.; (40 degrees, 45 minutes, 58 seconds north latitude and 115 degrees, 11 minutes, 24 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in winter and spring, dry mid June through October.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon thickness: 7 to 12 inches.
Depth to duripan: 20 to 36 inches.
Thickness of duripan: 10 to 20 inches.
Control section:
Clay content--60 to 70 percent.
Rock fragments--0 to 15 percent, mainly pebbles.
Other features--There is an increase of 15 to 30 percent clay at the upper boundary of the Bt horizon.

A horizons:
Hue--10YR or 7.5YR.
Value--5 or 6 dry, 2 or 4 moist; 6 dry and 4 moist only in the surface 1 to 3 inches. After mixing the top 7 inches the soil meets the 5.5 dry and 3.5 moist color requirement for mollic.
Chroma--2 or 3.
Reaction--Slightly acid or neutral.

Bt horizon:
Hue--10YR or 7.5YR.
Value--4 through 6 dry, 4 or 5 moist.
Chroma--3 through 6.
Structure--Weak to strong medium or coarse prismatic, parting to angular blocky, massive in the lower part.
Consistence--Hard or very hard dry, firm or very firm moist, sticky or very sticky and plastic or very plastic wet.
Reaction--Slightly acid or neutral; some pedons are mildly alkaline immediately above the duripan.

Bqkm horizons:
Reaction--Neutral to mildly alkaline where the upper subhorizons lack carbonates; moderately alkaline to strongly alkaline in the calcareous portions.

2Bk and 2Bqk horizons:
Texture--Stratified, ranges sandy loam to sandy clay loam.
Rock fragments--Averages 35 to 65 percent, mainly pebbles.
Reaction--Mildly alkaline or moderately alkaline.

Duffer Series

The Duffer series consists of very deep, poorly drained soils that formed in mixed alluvium and lacustrine sediments. Duffer soils are on flood plains, fan skirts, and lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine-silty, carbonatic, mesic Aquic Calciorthids

Typical pedon: Duffer silt loam in an area of map unit 880. (Colors are for dry soil unless otherwise noted.)

A--0 to 4 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine vesicular pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.
Bw--4 to 25 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; massive; slightly hard, very friable, sticky and slightly plastic; common very fine roots; many very fine, few fine, medium, and coarse tubular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
Bk1--25 to 50 inches; light gray (10YR 7/1) silty clay loam, gray (10YR 6/1) moist; massive; few very fine distinct light brown (7.5YR 6/4) iron mottles; slightly hard, friable, sticky and slightly plastic; many very fine and common fine, medium and coarse tubular pores; 25

percent lime nodules that are extremely hard and extremely firm; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
Bk2--50 to 57 inches; gray (10YR 6/1) silty clay loam, gray (10YR 5/1) moist; massive; slightly hard, friable, sticky and slightly plastic; 25 percent lime nodules; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
Bk3--57 to 60 inches; white (2.5Y 8/2) silty clay loam, light brownish gray (2.5Y 6/2) moist; many very fine distinct light brown (7.5YR 6/4) iron mottles; massive; slightly hard, friable, sticky and slightly plastic; 15 percent lime nodules; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 1,800 feet north and 3,000 feet west of the southeast corner of section 4, T.28 N., R.62 E.; (40 degrees, 19 minutes, 53 seconds north latitude and 114 degrees, 59 minutes, 18 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated between depths of 18 and 40 inches in the early spring and are usually moist at this depth due to capillary moisture from ground water. Dry periods occur in the summer and fall.
Soil temperature: 47 to 52 degrees F.
Depth to the calcic horizon: 12 to 29 inches.
Reaction: Strongly alkaline or very strongly alkaline. Some pedons are moderately alkaline in some parts.
Redox concentration: Few distinct and prominant mottles in some pedons.
Control section:
Clay content--20 to 35 percent.

A horizon:
Hue--10YR through 5Y.
Value--5 through 7 dry, 3 through 5 moist.
Chroma--1 through 4.

Bw horizon:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Structure--Weak or moderate, very fine to medium, granular, subangular blocky, or platy; in some pedons the lower part is massive.
Texture--Silt loam or silty clay loam.
Consistence--Slightly hard to hard, dry; very friable to firm, moist; slightly sticky to sticky, slightly plastic to plastic, wet.

Bk horizons:
Hue--10YR, 7.5YR, 2.5Y, 5Y.
Value--6 through 8 dry, 4 through 6 moist.
Chroma--1 through 4.
Texture--Silt loam or silty clay loam.
Structure--Subangular blocky or massive.
Redox concentration--Few to many distinct mottles.
Consistence--Slightly hard to hard, dry; very friable to firm, moist; slightly sticky to sticky, slightly plastic to plastic, wet.
Calcium carbonate equivalent--40 to 60 percent.

Eaglepass Series

The Eaglepass series consists of very shallow, well drained soils that formed in residuum and colluvium from limestone. Eaglepass soils are on mountains. Slopes are 8 to 30 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 very gravelly sandy loam located in an area of map unit 1600. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 30 percent pebbles and 10 percent cobbles.

A--0 to 1 inches; light gray (10YR 7/2) very gravelly sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial pores; common thin lime coats and pendants on undersides of pebbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
C--1 to 5 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, few medium, coarse, and very coarse roots; many very fine interstitial pores; common thin and few moderately thick lime coats and pendants on undersides of rock fragments; 65 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
R--5 inches; limestone.

Type location: Elko County, Nevada; approximately 8 miles southwest of Ferber about 400 feet north and 1,400 feet east of the southwest corner of section 33, T.27 N., R.69 E.; (40 degrees, 09 minutes, 41 seconds north latitude and 114 degrees, 11 minutes, 45 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July to October due to convection storms.
Soil temperature: 50 to 53 degrees F.
Depth to bedrock: 4 to 6 inches.
Control section:
Clay content--8 to 18 percent.
Rock fragments--60 to 75 percent, includes pebbles, cobbles, and stones.
Reaction--Moderately alkaline or strongly alkaline.
Carbonates--Calcareous in all parts, violently effervescent. Less than 20 millimeter fraction contains more than 40 percent calcium carbonate equivalent.

A horizon:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 4.

C horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Texture--Loam, fine sandy loam or sandy loam.
Structure--Weak or moderate, fine or medium, subangular blocky.
Consistence--Nonsticky or slightly sticky wet.
Other features--Lime pendants and coatings are on rock fragments in some pedons.

Eastwell Series

The Eastwell series consists of shallow, well drained soils that formed in mixed alluvium influenced by loess. Eastwell soils are on fan piedmont remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Haploxerollic Durorthids

Typical pedon: Eastwell gravelly sandy loam located in an area of map unit 631. (Colors are for dry soils unless otherwise noted.) The soil surface is covered with approximately 65 percent pebbles.

A1--0 to 1 inch; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.5); abrupt smooth boundary.
A2--1 to 5 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.5); abrupt smooth boundary.
Bw--5 to 10 inches; very pale brown (10YR 7/3) very gravelly loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, common medium, and coarse roots; 40 percent pebbles; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.
Bqk--10 to 18 inches; white (10YR 8/2) very gravelly sandy loam, light yellowish brown (10YR 6/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, medium and coarse roots; 20 percent durinodes 1/2 to 1 inch in diameter; 50 percent pebbles, 5 percent cobbles; 4 to 7 millimeter lime and silica pendants on the undersides of coarse fragments; strongly effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.
Bqkm--18 to 27 inches; white (10YR 8/2) strongly lime and silica cemented duripan, very pale brown (10YR 7/3) moist; massive; very hard, very firm and brittle; few very fine roots; 1 millimeter discontinuous laminar cap; strongly effervescent; abrupt wavy boundary.
Bqk2--27 to 60 inches; white (10YR 8/1) very gravelly loam, very pale brown (10YR 7/4) moist, massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; 40 percent pebbles, 15 percent cobbles; 50 percent strong discontinuous lime and silica cementation; strongly effervescent; strongly alkaline (pH 8.5);

Type location: Elko County, Nevada; approximately 11 miles southeast of Currie; located in an unsectionized area about 1,300 feet east and 1,600 feet north of the projected southwest corner of section 31, T.27 N., R.66 E.; (40 degrees, 10 minutes, 04 seconds north latitude and 114 degrees, 34 minutes, 30 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry June to October.
Soil temperature: 47 to 52 degrees F.
Depth to duripan: 10 to 20 inches.
Reaction: Moderately alkaline or strongly alkaline.
Control section:
Clay content--10 to 27 percent.
Rock fragments--35 to 50 percent, mainly pebbles.
Other features--Bqk horizons are above the duripan in some pedons.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Effervescence--Noneffervescent to slightly effervescent.

Bw horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Structure--Weak or moderate prismatic or subangular blocky.
Texture--Sandy loam or loam.
Effervescence--Slightly effervescent to violently effervescent.

Bqkm horizon:
Value--5 or 6 moist.
Chroma--2 or 3.
Cementation--Continuously strongly silica cemented duripan, some pedons lack thin discontinuous silica lamellae.
Structure--Platy or massive.
Consistence--Very hard or extremely hard dry, very firm or extremely firm moist.
Effervescence--Strongly effervescent to violently effervescent.

Bqk horizons:
Value--6 through 8 dry, 4 through 7 moist.
Chroma--1 through 4.
Texture--Very gravelly loam or very cobbly loam.
Rock fragments--35 to 60 percent, mainly pebbles and cobbles.
Cementation--10 to 50 percent durinodes or weak to strong discontinuous lime and silica cementation.
Effervescence--Strongly effervescent or violently effervescent.
Segregated lime--Commonly has lime and silica coats on undersides of rock fragments.

Enko Series

The Enko series consists of very deep, well drained soils that formed in mixed loamy alluvium with a component of loess and ash. Enko soils are on fan skirts and inset fans. Slopes are 0 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Durixerollic Camborthids

Typical pedon: Enko silt loam in an area of map unit 1831. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 15 percent pebbles.

A--0 to 2 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure parting to moderate very fine platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine interstitial pores; 10 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.
Bw--2 to 14 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium and coarse roots; common very fine, few fine and medium tubular pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
Bqk1--14 to 32 inches; white (10YR 8/1) sandy loam, light brownish gray (10YR 6/2) moist; massive; hard, firm and brittle, nonsticky and slightly plastic; few very fine and fine roots; few very fine interstitial pores; 5 percent pebbles; continuous brittle matrix; few fine filaments of lime; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bqk2--32 to 60 inches; white (10YR 8/2) sandy loam, light brownish gray (10YR 6/2) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; few very fine interstitial pores; 30 percent discontinuous weak silica cementation; 5 percent pebbles; few fine filaments of lime; violently effervescent; moderately alkaline (pH 8.4).

Type location: Elko County, Nevada; about 1 mile northeast of Welcome; approximately 1,000 feet east and 100 feet south of the northwest corner of section 9, T.37 N., R.61 E.; (41 degrees, 06 minutes, 49 seconds north latitude and 115 degrees, 05 minutes, 45 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in winter and spring, dry June through October.
Soil temperature: 49 to 54 degrees F.
Thickness of A and Bw horizons: 12 to 30 inches.
Depth to continuous brittle matrix: 12 to 32 inches.
Depth to calcium carbonate: 10 to 30 inches.
Other features: Below 40 inches some pedons have gravelly or sandy substrata, or substrata containing gypsum crystals. Some pedons have noneffervescent Bq horizons above the Bqk horizon.
Control section:
Clay content--10 to 18 percent.
Rock fragments--0 to 15 percent pebbles.

A horizon:
Hue--10YR or 2.5Y.
Value--Commonly 6 or 7 dry, with 5 dry in some subhorizons of some pedons, 3 or 4 moist.
Chroma--2 or 3.
Reaction--Neutral to moderately alkaline.

Bw horizon:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 4.
Texture--Loam, fine sandy loam, or sandy loam; some pedons have strata of silt loam or clay loam in the upper part where stratified.
Structure--Prismatic, angular blocky, subangular blocky or it is massive.
Consistence--Soft or slightly hard dry, very friable or friable, moist, nonsticky, slightly sticky or sticky, nonplastic, slightly plastic or plastic, wet.
Reaction--Neutral to moderately alkaline, increasing with depth.
Carbonates--Some pedons are calcareous in the lower portion of the horizon.

Bqk and Bq horizons:
Hue--10YR, 2.5Y, 5Y.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--1 through 4 dry, 2 through 4 moist.
Texture--Loam, sandy loam, fine sandy loam, or very fine sandy loam.
Silica cementation--Continuous brittle matrix that is at least firm consistence when moist in horizons 10 to 40 inches thick. Subhorizons not continuously brittle and contain 20 to 50 percent durinodes or are 20 to 75 percent discontinuous weakly silica-cemented.
Structure--Platy or is massive.
Consistence--Soft to hard, dry; very friable to firm, moist; nonsticky or slightly sticky and nonplastic or slightly plastic or brittle when wet. Substrata that are very friable, moist are in some pedons.
Reaction--Mildly alkaline to very strongly alkaline commonly increasing with depth.

Equis Series

The Equis series consists of very deep, poorly drained soils that formed in lacustrine sediments and mixed alluvium. Equis soils are on alluvial flats and lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine, carbonatic, mesic Typic Halaquepts

Typical pedon: Equis silty clay, located in an area of map unit 763. (Colors are for dry soil unless otherwise noted.)

A1--0 to 1 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; strong thick platy structure; slightly hard, very friable, sticky and plastic; many very fine, common fine and medium roots; many very fine vesicular pores; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.
A2--1 to 2 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; weak thin platy structure parting to weak fine granular; soft, very friable, sticky and plastic; many very fine, common fine and medium roots; many very fine interstitial pores; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.
A3--2 to 6 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; many very fine, common fine and medium roots; many very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.
Bg1--6 to 17 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, friable, sticky and very plastic; many very fine, common fine and medium roots; many very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Bg2--17 to 24 inches; light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; moderate very coarse prismatic structure; hard, firm, sticky and very plastic; common very fine, few fine and medium roots; many very fine tubular pores; few fine prominent dark brown (7.5YR 4/4) mottles; common pressure faces on faces of peds; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Bkg1--24 to 34 inches; white (10YR 8/1) silty clay loam, light gray (10YR 7/2) moist; massive; hard, friable, very sticky and plastic; common very fine and few fine roots; many very fine and fine tubular pores; few soft masses of lime; few fine prominent dark brown (7.5YR 4/4) mottles in pores; violently effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

Bkg2--34 to 41 inches; white (10YR 8/1) silty clay loam, light gray (10YR 7/2) moist; massive; hard, friable, very sticky and plastic; common very fine roots; many very fine and fine tubular pores; few fine prominent dark brown (7.5YR 4/4) mottles; few fine soft masses of lime; violently effervescent; strongly alkaline (pH 8.8); gradual wavy boundary.

Cg--41 to 60 inches; white (10YR 8/1) silty clay loam, light gray (10YR 7/2) moist; massive; hard, friable, very sticky and plastic; few very fine roots; many very fine and fine tubular pores; common fine prominent yellowish brown (10YR 5/6) mottles; violently effervescent; strongly alkaline (pH 8.8).

Type location: Elko County, Nevada; approximately 1 1/2 miles northeast of Warm Springs Ranch; 1,100 feet south and 1,300 feet west of the northeast corner of section 28, T.36 N., R.64 E.; (40 degrees, 58 minutes, 40 seconds north latitude and 114 degrees, 44 minutes, 21 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist at or near the surface. Saturated at a depth of 5 to 20 inches in most years. Depth to the water table ranges from about 1 foot in the spring to 5 feet in late summer.

Soil temperature: 48 to 52 degrees F.

Reaction: Strongly alkaline or very strongly alkaline.

*SAR:*20 to 70 percent in the upper 20 inches, decreasing to less than 5 percent below 20 inches.

Calcium carbonate equivalent: 45 to 65 percent. Clay sized carbonates range from 30 to 45 percent in the upper 30 inches.

A horizons:

Hue--10YR through 5Y or N.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--0 through 2
Effervescence--Strongly effervescent or violently effervescent.

Bg horizons:

Hue--10YR through 5Y or N.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--0 through 2
Clay content--40 to 50 percent silicate clay, 30 to 45 percent carbonates of clay size.
Texture--Silty clay or clay
Structure--Prismatic or angular blocky.
Consistence--Hard to very hard, very friable to firm.
Reaction--Strongly alkaline or very strongly alkaline.

Bkg horizon:

Hue--5Y through 10YR or N.
Value--6 through 8 dry, 5 through 7 moist.
Chroma--0 through 3
Structure--Angular blocky or massive.
Texture--Silty clay or silty clay loam.
Clay content--30 to 45 percent silicate clay, 18 to 30 percent carbonates of clay size.
Consistence--Hard or very hard, friable to very firm, sticky or very sticky, plastic to very plastic.
Other features--Some pedons have prominent mottles.

Cg horizon:

Texture--Silt loam, silty clay loam or silty clay.
Consistence--Hard to very hard, friable to very firm, moist.
Other features--Some pedons lack snail shell fragments.

Gance Series

The Gance series consists of very deep, well drained soils that formed in mixed alluvium with a component of loess and volcanic ash. Gance soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, mesic Durixerollic Haplargids

Typical pedon: Gance very gravelly loam, 15 to 30 percent slopes, is located in Elko County, Nevada, Northwest Part. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with 40 percent pebbles.

A--0 to 5 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 3/3) moist; strong fine granular structure; slightly hard, friable, sticky and plastic; many very fine, fine, and common medium and coarse roots; many very fine interstitial pores; 35 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt--5 to 13 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, very sticky and very plastic; many very fine and fine, and common medium and coarse roots; many very fine tubular pores; 40 percent pebbles; many moderately thick clay films on faces of peds and mineral grains and lining pores; mildly alkaline (pH 7.4); clear wavy boundary.

Btk--13 to 20 inches; light yellowish brown (10YR 6/4) very gravelly clay, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, friable, very sticky and very plastic; common very fine, and few fine and medium roots; many very fine tubular pores; 1 millimeter thick lime and silica coats on the undersides of pebbles; 45 percent pebbles and 10 percent cobbles; few thin clay films on mineral grains and lining pores; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk--20 to 30 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine and fine interstitial, and common very fine tubular pores; 1 millimeter thick lime and silica coats on pebbles and cobbles; 45 percent pebbles, 5 percent cobbles, and 5 percent stones; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bqk--30 to 60 inches; very pale brown (10YR 7/4) extremely gravelly loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm, and brittle, sticky and plastic; few very fine and fine roots; many very fine and fine interstitial and common very fine tubular pores; continuous brittle matrix; 1 millimeter thick lime and silica coats on pebbles, cobbles and stones; few large rounded soft lime masses, and few irregular lime filaments; 45 percent pebbles, 10 percent cobbles, and 5 percent stones; strongly effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; about 28 miles north of Wells, approximately 500 feet west and 750 feet south of the northeast corner of section 36, T.42 N., R.62 E.; (41 degrees, 29 minutes, 20 seconds north latitude and 114 degrees, 53 minutes, 51 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in some part late October through early June.
Soil temperature: 47 to 52 degrees F.
Depth to base of Bt horizon: 20 to 32 inches.
Depth to carbonates: 13 to 32 inches.
Depth to continuously brittle Bqk horizon: 25 to 38 inches.
Control section:
Clay content--Averages 35 to 55 percent.
Rock fragments--35 to 75 percent.
Other features--Some pedons have noncemented horizons below the Bqk horizon. Some pedons have buried Bt horizons below 56 inches.

A horizon:
Value--5 or 6 dry, 3 through 5 moist.
Chroma--2 or 3.
Reaction--Neutral to moderately alkaline.

Bt horizon:
Value--5 or 6 dry, 3 through 5 moist.
Chroma--2 through 4.
Texture--Clay or clay loam.
Clay content--35 to 45 percent.
Rock fragments--20 to 55 percent mainly pebbles, with up to 10 percent cobbles.
Structure--Very fine to medium subangular blocky.

Lower Bt horizons:
Value--4 through 6 dry, 3 through 5 moist.
Chroma--3 or 4.
Texture--Clay or sandy clay.
Clay content--40 to 55 percent.
Rock fragments--35 to 75 percent mainly pebbles, with up to 20 percent cobbles.
Structure--Fine or medium subangular or angular blocky or fine to coarse prismatic.
Reaction--Mildly alkaline or moderately alkaline, usually increasing with depth.
Other features--Some pedons have a Bk horizon between the Btk and the Bqk horizons.

Bqk horizon:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4.
Texture--Sandy loam, loam, and coarse sandy loam.
Rock fragments--35 to 80 percent, of which up to 40 percent is cobbles.
Cementation--Continuous brittle matrix that is hard and firm.

Reaction--Moderately alkaline or strongly alkaline.
Effervescence--Strongly effervescent to violently effervescent.

Gollaher Series

The Gollaher series consists of very shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Gollaher soils are on mountains. 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, carbonatic, frigid Lithic Xerorthents

Typical pedon: Gollaher extremely gravelly loam in an area of map unit 140. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent pebbles and 5 percent cobbles.

A1--0 to 5 inches; pale brown (10YR 6/3) extremely gravelly loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and few medium roots; many very fine interstitial and common very fine tubular pores; 65 percent pebbles; 1 to 2 millimeter lime coats and pendants on undersides of pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk--5 to 10 inches; pale brown (10YR 6/3) extremely gravelly loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine interstitial and common very fine tubular pores; 70 percent pebbles; 2 to 3 millimeter lime coats and pendants on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--10 inches; limestone bedrock.

Type location: Elko County, Nevada; about 3 miles north of Pequop Summit; approximately 1,200 feet south and 2,000 feet west of the northeast corner of section 1, T.37 N., R.65 E.; (41 degrees, 07 minutes, 20 seconds north latitude and 114 degrees, 34 minutes, 15 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in the winter and spring, dry from July through October. Moist in all parts for 45 or more days in the 4 months following the winter solstice.
Soil temperature: 43 to 47 degrees F.
Control section:
Clay content--15 to 27 percent.
Depth to bedrock--4 to 10 inches.
Rock fragments--45 to 75 percent, mainly pebbles with up to 5 percent cobbles.
Calcium carbonate equivalent--40 to 60 percent.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.
Reaction--Mildly alkaline or moderately alkaline.
Effervescence--Strongly effervescent to violently effervescent.
Other features--Common to continuous thin or medium lime pendents on undersides of rock fragments.

Bk horizon:
Value--3 or 4 moist.
Chroma--2 or 3.
Texture--Loam.
Reaction--Mildly alkaline or moderately alkaline.
Other features--Common to continuous thin to thick lime pendants on undersides of rock fragments.

Graley Series

The Graley series consists of shallow, well drained soils that formed in residuum and colluvium from andesite. Graley soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, frigid Lithic Argixerolls

Typical pedon: Graley stony loam located in an area of map unit 680. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 30 percent pebbles and 3 percent stones.

A1--0 to 3 inches; grayish brown (10YR 5/2) stony loam, very dark brown (10YR 2/2) moist; moderate thick platy structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots;

common very fine and fine tubular and common very fine interstitial pores; 25 percent pebbles, 5 percent cobbles, and 2 percent stones; neutral (pH 7.0); abrupt smooth boundary.

A2--3 to 7 inches; grayish brown (10YR 5/2) loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, few medium and coarse roots; common very fine and few fine tubular pores; 30 percent pebbles and 2 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

Bt1--7 to 11 inches; light brownish gray (10YR 6/2) very gravelly clay, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; few very fine, fine, medium and coarse roots; few very fine vesicular and tubular pores; few thin clay films coating mineral grains and lining pores; 40 percent pebbles; 15 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt2--11 to 19 inches; light brown (7.5YR 6/4) very gravelly clay, dark brown (7.5YR 3/4) moist; moderate fine and medium angular blocky structure; hard, friable, very sticky and very plastic; few very fine, fine and medium roots; many thin clay films lining tubular pores and many moderately thick clay bridges between mineral grains; 35 percent pebbles and 15 percent cobbles; neutral (pH 7.2); abrupt irregular boundary.

R--19 inches; Rhyolite.

Type location: Elko County, Nevada; approximately 10 miles north of Silver Zone Pass in the Toano Range; located in an unsectionized area 1,000 feet north and 300 feet west of the projected southeast corner of section 7, T.36 N., R.68 E.; (41 degrees, 00 minutes, 45 seconds north latitude and 114 degrees, 18 minutes, 52 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist; moist in winter and spring, dry Mid-July through late October.

Soil temperature: 42 to 47 degrees F.

Mollic epipedon thickness: 7 to 12 inches, does not include the argillic horizon.

Depth to bedrock: 14 to 20 inches.

Reaction: Neutral or mildly alkaline.

Control section:

Clay content--35 to 50 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

A horizons:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3.

Consistence--Nonplastic to plastic wet.

Bt horizon:

Hue--7.5YR or 10YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 to 4.

Texture--Clay loam or gravelly clay.

Structure--Angular or subangular blocky.

Consistence--Very hard or hard, dry; friable to firm moist, sticky or very sticky moist; plastic or very plastic wet.

Gravier Series

The Gravier series consists of very deep, well drained soils that formed in mixed alluvium mainly from limestone and tuffs. Gravier soils are on beach plains. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Typic Calciorthids

Typical pedon: Gravier gravelly loam is located in an area of map unit 113. The soil surface is partially covered by approximately 35 percent pebbles. (Colors are for dry soils unless otherwise noted.)

A--0 to 3 inches; light brownish gray (2.5Y 6/2) gravelly loam, olive brown (2.5Y 4/4) moist; moderate very thick platy structure parting to medium platy; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial pores and few very fine tubular; common thin to moderately thick lime coats on the undersides of pebbles; many 1 millimeter lime pendants; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bk1--3 to 12 inches; light gray (10YR 7/2) very gravelly loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium, common very fine and fine roots; few fine tubular pores and common very fine interstitial; many thin lime coats on sides, many moderate to thick lime coats on the undersides of pebbles; many lime pendants; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bk2--12 to 17 inches; light gray (2.5Y 7/2) very gravelly coarse sandy loam, light olive brown (2.5Y 5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine

roots; few very fine and fine interstitial pores; many thin lime coats on sides, many moderate to thick lime coats on the undersides of pebbles; many lime pendants; 55 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bk3--17 to 24 inches; pale yellow (2.5Y 7/4) extremely gravelly coarse sandy loam, light olive brown (2.5Y 5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine tubular and interstitial pores; many thin lime coats on sides, many moderate to thick lime coats on the undersides of pebbles; many lime pendants; 75 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Bk4--24 to 35 inches; light gray (2.5Y 7/2) gravelly sandy loam, light olive brown (2.5Y 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine interstitial pores; common thin to moderately thick lime coats on undersides of pebbles; 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bk5--35 to 44 inches; white (10YR 8/2) extremely gravelly very fine sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine tubular and interstitial pores; common thin to moderately thick lime coats on the undersides of pebbles; many 1 millimeter lime pendants; 75 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual wavy boundary.

C--44 to 61 inches; very pale brown (10YR 7/3) extremely gravelly loamy sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few very fine and fine tubular pores; many thin lime coats surrounding pebbles; 80 percent pebbles; violently effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 2 1/2 miles east of the Pilot Mountain Ranch in Pilot Creek Valley; 1,000 feet north and 1,200 feet west of the southeast corner of section 31, T.37 N., R.69 E.; (41 degrees, 02 minutes, 25 seconds north latitude and 114 degrees, 12 minutes, 12 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist for short periods in winter and spring, dry late May through November. Typic Aridic moisture regime.

Soil temperature: 53 to 59 degrees F.

Depth to the calcic horizon: 3 to 5 inches.

Control section:

Clay content--Averages 8 to 18 percent.

Rock fragments--35 to 60 percent mainly pebbles, with up to 10 percent cobbles.

Reaction--Moderately alkaline to strongly alkaline.

Calcium carbonate equivalent--15 to 30 percent in the calcic horizon.

A horizon:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Bk horizons:

Hue--10YR or 2.5Y.

Value--7 or 8 dry, 4 or 6 moist.

Chroma--2 through 4.

Structure--Weak, fine or medium subangular blocky, single grain or is massive.

Texture--Stratified loam through coarse sandy loam.

Consistence--Loose, soft or slightly hard dry, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Other features--Thin to thick lime coats and pendants coating rock fragments or on undersides. Thin strata of loamy sand to loamy fine sand common in pedons.

C horizons:

Hue--10YR or 2.5YR.

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Halacan Series

The Halacan series consists of shallow, well drained soils that formed in residuum and colluvium from limestone. Halacan soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 38 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic Cryic Lithic Rendolls

Typical pedon: Halacan very gravelly loam located in an area of map unit 1181. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles and 10 percent cobbles.

A1--0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; soft, very friable, nonsticky and

nonplastic; many very fine and fine roots; many very fine vesicular and interstitial pores; few thin lime coats on undersides of rock fragments; 40 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 7.9); abrupt wavy boundary.

A2--2 to 5 inches; grayish brown (10YR 5/2) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many fine interstitial pores; thick lime coats on undersides of pebbles; 50 percent pebbles; violently effervescent; moderately alkaline (pH 7.9); clear wavy boundary.

Bk--5 to 12 inches; brown (10YR 5/3) extremely channery loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common fine interstitial and many very fine tubular pores; few thick lime coats on undersides of channers; 70 percent channers; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

R--12 inches; fractured limestone.

Type location: Elko County, Nevada; approximately 16 miles southwest of Wendover in the Goshute Mountains; 1,350 feet north and 200 feet west of the southeast corner of section 29, T.32 N., R.68 E.; (40 degrees, 36 minutes, 52 seconds north latitude and 114 degrees, 18 minutes, 12 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist mid fall through mid summer. Dry in late summer and early fall.
Soil temperature: 37 to 42 degrees F.
Summer soil temperature: 50 to 59 degrees F.
Depth to bedrock: 10 to 20 inches.
Thickness of mollic epipedon: 7 to 12 inches.
Calcium carbonate equivalent: 40 to 60 percent.
Control section:
Clay content--10 to 18 percent.
Rock fragments--50 to 80 percent, mainly channers.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bk horizon:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 6.
Carbonates--0 to 4 percent visible secondary carbonates.
Reaction--Moderately alkaline to strongly alkaline.
Consistence--Very friable to friable moist.

Halleck Series

The Halleck series consists of very deep, poorly drained soils that formed in mixed silty alluvium influenced by loess and volcanic ash. Halleck soils are on flood plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), frigid Cumulic Endoaquolls

Typical pedon: Halleck silt loam in an area of map unit 1820. (Colors are for dry soil unless otherwise noted.)

Ap--0 to 5 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; moderate medium angular blocky structure parting to thick platy structure; hard, friable, slightly sticky and plastic; many very fine, fine and medium roots; few very fine and fine tubular and interstitial pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A1--5 to 14 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; moderate very coarse subangular blocky structure; hard, friable, slightly sticky and plastic; common very fine, fine and medium roots; few very fine and fine interstitial and tubular pores; slightly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

A2--14 to 18 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; common very fine, fine and medium roots; few very fine and fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

A3--18 to 34 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; common fine distinct yellowish brown (10YR 5/6) iron mottles; weak medium subangular blocky structure; hard, friable, slightly sticky and plastic; few very fine, fine and medium roots; common very fine and few fine interstitial and tubular pores; slightly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

Cg1--34 to 41 inches; gray (5Y 6/1) silty clay loam, dark gray (5Y 4/1) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and plastic; few very fine, fine and medium roots; few very fine tubular pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

2Cg2--41 to 60 inches; gray (5Y 6/1) very gravelly coarse sandy loam, gray (5Y 5/1) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine and

medium roots; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; about 1 mile northwest of Welcome; approximately 500 feet east and 100 feet south of the northwest corner of section 8, T.37 N., R.61 E.; (41 degrees, 06 minutes, 50 seconds north latitude and 115 degrees, 07 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated at or near the surface for at least one month during most years, mainly during the late winter through early summer months.
Soil temperature: 43 to 47 degrees F.
Mollic epipedon thickness: 31 to 60 inches.
Control section:
Clay content--20 to 35 percent.
Reaction--Mildly alkaline or moderately alkaline.
Effervescence--Slightly effervescent to violently effervescent.
Sand fraction--Less than 15 percent fine sand and coarser.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 or 2 dry and moist.
Other features--Thin strata of clay loam or loam are present in the lower subhorizons of some pedons. Buried A1 horizons are in many pedons.

C horizon:
Hue--5GY, 5Y, 2.5Y, 10YR.
Value--5 through 7 dry.
Chroma--1 or 2.
Texture--Average loam to silty clay loam, but are dominantly clay loam or silty clay loam with less than 15 percent by weight of fine sand or coarser particles.
Other features--Gravelly substratums or drained phases are recognized.

Hapgood Series

The Hapgood series consists of deep and very deep, well drained soils that formed in residuum and colluvium from mixed rocks. Hapgood soils are on mountain side slopes. Slopes are 50 to 75 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, mixed Pachic Cryoborolls

Typical pedon: Hapgood very gravelly loam, located in Elko County, Nevada, Central Part. (Colors are for dry soils unless otherwise noted).

A1--0 to 8 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and few fine roots; common very fine interstitial pores; 35 percent pebbles; slightly acid (pH 6.5); clear smooth boundary.
A2--8 to 20 inches; grayish brown (10YR 5/2) very gravelly loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine tubular and few fine interstitial pores; 40 percent pebbles; slightly acid (pH 6.5); gradual wavy boundary.
AC--20 to 31 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial and tubular pores; 40 percent pebbles and 5 percent cobbles; slightly acid (pH 6.3); clear wavy boundary.
C--31 to 42 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; few fine tubular pores; 40 percent pebbles and 10 percent cobbles; slightly acid (pH 6.3); abrupt wavy boundary.
R--42 inches; hard argillitic siltstone.

Type location: Elko County, Nevada; approximately 17 miles southwest of Northfork, about 1,200 feet south and 1,700 feet east of the northwest corner of section 14, T.39 N., R.53 E.; (41 degrees, 16 minutes, 27 seconds north latitude and 115 degrees, 58 minutes, 40 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry late July through early October.
Soil temperature: 38 to 47 degrees F.
Summer soil temperature: 55 to 59 degrees F.
Mollic epipedon thickness: 16 to 60 inches.
Depth to bedrock: 40 to more than 80 inches.
Control section:
Clay content--18 to 27 percent.

Rock fragments--35 to 50 percent, dominantly pebbles.
Reaction--Slightly acid or neutral.

A horizons:
Hue--10YR or 7.5YR
Value--2 through 5 dry, 2 or 3 moist.
Chroma--1 through 3 in most pedons, chroma of 1 is common only in A1 horizon and chroma of 3 is common only in A3 horizon or below.
Base saturation--50 to 75 percent in upper part.

C horizon:
Hue--10YR or 7.5YR.
Value--4 through 7 dry, 3 through 5 moist.
Chroma--2 through 6.
Texture--Predominantly loam, but some pedons contain strata of fine sandy loam, sandy loam, silt loam or clay loam.

Hardhat Series

The Hardhat series consists of very deep, well drained soils that formed in mixed alluvium over lacustrine sediments. Hardhat soils are on lake plain terraces and fan skirts. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Torriorthents

Typical pedon: Hardhat silt loam is located in an area of map unit 210. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 15 percent pebbles.

A1--0 to 3 inches; light gray (2.5Y 7/2) silt loam, olive brown (2.5Y 4/4) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; thin lime coats on undersides of coarse fragments; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

A2--3 to 9 inches; light gray (2.5Y 7/2) silt loam, light olive brown (2.5Y 5/4) moist; weak medium prismatic structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular and interstitial pores; thin lime coats on undersides of coarse fragments; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bqk--9 to 19 inches; pale yellow (2.5Y 7/4) silt loam, light olive brown (2.5Y 5/4) moist; moderate thin platy structure; hard, friable, sticky and slightly plastic; common very fine and fine roots; few very fine tubular and interstitial pores; thin lime and silica coats bridging mineral grains; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2Bqky1--19 to 26 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; massive; hard, firm and brittle, slightly sticky and nonplastic; few very fine and fine roots; few very fine tubular pores; continuous brittle matrix; thin to moderately thick lime coats on the undersides of coarse fragments; few fine gypsum filaments; 15 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2Bqky2--26 to 40 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 5/3) moist; massive; hard, firm and brittle, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial pores; continuous brittle matrix; few fine irregularly shaped soft lime masses; many thin lime coats on tops and thin to moderately thick lime coats on the sides and undersides of coarse fragments; 35 percent pebbles; few fine gypsum filaments; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C1--40 to 57 inches; white (10YR 8/2) very gravelly fine sandy loam, pale brown (10YR 6/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; few very fine tubular and interstitial pores; thin to moderately thick lime coats on the undersides of coarse fragments; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C2--57 to 60 inches; white (10YR 8/2) very gravelly sandy loam, pale brown (10YR 6/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine tubular and interstitial pores; many thin lime coats on tops and thin to moderately thick lime coats on the sides and undersides of coarse fragments; 55 percent pebbles; violently effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 12 miles south of Montello, Nevada in Pilot Creek Valley; about 1,275 feet east and 275 feet north of the southwest corner of section 3, T.37 N., R.69 E., (41 degrees, 06 minutes, 38 seconds north latitude and 114 degrees, 09 minutes, 16 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist for short periods in the winter and spring, dry late May through early November.
Soil temperature: 53 to 57 degrees F.
Depth to lacustrine material: 15 to 25 inches.
Depth to continuous weak brittle matrix: 10 to 20 inches.
Depth to segregated lime and silica bridging mineral grains: 4 to 10 inches.
Depth to gypsum: 12 to 25 inches.
Reaction: Moderately alkaline or strongly alkaline.
Calcium carbonate equivalent: Averages 10 to 20 percent.
Other features: C horizons are below 35 inches in some pedons.
Control section:
Clay content--8 to 18 percent.
Rock fragments--Average 5 to 20 percent, mainly pebbles.

A horizons:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 4.

Bqk horizons:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Texture--Silt loam, very fine sandy loam, sandy loam, or fine sandy loam in the upper subhorizons and stratified very fine sandy loam to gravelly sand in the lower subhorizons.
Structure--Weak prismatic, weak to strong platy or it is massive.
Consistence--Hard or very hard.
Silica-lime cementation--The upper part has few to many silica bridges or coats, but the matrix is friable or very friable. Some subhorizons are continuously brittle and have very firm or firm consistence.

Bqky horizons:
Hue--10YR, 2.5Y or 5Y.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Texture--Stratified very fine sandy loam to very gravelly sandy loam.
Rock fragments--Pebbles are lacking in some pedons.
Structure--Platy or it is massive.
Consistence--Soft to hard, very friable to firm, nonsticky or slightly sticky, nonplastic or slightly plastic.
Gypsum crystals--Few or common. Relict mottles or black coats are common in any subhorizon.

Hardol Series

The Hardol series consists of very deep, well drained soils that formed in residuum and colluvium from limestone. Hardol soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 40 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic Calcic Pachic Cryoborolls

Typical pedon: Hardol very gravelly silt loam located in an area of map unit 1201. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles and 10 percent cobbles.

Oe--1 to 0 inches; needles and twigs; abrupt smooth boundary
A1--0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly silt loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine tubular pores; 35 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.6); abrupt wavy boundary.
A2--3 to 13 inches; dark brown (10YR 4/3) very gravelly silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, and common fine, medium and coarse roots; many very fine interstitial pores; 45 percent pebbles and 5 percent cobbles; slightly effervescent; mildly alkaline (pH 7.6); clear wavy boundary.
Bk1--13 to 32 inches; brown (10YR 5/3) extremely gravelly silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine, medium and coarse roots; many fine interstitial pores; common thick lime coats and pendants on undersides of rock fragments; 50 percent pebbles and 15 percent cobbles; strongly effervescent; mildly alkaline (pH 7.8); clear boundary.
Bk2--32 to 37 inches; pale brown (10YR 6/3) extremely gravelly silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; many very fine, few fine and medium roots; many fine interstitial pores; common fine filaments and soft masses of lime; many thick lime coats and pendants on undersides of rock fragments; 70 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.0); clear wavy boundary.
Bk3--37 to 60 inches; pale brown (10YR 6/3) extremely gravelly loam, yellowish brown (10YR 5/4) moist;

massive; soft, very friable, slightly sticky and nonplastic; many very fine, common fine and medium roots; many fine interstitial pores; common thick lime coats and pendants on undersides of rock fragments; 65 percent pebbles and 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.0).

Type location: Elko County, Nevada; approximately 20 miles southwest of Wendover in the Goshute Mountains; 1,000 feet south and 200 feet east of the northwest corner of section 21, T.31 N., R.68 E.; (40 degrees, 32 minutes, 59 seconds north latitude and 114 degrees, 18 minutes, 07 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist late fall through early summer, dry mid summer through mid fall.
Soil temperature: 38 to 45 degrees F.
Summer soil temperature: 43 to 47 degrees F.
Depth to base of mollic epipedon: 30 or more inches.
Depth to calcic horizon: 30 to 40 inches.
Control section:
Clay content--20 to 27 percent.
Rock fragments--Averages 60 to 85 percent, with 40 to 60 percent pebbles and 10 to 25 percent cobbles and stones.
Calcium carbonate equivalent (Less than 20 millimeter fraction)--40 to 50 percent. Fine earth fraction contains 4 to 20 percent.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.
Reaction--Mildly alkaline or moderately alkaline.

Bk horizons:
Value--4 through 6 dry, 2 through 5 moist.
Chroma--2 through 4.
Structure--Weak to moderate, fine or medium, subangular blocky or massive.
Consistence--Soft to hard, very friable or friable, nonplastic or slightly plastic.
Reaction--Mildly alkaline or moderately alkaline in upper part and moderately alkaline in lower part.
Other features--Secondary lime occurs as fine filaments and soft masses and as coatings or pendants on rock fragments.

Hardzem Series

The Hardzem series consists of moderately deep, well drained soils that formed in residuum and colluvium from limestone and calcareous shale. Hardzem soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 30 inches and the mean annual temperature is about 41 degrees F.

Taxonomic class: Loamy-skeletal, mixed Typic Cryoboralfs

Typical pedon: Hardzem channery loam located in an area of map unit 1200. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 30 percent pebbles and 15 percent cobbles.

Oi--1 to 0 inches; white fir needles and twigs.
A--0 to 5 inches; grayish brown (10YR 5/2) channery loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine interstitial pores; 20 percent channers; mildly alkaline (pH 7.7); clear smooth boundary.
Bt1--5 to 18 inches; pale brown (10YR 6/3) very channery loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium and coarse roots; many fine tubular pores; few thin clay films on faces of peds and lining pores; 35 percent channers; mildly alkaline (pH 7.7); gradual wavy boundary.
Bt2--18 to 28 inches; pale brown (10YR 6/3) extremely channery loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine, medium and coarse roots; many fine interstitial pores; common thin clay films on faces of peds and lining pores; 70 percent channers; thin lime coats and pendants on undersides of channers; mildly alkaline (pH 7.8); clear wavy boundary.
Cr--28 to 55 inches; highly fractured interbedded limestone and shale.

Type location: Elko County, Nevada; approximately 2 miles southeast of the Dead Cedar Mine, in the Goshute Mountains; 100 feet south and 2,400 feet west of the northeast corner of section 9, T.30 N., R.68 E.; (40 degrees, 29 minutes, 35 seconds north latitude and 114 degrees, 18 minutes, 14 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist late fall through early summer, dry mid-summer through mid-fall.
Soil temperature: 41 to 45 degrees F.

Summer soil temperature: 43 to 47 degrees F.
Depth to argillic horizon: 1 to 3 inches.
Depth to weathered bedrock: 20 to 40 inches.
Control section:
Clay content--20 to 30 percent.
Rock fragments--45 to 80 percent, dominantly channers, but including 5 to 15 percent flagstones.

A horizon:
Value--4 or 5, 2 or 3 moist.
Chroma--2 or 3.

Bt horizon:
Hue--10YR or 7.5YR.
Value--6 or 7, 4 or 5 moist.
Chroma--3 through 6.
Texture--Loam or clay loam.
Structure--Weak to strong, very fine to coarse subangular blocky.
Consistence--Soft or slightly hard dry, slightly sticky or sticky and slightly plastic or plastic wet.
Other features--Some pedons have thin lime coats and pendants on undersides of rock fragments in lower subhorizons.

Haunchee Series

The Haunchee series consists of shallow, well drained soils that formed in residuum from limestone and dolomite. Haunchee soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic Cryic Lithic Rendolls

Typical pedon: Haunchee very gravelly loam in an area of map unit 520. The soil surface is partially covered by approximately 50 percent pebbles and 5 percent cobbles. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; dark brown (10YR 3/3) very gravelly loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and few fine and medium roots; common very fine tubular pores; 30 percent pebbles and 5 percent cobbles; violently effervescent (32% calcium carbonate equivalent in the less than 2 millimeter fraction); moderately alkaline (pH 8.0); clear smooth boundary.
A2--4 to 11 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; 35 percent pebbles and 15 percent cobbles; violently effervescent (38% calcium carbonate equivalent in the less than 2 millimeter fraction); moderately alkaline (pH 8.0).
R--11 inches; fractured limestone.

Type location: Elko County, Nevada; located in the Cherry Creek Mountains; approximately 2,000 feet south and 1,400 feet east of the northwest corner of section 16, T.26 N., R.63 E.; (40 degrees, 07 minutes, 50 seconds north latitude and 114 degrees, 52 minutes, 38 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist mid fall through early summer, dry mid summer through early fall.
Soil temperature: 42 to 46 degrees F.
Summer soil temperature: 55 to 59 degrees F.
Depth to bedrock: 10 to 20 inches.
Reaction: Mildly alkaline or moderately alkaline in the surface layer and moderately alkaline or strongly alkaline below.
Effervescence: Strongly effervescent or violently effervescent throughout.
Calcium carbonate equivalent: 40 to 70 percent.
Control section:
Clay content--10 to 20 percent.
Texture--Very fine sandy loam and loam.
Rock fragments--35 to 60 percent mainly pebbles with up to 20 percent stones and cobbles in some pedons.

A horizon:
Hue--10YR or 7.5YR.
Value--3 through 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Heechee Series

The Heechee series consists of very deep, well drained soils that formed in mixed alluvium. Heechee soils are on fan piedmonts and fan piedmont remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 14 inches; the mean annual temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Typic Argixerolls

Typical pedon: Heechee cobbly loam located in an area of map unit 1700. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered

by approximately 20 percent pebbles and 10 percent cobbles.

A1--0 to 3 inches; brown (10YR 5/3) cobbly loam, very dark grayish brown (10YR 3/2) moist; weak very thick platy parting to fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; common very fine interstitial pores; 15 percent pebbles and 10 percent cobbles; slightly acid (pH 6.2); clear smooth boundary.

A2--3 to 7 inches; brown (10YR 5/3) cobbly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine to coarse roots; many very fine, few fine and medium interstitial pores; 15 percent pebbles and 10 percent cobbles; slightly acid (pH 6.2); clear smooth boundary.

2Bt--7 to 20 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; weak very fine to coarse roots; common very fine, few fine and medium interstitial and tubular pores; few thin clay films as coats and bridging sand grains and lining pores; 35 percent pebbles and 15 percent cobbles; neutral (pH 6.6); gradual smooth boundary.

3C--20 to 60 inches; brownish yellow (10YR 6/6) extremely cobbly coarse sandy loam, dark yellowish brown (10YR 4/6) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine to coarse roots; common very fine interstitial pores; 35 percent pebbles, 35 percent cobbles, and 5 percent stones; slightly acid (pH 6.4).

Type location: Elko County, Nevada; approximately one mile south of the Ruby Valley Forest Service Station; 200 feet north and 2,000 feet east of the southwest corner of section 20, T.33 N., R.60 E.; (40 degrees, 43 minutes, 11 seconds north latitude and 115 degrees, 13 minutes, 45 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist; moist in winter and spring, dry mid July through early October.

Soil temperature: 44 to 47 degrees F.

Mollic epipedon thickness: 12 to 20 inches, includes the upper part of the argillic horizon, and in some pedons the whole argillic horizon.

Depth to base of argillic horizon: 20 to 40 inches.

Reaction: Slightly acid or neutral.

Other features: In some small areas on plateaus, some pedons are recognized with a paralithic contact at 50 to 60 inches.

Control section:

Clay content--25 to 35 percent.

Rock fragments--35 to 60 percent; 20 to 45 percent pebbles, 15 to 25 percent cobbles, 0 to 10 percent stones.

A horizons:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--1 through 3.

Bt horizon:

Hue--7.5YR or 10YR.

Value--4 through 6 dry, 3 through 5 moist.

Chroma--2 through 4.

Texture--Clay loam, sandy clay loam, or loam.

Structure--Prismatic, angular blocky, or subangular blocky.

C horizon:

Hue--7.5YR or 10YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--4 through 6.

Texture--Loam, sandy loam; coarse sandy loam and coarser textures are common in some pedons below 40 inches.

Rock fragments--60 to 80 percent, mainly cobbles and stones.

Consistence--Soft to hard dry, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Structure--Subangular blocky or massive.

Heist Series

The Heist series consists of very deep, well drained, soils that formed in mixed alluvium. Heist soils are on inset fans and fan skirts. Slopes are 0 to 4 percent. The mean annual temperature is about 47 degrees F. and the mean annual precipitation is about 10 inches.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Xeric Torriorthents

Typical pedon: Heist fine sandy loam in an area of map unit 1581. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 35 percent pebbles.

A--0 to 4 inches; light gray (10YR 7/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate

medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1--4 to 17 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine to medium roots; common very fine interstitial pores; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Ck--17 to 32 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and few fine to medium roots; few very fine interstitial pores; 10 percent pebbles; few thin soft masses of lime; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C2--32 to 40 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine interstitial pores; 3 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C3--40 to 60 inches; very pale brown (10YR 7/3) gravelly fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine and fine interstitial pores; few thin 1 to 2 millimeter lime coats and pendants on coarse fragments; 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 12 miles southeast of White Horse Pass; about 2,800 feet north and 100 feet east of the southwest corner of section 5, T.27 N., R.70 E.; (40 degrees, 14 minutes, 25 seconds north latitude and 114 degrees, 06 minutes, 21 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in winter and spring.
Soil temperature: 48 to 52 degrees F.
Control section:
Clay content--8 to 18 percent.
Rock fragments--0 to 15 percent, mainly pebbles
Texture--Fine sandy loam or sandy loam.

A horizon:
Hue--7.5YR or 10YR.
Value--5 through 7 dry, 3 through 5 moist. The value of 5 dry and 3 moist occurs in the upper 4 inches of this horizon.
Chroma--2 through 4.
Effervescence--Slightly effervescent or strongly effervescent. Some pedons are non-effervescent in the upper 3 inches.
Reaction--Neutral through moderately alkaline.

C horizon:
Hue--7.5YR or 10YR.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 through 4.
Texture--Fine sandy loam or sandy loam above 40 inches and includes loamy sand below 40 inches.
Rock fragments--0 to 15 percent, mainly pebbles
Consistence--Soft to hard, dry; very friable or friable, moist.
Carbonates--Subhorizons have discontinuous weak lime cementation or visible secondary carbonates.
Reaction--Mildly alkaline to strongly alkaline.

Hendap Series

The Hendap series consists of shallow, well drained soils that formed in residuum and colluvium from granitic rocks including calcareous loess. Hendap soils are on mountains. 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 Haploxerolls

Typical pedon: Hendap very stony coarse sandy loam, in an area of map unit 471. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 30 percent pebbles, 5 percent cobbles, and 5 percent stones.

Oi--1 to 0 inches; slightly decomposed pinyon and juniper needles, twigs, cones and berries; slightly effervescent; abrupt smooth boundary.

A1--0 to 1 inch; dark grayish brown (10YR 4/2) very stony coarse sandy loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine interstitial pores; 30 percent pebbles, 10 percent cobbles, and 10 percent stones; slightly effervescent; mildly alkaline (pH 7.6); abrupt smooth boundary.

A2--1 to 7 inches; grayish brown (10YR 5/2) very stony coarse sandy loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and few medium roots; 30 percent pebbles, 10 percent cobbles, and 10 percent stones; strongly effervescent (less than 2 percent calcium carbonate equivalent); mildly alkaline (pH 7.6); abrupt smooth boundary.

C--7 to 13 inches; light brownish gray (10YR 6/2) extremely gravelly loamy coarse sand, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium and common coarse roots; 55 percent pebbles and 5 percent cobbles; violently effervescent (4 percent calcium carbonate equivalent); mildly alkaline (pH 7.8); clear irregular boundary.

R--13 inches; granitic bedrock; highly weathered in the upper 4 inches.

Type location: Elko County, Nevada; approximately 550 feet south and 1,450 feet west of the northeast corner of section 33, T.28N., R.68 E.; (40 degrees, 15 minutes, 37 seconds north latitude and 114 degrees, 18 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist late fall through early spring, dry late spring through mid fall.
Soil temperature: 47 to 52 degrees F.
Mollic epipedon: 7 to 10 inches thick.
Depth to bedrock: 10 to 20 inches.
Control section:
Clay content--6 to 12 percent.
Rock fragments--Averages 40 to 70 percent, dominantly 2 to 5 millimeter granitic fragments. 30 to 65 percent pebbles, 5 to 20 percent cobbles, 0 to 5 percent stones.

A horizons:
Calcium carbonate equivalent--1 to 5 percent of the less than 2 millimeter fraction.

C horizon:
Texture--Loamy coarse sand or coarse sandy loam.
Calcium carbonate equivalent--1 to 10 percent of the less than 2 millimeter fraction.

Holborn Series

The Holborn series consists of very shallow well drained soils that formed in residuum and colluvium from tuffs. Holborn soils are on partial ballenas, hills, and rock pediment remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic, shallow Xeric Torriorthents

Typical pedon: Holborn gravelly loam, 4 to 15 percent slopes, is located in an area of map unit 250. (Colors are for dry soils unless otherwise noted.)

A--0 to 3 inches; light brownish gray (10YR 6/2) gravelly loam, dark grayish brown (10YR 4/2) moist; weak fine granular; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 20 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2) abrupt wavy boundary.

Bk--3 to 7 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; massive; slightly hard, friable, sticky and plastic; common very fine and fine roots; common fine tubular pores; 20 percent pebbles; few thin lime coats on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

Cr--7 to 20 inches; soft tuff.

Type location: Elko County, Nevada; approximately 3 miles east of Cobre, about 2,000 feet south and 800 feet west of the northeast corner of section 12, T.37 N., R.67 E., (41 degrees, 06 minutes, 22 seconds north latitude and 114 degrees, 20 minutes, 07 seconds east longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry June through October.
Soil temperature: 47 to 52 degrees F.
Depth to paralithic contact: 6 to 10 inches.
Control section:
Clay content--Averages 18 to 30 percent.
Rock fragments--15 to 35 percent, mainly pebbles.
Reaction--Moderately alkaline or strongly alkaline.
Calcium carbonate equivalent--Averages 5 to 30 percent.

Effervescence--Strongly effervescent or violently effervescent.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.
Other features--Combined thickness of the A horizon is 2 to 6 inches.

Bk horizon:
Hue--2.5YR or 10YR.
Value--5 through 7 dry, 4 through 6 moist.
Chroma--3 or 4.
Texture--Loam or clay loam.

Hopeka Series

The Hopeka series consist of very shallow, well drained soils that formed in residuum and colluvium from limestone. Hopeka soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, frigid Lithic Xeric Torriorthents

Typical pedon: Hopeka very gravelly loam located in an area of map unit 154. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent pebbles and 5 percent cobbles.

A1--0 to 3 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial pores; 40 percent pebbles; thin lime coats and pendants on undersides of pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
A2--3 to 6 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine interstitial pores; 45 percent pebbles; thin lime coats and pendants on undersides of pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
C--6 to 10 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; common very fine interstitial pores; 50 percent pebbles; thin lime coats and pendants on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
R--10 inches; limestone.

Type location: Elko County, Nevada; approximately 2 1/2 miles southeast of Moor Summit; located in an unsectionized area 100 feet north and 1,600 feet east of the projected southwest corner of section 13, T.37 N., R.63 E.; (41 degrees, 04 minutes, 58 seconds north latitude and 114 degrees, 48 minutes, 27 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in winter and spring, dry June through mid October.
Depth to bedrock: 4 to 10 inches.
Soil temperature: 43 to 47 degrees.
Carbonates: 40 to 85 percent calcium carbonate equivalent.
Effervescence: Violently effervescent, but some surface layers are strongly effervescent.
Control section:
Clay content--18 to 27 percent.
Rock fragments--35 to 60 percent limestone, calcite or dolostone pebbles, cobbles, or stones.
Reaction--Moderately alkaline or strongly alkaline.

A horizons:
Hue--10YR or 7.5YR.
Value--5 through 7 dry, 3 or 4 moist.
Chroma--2 or 3.

C horizon:
Hue--10YR or 7.5YR.
Value--5 through 7 dry, 3 or 4 moist.
Chroma--2 or 3.
Structure--Weak to moderate subangular blocky or it is massive.
Consistence--Soft or slightly hard dry, very friable or friable.

Hulderman Series

The Hulderman series consists of very deep, poorly drained soils that formed in mixed loamy alluvium over lacustrine sand. Hulderman soils are on floodplains. Slopes are 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, mesic, Duric Endoaquolls

Typical pedon: Hulderman fine sandy loam, in an area of map unit 1380. (Colors are for dry soil unless otherwise noted.)

A1--0 to 5 inches; gray (10YR 5/1) fine sandy loam, very dark gray (10YR 3/1) moist; moderate medium platy structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine, fine, and few medium roots; common fine tubular pores; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Ab2--5 to 15 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; few fine distinct yellowish brown (10YR 5/6) iron mottles; moderate to strong fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine, fine and few medium roots; common fine tubular and few fine interstitial pores; noneffervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Bq1--15 to 18 inches; pale olive (5Y 6/3) loam, olive (5Y 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common fine tubular and interstitial pores; discontinuous brittle matrix; noneffervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2Bq2--18 to 27 inches; pale yellow (5Y 7/3) loamy sand, olive (5Y 5/3) moist; massive; hard, firm and brittle, nonsticky and nonplastic; few very fine, fine and medium roots; common fine tubular and interstitial pores; continuous brittle matrix; noneffervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

2C--27 to 60 inches; pale yellow (2.5Y 8/4) sand, light yellowish brown (2.5Y 6/4) moist; massive structure parting to single grain structure; soft parting to loose, nonsticky and nonplastic; few fine roots; many very fine interstitial pores; 5 percent fine pebbles; moderately alkaline (pH 7.9).

Type location: Elko County, Nevada; about 17 miles south of Wells in Clover Valley; in an unsectionized area approximately 700 feet west and 2,200 feet north of the projected southeast corner of section 17, T.34 N., R.63 E.; (40 degrees, 49 minutes, 40 seconds north latitude and 114 degrees, 52 minutes, 28 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated near the surface for at least one month during most years, mainly during late winter through late spring.

Soil temperature: 47 to 52 degrees F.
Mollic epipedon thickness: 12 to 20 inches.
Depth to contrasting horizon: 12 to 25 inches.
Control section:
Clay content--20 to 25 percent in the upper part and less than 8 percent in the lower part.

A horizons:
Value--3 through 5 dry, 1 through 3 moist.
Chroma--1 or 2.

Bq horizons:
Hue--5Y or 2.5Y.
Value--6 or 7 dry, 3 through 5 moist.
Chroma--3 or 4.
Cementation--Continuous and discontinuous brittle matrix.

2C horizon:
Hue--5Y or 2.5Y.
Value--7 or 8 dry, 6 or 7 moist.
Chroma--4 or 5.
Texture--Sand or fine sand. Thin subhorizons are modified by up to 25 percent pebbles.
Other features--Thin strata of silty clay loam or silty clay may occur in some pedons below 40 inches.

Hundraw Series

The Hundraw series consists of very shallow, well drained soils that formed in residuum and colluvium from tuffs. Hundraw soils are on fan piedmont remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic, shallow Xeric Torriorthents.

Typical pedon: Hundraw gravelly fine sandy loam in an area of map unit 241. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 30 percent pebbles and 5 percent cobbles.

A1--0 to 2 inches; light gray (10YR 7/2) gravelly fine sandy loam, grayish brown (10YR 5/2) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; common very fine tubular and common very fine and fine vesicular pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2--2 to 5 inches; light gray (10YR 7/2) gravelly fine sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk--5 to 10 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine and few medium roots; 10 percent pebbles; few thin lime coats on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
Cr--10 inches; tuff; violently effervescent.

Type location: Elko County, Nevada; approximately 1,975 feet south and 2,425 feet west of the northeast corner of section 13, T.37 N., R.67 E.; (41 degrees, 05 minutes, 33 seconds north latitude and 114 degrees, 20 minutes, 30 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in the winter and spring, dry June through October.
Soil temperature: 47 to 52 degrees F.
Depth to paralithic contact: 4 to 10 inches.
Control section:
Clay content--8 to 18 percent.
Rock fragments--Averages 5 to 20 percent, mainly pebbles.
Effervescence--Strongly effervescent or violently effervescent.
Calcium carbonate equivalent--5 to 15 percent.

A horizons:
Hue--10YR, 2.5Y and 5Y.
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 through 4.

Bk horizon:
Hue--10YR, 2.5Y and 5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Texture--Fine sandy loam or loam.
Clay content--8 to 18 percent.
Rock fragments--Averages 5 to 15 percent, mostly pebbles.
Structure--Weak or moderate, fine or medium subangular blocky.

Hunnton Series

The Hunnton series consists of moderately deep over a duripan, well drained soils that formed in mixed alluvium influenced by loess high in volcanic ash. Hunnton soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual air temperature is about 48 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Xerollic Durargids

Typical pedon: Hunnton silt loam located in an area of map unit 260. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 5 percent pebbles.

A1--0 to 5 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and few medium roots; many very fine tubular pores; mildly alkaline (pH 7.8); clear smooth boundary.
A2--5 to 8 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; weak thin platy structure parting to weak medium subangular blocky; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine tubular pores; mildly alkaline (pH 7.8); clear smooth boundary.
Bt1--8 to 12 inches; pale brown (10YR 6/3) clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; common very fine, few fine and medium roots; many very fine and fine tubular pores; few thin clay films on faces of peds and lining pores; moderately alkaline (pH 8.0); abrupt smooth boundary.
Bt2--12 to 21 inches; very pale brown (10YR 7/3) gravelly clay, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine, few fine and medium roots; many very fine and fine tubular pores; common moderately thick clay films on faces of peds and lining pores; 20 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary.
Bqkm--21 to 40 inches; white (10YR 8/2) indurated duripan, very pale brown (10YR 7/3) moist; massive; very hard, very firm, brittle; continuous 1 to 2 millimeter laminar cap; violently effervescent.

Type location: Elko County, Nevada; approximately 3 miles northeast of Moore Summit; located in an unsectionized area, 1,800 feet south and 1,600 feet west of the projected northeast corner of section 5, T.37 N., R.64 E.; (41 degrees, 07 minutes, 13 seconds north latitude and 114 degrees, 45 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist mid fall through spring, dry from summer through early fall.
Soil temperature: 47 to 52 degrees F.
Depth to duripan: 20 to 40 inches.
Depth to lime: 19 to 32 inches.
Other features: Some pedons have a 4 to 11 inch thick continuously and/or discontinuous weakly silica cemented Bkq or Bq horizon above the duripan.
Control section:
Clay content--40 to 55 percent
Rock fragments--Average 5 to 25 percent

A horizons:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.
Reaction--Neutral through moderately alkaline.

Bt horizons:
Hue--10YR or 7.5YR.
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 4.
Texture--Clay or gravelly clay.
Clay content--40 to 55 percent.
Rock fragments--Up to 25 percent, mainly pebbles.
Structure--Weak or moderate, very fine to medium subangular or angular blocky or prismatic.
Consistence--Slightly hard to very hard dry; sticky or very sticky and plastic or very plastic, wet.
Reaction--Neutral through moderately alkaline.
Effervescence--Noneffervescent in the upper subhorizons, none to strongly in lower subhorizons.
Other features--Some pedons have a 4 to 7 inch thick loam, silty clay loam or clay loam Bt1 horizon with thin clay films. Some pedons have lime masses and silica concretions in the lower portion of the horizon. Lower subhorizons have up to 15 percent durinodes in some pedons.

Bqkm horizons:
Value--7 or 8 dry, 4 through 7 moist.
Chroma--2 or 3 dry, 3 or 4 moist.
Structure--Massive, or has weak medium to very thick platy structure.
Other features--Some pedons have strongly silica cemented horizons with 40 to 60 percent pebbles below the indurated duripan.

Hussa Series

The Hussa series consists of very deep, very poorly and poorly drained soils that formed in mixed loamy alluvium with a component of vitric pyroclastic materials. Hussa soils are on flood plains adjacent to fan piedmont remnants. Slopes are 0 to 2 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine-loamy, mixed (calcareous), frigid Fluvaquentic Haplaquolls

Typical pedon: Hussa silt loam is located in Elko County, Nevada, Central Part. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; gray (10YR 5/1) silt loam, very dark gray (10YR 3/1) moist; moderate fine granular structure; slightly hard, very friable, sticky and plastic; many very fine and few fine roots; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
A2--4 to 16 inches; gray (10YR 5/1) silty clay loam, very dark grayish brown (10YR 3/2) moist; few fine distinct yellowish brown (10YR 5/6) iron mottles; moderate medium subangular blocky structure; slightly hard, friable, very sticky and very plastic; common fine and few very fine roots; common fine tubular and common very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
C1--16 to 21 inches; gray (10YR 6/1) clay loam, dark grayish brown (10YR 4/2) moist; few fine faint brown (10YR 4/3) iron mottles; massive; hard, firm, sticky and plastic; few very fine roots; common very fine and few fine tubular pores; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
C2--21 to 36 inches; light gray (10YR 7/1) clay loam, grayish brown (10YR 5/2) moist; massive; hard, firm, sticky and plastic; few very fine roots; many very fine interstitial and few fine tubular pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
Ab--36 to 50 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; massive; hard, firm, sticky and plastic; few fine tubular pores; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Cg--50 to 60 inches; grayish brown (2.5Y 5/2) clay loam, very dark grayish brown (2.5Y 3/2) moist; many medium prominent brown (10YR 4/3) iron mottles, and common medium prominent dark greenish gray (5GY 4/1) mottles; massive; very hard, firm, very sticky and very plastic; violently effervescent; moderately alkaline(pH 8.4)

Type location: Elko County, Nevada; approximately 2 miles north of Lamoille; about 900 feet west and 2,600 feet north of the southeast corner of section 8, T.33 N., R.58 E.; (40 degrees, 45 minutes, 30 seconds north latitude and 115 degrees, 27 minutes, 13 seconds west longitude.)

Range in characteristics:

Soil moisture: These soils are saturated at or near the surface for at least one month during most years. Drained phases are recognized.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon: 12 to 24 inches.
Control section:
Clay content--25 to 35 percent.
Texture--Stratified sandy clay loam to silty clay loam. Some pedons have thin strata of loam, fine sandy loam, and sandy loam.
Rock fragments--0 to 15 percent. Some pedons have thin horizons with up to 35 percent pebbles.
Reaction--Moderately alkaline to strongly alkaline.
Carbonates--Few or common fine or medium white lime segregations can occur in any horizon but are not common in horizons above the water table.
Effervescence--Effervescent in the upper 20 to 30 inches but may be non-effervescent below this depth in some pedons.
Other features--A root mat (Oe horizon), up to 4 inches thick is present in some areas that have not been cultivated.

A horizons:
Hue--10YR or 2.5Y.
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 or 2.
Other features--One to several buried A horizons occur throughout the profile.

C horizons:
Hue--10YR or 2.5Y.
Value--5 through 7 dry, and 3 through 5 moist.
Chroma--1 through 3.
Structure--Subangular blocky or it is massive.
Texture--Stratified loam to silty clay loam. Thin strata of fine sandy loam, silty clay or clay may occur below 40 inches.
Clay content--Averages 25 to 35 percent.
Rock fragments--Averages 0 to 15 percent.
Other features--This horizon contains faint to prominent iron, manganese, or organic matter stains.

Hutchley Series

The Hutchley series consists of shallow, well drained, moderately, slowly permeable soils that formed in residuum and colluvium from rhyolite. Hutchley soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Lithic Argixerolls

Typical pedon: Hutchley very gravelly loam located in an area of map unit 1030. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 35 percent pebbles and 10 percent cobbles.

A--0 to 1 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine vesicular pores; 35 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.6); clear smooth boundary.
AB--1 to 4 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; and common very fine tubular pores; 35 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.6); clear smooth boundary.
Bt1--4 to 7 inches; brown (10YR 4/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine roots; common very fine tubular pores; 40 percent pebbles and 10 percent cobbles; few thin clay films on faces of peds and lining pores; mildly alkaline (pH 7.6); clear smooth boundary.
Bt2--7 to 13 inches; brown (10YR 4/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, friable, sticky and plastic; common very fine roots; few very fine tubular

pores; 40 percent pebbles, 10 percent cobbles, and 5 percent stones; few thin clay films on faces of peds and lining pores; mildly alkaline (pH 7.8); abrupt wavy boundary.
R--13 inches; rhyolite.

Type location: Elko County, Nevada; approximately 8 miles east of Odgers Ranch in the Cherry Creek Mountains; 2,100 feet south and 800 feet east of the northwest corner of section 29, T.28 N., R.63 E.; (40 degrees, 16 minutes, 34 seconds north latitude and 114 degrees, 54 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil temperature: 42 to 47 degrees F.
Thickness of mollic epipedon: 10 to 20 inches.
Depth to bedrock: 10 to 20 inches.
Control section:
Clay content--24 to 35 percent.
Rock fragments--45 to 70 percent.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3 dry or moist.
Reaction--Neutral to mildly alkaline.

AB horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3 dry or moist.
Reaction--Neutral to mildly alkaline.

Bt1 horizon:
Value--4 or 5 dry.
Chroma--2 or 3 dry or moist.
Clay content--24 to 35 percent.
Rock fragments--15 to 65 percent pebbles, 5 to 30 percent cobbles.
Texture--Loam or clay loam.
Reaction--Neutral to mildly alkaline.

Bt2 horizon:
Value--4 or 5 dry, 3 or 4 moist.
Chroma--2 to 4 dry or moist.
Texture--Clay loam.
Clay content--28 to 35 percent.
Rock fragments--15 to 50 percent pebbles, 5 to 45 percent cobbles, 0 to 10 percent stones.
Reaction--Neutral to mildly alkaline.

Hyzen Series

The Hyzen series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Hyzen soils are on mountains and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 40 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, frigid Lithic Haploxerolls

Typical pedon: Hyzen extremely stony loam in an area of map unit 990. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 45 percent pebbles, 10 percent stones, and 5 percent cobbles.

A1--0 to 3 inches; grayish brown (10YR 5/2) extremely stony loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many thick lime coats and lime pendants on undersides of rock fragments; 20 percent pebbles, 20 percent cobbles and 20 percent stones; violently effervescent; moderately alkaline (pH 8.3); abrupt wavy boundary.
A2--3 to 8 inches; brown (10YR 5/3) extremely stony loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; many thick lime coats and few thin lime pendants on undersides of rock fragments; 20 percent pebbles, 20 percent cobbles and 20 percent stones; violently effervescent; moderately alkaline (pH 8.3); clear wavy boundary.
A3--8 to 13 inches; brown (10YR 5/3) extremely stony loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine and medium roots; few thin lime coats on undersides of coarse fragments; 5 percent pebbles, 30 percent cobbles, and 40 percent stones; violently effervescent; moderately alkaline (pH 8.3); abrupt irregular boundary.
R--13 inches; limestone

Type location: Elko County, Nevada; located on White Horse Mountain; approximately 1,900 feet north and 1,050 feet west of the southeast corner of section 22, T.28 N., R.68 E.; (40 degrees, 16 minutes, 53 seconds north latitude and 114 degrees, 17 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter, spring and early summer, dry in late summer and fall.
Soil temperature: 42 to 47 degrees F.
Mollic epipedon thickness: 6 to 14 inches.
Depth to bedrock: 6 to 14 inches.
Calcium carbonate equivalent--40 to 60 percent of the up to 20 millimeter fraction.
Control section:
Clay content--Averages 10 to 18 percent.
Rock fragments--60 to 85 percent with more than half cobbles and stones.

A horizons:
Value--4 or 5 dry.
Chroma--2 or 3

Idway Series

Idway series consists of very deep, well drained soils that formed in mixed alluvium. Idway soils are on alluvial flats, beach plains, and lake plains. Slopes are 0 to 4 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Durixerollic Camborthids

Typical pedon: Idway loamy sand, in an area of map unit 730. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 25 percent pebbles.

A--0 to 4 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; strong thick platy structure parting to strong thin platy; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine tubular pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
Bw1--4 to 7 inches; light gray (10YR 7/2) sandy loam, yellowish brown (10YR 5/4) moist; moderate thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores and few tubular; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
Bw2--7 to 12 inches; very pale brown (10YR 7/3) sandy loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores and few tubular; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
Bqk1--12 to 20 inches; light gray (10YR 7/2) loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores and few tubular; 30 percent cylindrical durinodes 1/4 to 1/2 inch in diameter and 1 to 3 inch platy durinodes; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.
Bqk2--20 to 27 inches; light gray (10YR 7/2) loam, brown (10YR 5/3) moist; light brown (7.5YR 6/4) organic stains on plate surfaces, root mats and along root channels; strong thick platy structure parting to strong thin platy; hard, firm and brittle, slightly sticky and slightly plastic; common very fine roots in pockets and few in matrix; many very fine interstitial pores and few tubular; 50 percent strong brittle matrix, 30 percent weak and 10 percent noncemented pockets of loamy sand; 5 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.4); abrupt wavy boundary.
2C--27 to 60 inches; variegated stratified gravelly coarse sand to sand; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 10 percent 1 to 3 inch thick discontinuous cemented lenses; 30 percent pebbles; few thin lime and silica pendants on undersides of pebbles; slightly effervescent; very strongly alkaline (pH 9.6).

Type location: Elko County, Nevada; approximately 12 miles southeast of Currie, about 2,500 feet west and 2,100 feet south of the northeast corner of section 17, T.26 N., R.65 E.; (40 degrees, 07 minutes, 46 seconds north latitude and 114 degrees, 39 minutes, 53 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in late fall through early spring, dry mid-spring through mid-fall.
Soil temperature: 47 to 52 degrees F.
Depth to Duric horizon: 10 to 20 inches.
Control section:
Clay content--The upper part is 8 to 18 percent and the lower part is 2 to 8 percent.
Rock fragments--Upper part averages 0 to 5 percent and lower part averages 20 to 50 percent.

A horizon:
Value--6 or 7 dry, 3 through 6 moist.
Reaction--Moderately alkaline or strongly alkaline.
Calcium carbonate equivalent--1 to 10 percent.
SAR--1 to 5.

Bw horizons:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Rock fragments--0 to 5 percent.
Structure--Platy and subangular blocky.
Consistence--Nonsticky to slightly sticky.
Reaction--Moderately alkaline to strongly alkaline.
Calcium carbonate equivalent--1 to 10 percent.
SAR--1 to 5.

Bqk horizons:
Value--6 or 7 dry, 5 or 6 moist.
Chroma--2 or 3.
Texture--Loam or sandy loam.
Rock fragments--0 to 5 percent.
Structure--Platy, subangular blocky or massive.
Reaction--Strongly alkaline or very strongly alkaline.
Calcium carbonate equivalent--5 to 15 percent.
SAR--1 to 5.
Other features--30 to 80 percent discontinuous silica and lime cementation.

2C horizon:
Texture--Stratified extremely gravelly coarse sand to fine sand.
Structure--Massive or single grain.
Reaction--Strongly alkaline or very strongly alkaline.
Calcium carbonate equivalent--1 to 15 percent of the less than 2 millimeter fraction.
SAR--1 to 5.
Other features--0 to 15 percent discontinuous silica and lime cemented matrix.

Izamatch Series

The Izamatch series consists of very deep, somewhat excessively drained soils that formed in re-worked mixed alluvium influenced by calcareous loess. Izamatch soils are on beach plains and fan aprons. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual air temperature is about 52 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents

Typical pedon: Izamatch gravelly sandy loam, in an area of map unit 1520. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 50 percent pebbles.

A1--0 to 3 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine interstitial pores; 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
A2--3 to 13 inches; very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine interstitial pores; few thin (1 to 2mm) lime coats on undersides of coarse fragments; 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
2Ck1--13 to 22 inches; very pale brown (10YR 7/3) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; few very fine interstitial pores; common thin (1 to 2mm) lime coats on undersides of coarse fragments; 50 percent pebbles; violently effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.
3Ck2--22 to 60 inches; very pale brown (10YR 7/3) extremely gravelly coarse sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; common thin (1 to 2mm) lime coats on undersides of coarse fragments; stratified with thin bands of weak lime cementation, slightly hard and very friable; 70 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 12 miles south of Wendover, Nevada; about 1,500 feet east and 800 feet north of the southwest corner of section 36, T.32 N., R.69 E.; (40 degrees, 35 minutes, 53 seconds north latitude and 114 degrees, 07 minutes, 34 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July and October following convection storms.
Soil temperature: 53 to 59 degrees F.
Depth to 2Ck horizon: 10 to 20 inches.
Control section:
Clay content--Averages 0 to 8 percent.
Rock fragments--35 to 75 percent, dominantly pebbles.

A horizon:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 4.

Reaction--Moderately alkaline to strongly alkaline.
Organic matter content--Less than 0.5 percent.
Calcium carbonate equivalent--20 to 30.
SAR--0 to 5.

2Ck horizon:
Value--6 through 8 dry, 5 or 6 moist.
Chroma--2 through 4.
Texture--Loamy sand, sand, or loamy coarse sand.
Rock fragments--35 to 60 percent, mainly pebbles.
Structure--Massive or single grain.
Reaction--Moderately alkaline to very strongly alkaline.
Calcium carbonate equivalent--20 to 30.
SAR--5 to 12.

3Ck horizon:
Value--7 or 8 dry, 5 or 6 moist.
Chroma--2 or 3.
Texture--Stratified extremely gravelly coarse sand to very gravelly loamy sand.
Rock fragments--35 to 75 percent.
Structure--Massive or single grain.
Reaction--Strongly alkaline to very strongly alkaline.
Calcium carbonate equivalent--30 to 40.
SAR--13 to 30.

Izar Series

The Izar series consists of shallow and very shallow somewhat excessively drained soils that formed in residuum and colluvium from tuffs. Izar soils are on fan piedmont remnants. Slopes are 2 to 50 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 46 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Xeric Torriorthents

Typical pedon: Izar very gravelly loam in an area of map unit 252. (Colors are for dry soil unless otherwise noted.)

A--0 to 3 inches; light gray (10YR 7/2) very gravelly loam, light brownish gray (10YR 6/2) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; many very fine interstitial, common very fine and fine vesicular pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk--3 to 12 inches; light brownish gray (10YR 6/2) very gravelly loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; many very fine and fine tubular pores; few thin lime coats on pebbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--12 inches; hard tuff.

Type location: Elko County, Nevada; approximately 7 miles west of Spruce Mountain; about 400 feet south and 2,200 feet west of the northeast corner of section 9, T.31 N., R.62 E.; (40 degrees, 35 minutes, 14 seconds north latitude and 114 degrees, 58 minutes, 35 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist late fall through early spring, dry mid-July through October.
Soil temperature: 47 to 52 degrees F.
Reaction: Mildly alkaline or moderately alkaline.
Calcium carbonate equivalent: 5 to 35 percent.
Other features: Commonly has silica and lime pan fragments covering up to 75 percent of the surface area.
Depth to bedrock: 7 to 14 inches.
Control section:
Clay content--18 to 25 percent.
Rock fragments--40 to 75 percent, mainly pebbles.

A horizon:
Hue--2.5Y or 10YR.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 or 3.

Bk horizons:
Hue--2.5Y or 10YR.
Value--6 through 8 dry, 4 or 5 moist.
Chroma--2 through 4.
Structure--Fine or medium subangular blocky.
Consistence--Soft or slightly hard dry, slightly sticky or sticky and slightly plastic or plastic wet.
Lime coats--None to common on undersides of pebbles.

Jackpot Series

The Jackpot series consists of shallow, well drained soils that formed in residuum and colluvium from tuff influenced by ash. Jackpot soils are on side slopes of hills and rock piedmont remnants. Slopes are 4 to 15 percent. Mean annual precipitation is about 9 inches and mean annual temperature is about 47 degrees F.

Taxonomic class: Ashy, mesic, shallow Vitrixerandic Camborthids

Typical pedon: Jackpot sandy loam is located in an area of map unit 380. (Colors are for dry soils unless otherwise noted.)

A--0 to 4 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; many very fine interstitial pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear wavy boundary.
Bw--4 to 11 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; many very fine interstitial pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear wavy boundary.
Cr--11 to 20 inches; soft ashy tuff.

Type location: Elko County, Nevada; approximately 1/2 mile southeast of Cobre, about 900 feet east and 1,600 feet south of the northwest corner of section 10, T.37 N., R.67 E.; (41 degrees, 06 minutes, 27 seconds north latitude and 114 degrees, 23 minutes, 16 seconds west longitude.)

Range in characteristics:

Soil moisture: Dry from June through October, but are moist in winter and spring.
Soil temperature: 47 to 50 degrees F.
Reaction: Neutral or mildly alkaline.
Depth to bedrock: 10 to 20 inches.
Control section:
Clay content--5 to 10 percent.
Rock fragments--Up to 15 percent.
Pyroclastic material--75 to 90 percent of the 0.02 to 2 millimeter fraction and 45 to 70 percent of the fine earth fraction.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.

Bw horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.

James Canyon Series

The James Canyon series consists of very deep, poorly drained soils that formed in mixed alluvium. James Canyon soils are on flood plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Cumulic Endoaquolls

Typical pedon: James Canyon fine sandy loam, located in an area of map unit 1710. (Colors are for dry soil unless otherwise noted.)

A1--0 to 8 inches; dark gray (10YR 4/1) fine sandy loam, black (10YR 2/1) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine interstitial, common very fine and fine tubular pores; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
A2--8 to 23 inches; very dark gray (2.5Y 3/0) gravelly loam, black (2.5Y 2/0) moist; strong coarse prismatic structure; hard, friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; many very fine and fine tubular pores; 15 percent pebbles; moderately alkaline (pH 8.0); clear wavy boundary.
A3--23 to 25 inches; gray (10YR 5/1) gravelly silt loam, black (10YR 2/1) moist; weak thin platy structure; hard, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; many very fine, fine and common medium tubular pores; 15 percent pebbles; moderately alkaline (pH 8.0); abrupt wavy boundary.
A4--25 to 33 inches; dark gray (5Y 4/1) gravelly silt loam, black (2.5Y 2/1) moist; strong medium prismatic structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine, fine, common medium and few coarse tubular pores; 20 percent pebbles; moderately alkaline (pH 8.0); clear wavy boundary.
C1--33 to 45 inches; light olive gray (5Y 6/2) gravelly loam with a discontinuous strata of gravelly coarse sand, dark gray (5Y 4/1) moist; massive; hard, friable, slightly sticky and slightly plastic; many very fine and fine interstitial pores; many medium distinct brownish yellow (10YR 6/6) mottles; 20 percent pebbles; moderately alkaline (pH 8.0); clear wavy boundary.
C2--45 to 60 inches; gray (5Y 5/1) fine sandy loam, very dark gray (5Y 3/1) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine

and fine interstitial pores; few fine distinct brownish yellow (10YR 6/6) mottles; many fine and medium distinct black (2.5Y 2/0) organic stains; 5 percent pebbles; moderately alkaline (pH 8.0).

Type location: Elko County, Nevada; about 9 miles southeast of the Ruby Ranger Station; approximately 1,600 feet south and 400 feet east of the northwest corner of section 34, T.32 N., R.60 E.; (40 degrees, 36 minutes, 49 seconds north latitude and 115 degrees, 11 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually saturated to the surface for 1 to 2 months during late winter or early spring unless drained.
Soil temperature: 48 to 53 degrees F.
Reaction: Slightly acid to neutral, some pedons are moderately alkaline.
Mollic epipedon: 24 to 36 inches thick.
Control section:
Clay content--18 to 27 percent clay.
Rock fragments--15 to 35 percent pebbles.

A horizon:
Hue--10YR through 5Y.
Value--3 through 5 dry, 2 or 3 moist.
Chroma--0 through 2.

C horizon:
Hue--10YR through 5Y.
Value--5 or 6 dry, 3 or 4 moist,
Chroma--1 or 2.
Consistence--Slightly hard or hard dry, very friable or friable moist.
Mottles--Mottled and gleyed in the lower part in some pedons.
Texture--Clay loam, loam or silt loam, but thin strata of sandy loam, clay loam, and loamy fine sand are in some pedons.

Jericho Series

The Jericho series consists of shallow over a duripan, well drained, moderately rapidly permeable soils that formed in mixed alluvium. Jericho soils are on fan piedmonts. Slopes are 2 to 30 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 48 degrees.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Durorthids

Typical pedon: Jericho very gravelly loam located in an area of map unit 411. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 45 percent pebbles.

A--0 to 4 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, common medium and few coarse roots; many interstitial pores; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
Bw--4 to 14 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium and few coarse roots; many interstitial and few very fine tubular pores; few 2 to 5 millimeter lime coats and pendants on undersides of pebbles and cobbles; 45 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
Bqkm--14 to 28 inches; white (10YR 8/1) indurated duripan, very pale brown (10YR 7/3) moist; strong thick platy structure; extremely hard, extremely firm, nonsticky and nonplastic; few very fine roots in fractures; 60 percent pebbles and 15 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
2C--28 to 60 inches; very pale brown (10YR 7/3) extremely gravelly loamy coarse sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; many interstitial pores; 25 percent discontinuous lime and silica cemented lenses with 2 to 5 millimeter pendants on undersides of rock fragments; 75 percent pebbles; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 2 miles southeast of Little White Horse Pass; 200 feet south and 2,200 feet west of the northeast corner of section 32, T.28 N., R.69 E.; (40 degrees, 15 minutes, 38 seconds north latitude and 114 degrees, 12 minutes, 32 seconds west longitude.)

Range in characteristics:

Soil temperature: 47 to 52 degrees F. The soils are dry for 55 to 75 percent of the time that the soil temperature is above 41 degrees F.
Depth to silica cemented hardpan: 14 to 20 inches. The upper 6 or less inches are indurated and below this it is strongly cemented.

Control section:
Clay content--10 to 18 percent.
Rock fragments--35 to 60 percent.

A horizon:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 through 4 dry or moist.
Reaction--Moderately alkaline or strongly alkaline.
Effervescence--Slightly effervescent to violently effervescent.

Bw horizon:
Value--of 5 through 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Texture--It is gravelly fine sandy loam, gravelly coarse sandy loam, or very gravelly sandy loam.
Reaction--Moderately alkaline or strongly alkaline.
Effervescence--Slightly effervescent to violently effervescent.

Bqkm horizon:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--1 through 4.

Jungo Series

The Jungo series consists of very deep, well drained soils that formed in mixed alluvium with a component of loess and volcanic ash. Jungo soils are on ballenas. Slopes are 4 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Xerollic Haplargids

Typical pedon: Jungo very gravelly loam located in an area of map unit 1640. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 70 percent pebbles, 5 percent cobbles, and 1 percent stones.

A--0 to 3 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many interstitial, common very fine and fine vesicular pores; 40 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Btk1--3 to 8 inches; pale brown (10YR 6/3) very gravelly clay loam, dark brown (10YR 4/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine, fine and common medium roots; many very fine and fine tubular pores; common thin clay films lining pores as coats and bridging sand grains; common 1 to 2 millimeter lime coats and pendants on undersides of rock fragments; 45 percent pebbles and 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Btk2--8 to 20 inches; pale brown (10YR 6/3) very gravelly clay loam, yellowish brown (10YR 5/4) moist; strong medium subangular blocky structure; hard, firm, sticky and plastic; common very fine, fine and few medium roots; many very fine and fine tubular pores; many thin and moderately thick clay films on faces of peds, lining pores, and coating and bridging sand grains; many medium and coarse soft masses of lime; 1 to 2 millimeter lime coats on undersides of rock fragments; 45 percent pebbles, 5 percent cobbles, and 5 percent stones; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Btk3--20 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few very fine roots; many very fine and fine tubular pores; many thin and moderately thick clay films on faces of peds lining pores, and coating pebbles; common fine and medium soft masses of lime; 1 to 2 millimeter lime coats on undersides of rock fragments; few fine soft masses of gypsum; 40 percent pebbles, 15 percent cobbles, and 5 percent stones; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 18 miles southwest of Wendover about 600 feet north and 2,000 feet west of the southeast corner of section 3, T.30 N., R.69 E.; (40 degrees, 29 minutes, 42 seconds north latitude and 114 degrees, 10 minutes, 14 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and early spring; dry from May through October.
Soil temperature: 53 to 55 degrees F.
Depth to carbonates: 3 to 8 inches.
Control section:
Clay content--27 to 35 percent.
Rock fragments--Averages 35 to 60 percent, mainly pebbles.

A horizon:
Value--6 or 7 dry and 4 or 5 moist.
Chroma--2 or 3.
Reaction--Mildly alkaline or moderately alkaline.

Btk horizons:
Hue--10YR or 7.5YR.
Value--5 or 6 dry.
Chroma--3 or 4.
Texture--Clay loam or sandy clay loam.
Clay content--27 to 35 percent.
Rock fragments--Averages 35 to 75 percent, mainly pebbles; typically increasing with depth and including stones and cobbles in the lower subhorizons.
Structure--Weak to strong, fine to coarse subangular blocky or horizon is massive.
Consistence--Slightly hard or hard dry, friable or firm moist.
Reaction--Moderately alkaline or strongly alkaline.

Katelana Series

The Katelana series consists of very deep, well drained soils that formed in alluvium from limestone over lacustrine sediments. Katelana soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Fine-silty, carbonatic, mesic Typic Torriorthents

Typical pedon: Katelana silt loam located in an area of map unit 914. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; moderate very thick platy structure parting to moderate very fine platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine and fine vesicular pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--2 to 5 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; moderate very thick platy structure parting to moderate very fine platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine vesicular and interstitial pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Cn1--5 to 9 inches; light gray (10YR 7/2) silt loam, grayish brown (10 YR 5/2) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine tubular pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Cn2--9 to 13 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; many very fine and few fine and medium roots; many very fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

Cn3--13 to 28 inches; white (10YR 8/2) silt loam, light gray (10YR 7/2) moist; moderate medium prismatic structure parting to moderate medium angular blocky structure; slightly hard, very friable, sticky and slightly plastic; many very fine and few fine roots; many very fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); abrupt wavy boundary.

2Ckyz1--28 to 32 inches; white (2.5Y 8/2) silty clay loam, light gray (2.5Y 7/2) moist; moderate coarse prismatic structure; slightly hard, very friable, sticky and plastic; common very fine and few fine and medium roots; common very fine tubular pores; common fine salt masses as seams and threads, few fine threads of lime and few gypsum crystals; violently effervescent; very strongly alkaline (pH 9.6); clear wavy boundary.

2Ckyz2--32 to 62 inches; white (2.5Y 8/2) silty clay loam, light gray (2.5Y 7/2) moist; common medium distinct reddish brown (5YR 5/3 and 4/4) iron mottles; moderate coarse and very coarse prismatic structure; slightly hard, very friable, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; common fine salt masses as seams and threads, few fine threads of lime; common fine soft gypsum masses in horizontal bands; less than 1 percent ostracod shell fragments; violently effervescent; very strongly alkaline (pH 9.6).

Type location: Elko County, Nevada; approximately 250 feet north and 1,750 feet west of the southeast corner of section 27, T.30 N., R.62 E.; (40 degrees, 26 minutes, 38 seconds north latitude and 114 degrees, 57 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in late June through October.
Soil temperature: 47 to 53 degrees F.
Depth to lake sediments: 27 to 40 inches.

Electrical conductivity: 4 to 8 millimhos per centimeter in the A and Cn horizons and 16 to 30 millimhos per centimeter below.
Control section:
Clay content--18 to 27 percent, when mixed.
Calcium carbonate equivalent--40 to 60 percent.

A horizon:
Hue--2.5Y or 10YR.
Value--7 or 8 dry, 5 through 7 moist.
Chroma--2 or 3.

Cn horizons:
Hue--2.5Y or 10YR.
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 or 3 moist or dry.
Texture--Silt loam with thin strata of loam or silty clay loam common in some pedons.
Structure--Fine through coarse subangular blocky, moderate to strong medium to very coarse prismatic in subhorizons.
Consistence--Soft or slightly hard dry, friable or very friable moist, slightly sticky or sticky and slightly plastic or plastic wet.
Reaction--Moderately alkaline or strongly alkaline.

2Ckyz horizon:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4.
Texture--Stratified silty clay loam to clay loam.
Clay content--27 to 40 percent.
Structure--Coarse or very coarse, prismatic or subangular blocky.
Consistence--Soft or slightly hard dry.
Secondary carbonates--1 to 2 percent fine lime threads within peds and on faces of peds.
Gypsum--1 to 2 percent fine gypsum crystals as segregate masses within horizon.
Salt--2 to 15 percent salt masses as seams and threads.
Other features--Some pedons have ostracod shell fragments.

Kawich Series

The Kawich series consists of deep and very deep, excessively drained soils that formed in sandy aeolian material. Kawich soils are on dunes. 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: Mixed, mesic Typic Torripsamments

Typical pedon: Kawich fine sand is located in an area of map unit 160. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 5 percent pebbles.

A--0 to 2 inches; light gray (10YR 7/1) fine sand, brown (10YR 5/3) moist; single grain; loose; few very fine roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
C1--2 to 9 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, few medium and coarse roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
C2--9 to 14 inches; light gray (10YR 7/2) loamy fine sand, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, few medium and coarse roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.
C3--14 to 51 inches; light gray (10YR 7/2) fine sand, pale brown (10YR 6/3) moist; single grain; loose; few very fine, fine and medium roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.
C5--51 to 60 inches; very pale brown (10YR 7/3) loamy fine sand, very pale brown (10YR 7/4) moist; massive; soft, very friable, nonsticky and nonplastic; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 10 miles northwest of Wendover, Nevada in the Pilot Creek Valley; 2,100 feet north and 1,000 feet east of the southwest corner of section 34, T.35 N., R.69 E., (40 degrees, 52 minutes, 08 seconds north latitude and 114 degrees, 10 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, but moist in some part for short periods during winter and early spring months and for 10 to 20 days cumulative between July and October due to convective storms.
Soil temperature: 54 to 59 degrees F.
Depth to unconformable lacustrine sediments: 40 to over 120 inches.
Control section:
Texture--Averages fine sand, but may contain strata of sand or loamy fine sand.

A horizon:
Hue--10YR or 7.5YR.
Value--5 through 8 dry, 4 through 7 moist.
Chroma--1 through 4.

C horizon:
Consistence--Hard to loose dry, very friable or loose moist.
Structure--Massive, single grain.
Effervescence--Slightly effervescent to violently effervescent.
Soil reaction--Mildly alkaline to very strongly alkaline.
Other features--Contains significant amounts of pyroclastic material.

Kelk Series

The Kelk series consists of very deep, well drained soils that formed in mixed silty alluvium with a component of loess high in ash. Kelk soils are on inset fans and fan skirts. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is 48 degrees F.

Taxonomic class: Fine-silty, mixed, mesic Durixerollic Camborthids

Typical pedon: Kelk silt loam in an area of map unit 1831. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 5 percent pebbles.

A--0 to 2 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure parting to strong very fine; soft, very friable, slightly sticky and slightly plastic; few to common very fine and fine roots; common very fine interstitial pores; mildly alkaline (pH 7.6); clear smooth boundary.

Bw--2 to 12 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; strong medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and few medium and coarse roots; common very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bqk1--12 to 20 inches; white (10YR 8/2) silt loam, light brownish gray (10YR 6/2) moist; massive; hard, firm and brittle, slightly sticky and slightly plastic; common very fine, fine and few medium and coarse roots; common very fine and few fine interstitial pores; continuous brittle matrix; few fine soft masses of lime; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

Bqk2--20 to 41 inches; white (10YR 8/2) silt loam, light brownish gray (10YR 6/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and coarse roots; few very fine interstitial pores; few fine soft masses of lime; violently effervescent; 25 percent discontinuous weak silica cementation; strongly alkaline (pH 8.6); gradual smooth boundary.

Bqk3--41 to 60 inches; light gray (10YR 7/2) silt loam, light brownish gray (10YR 6/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine interstitial pores; few fine soft masses of lime; 20 percent discontinuous weak silica cementation; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; about 1 1/2 miles northeast of Welcome; approximately 200 feet south and 1,000 feet west of the northeast corner of section 9, T.37 N., R.61 E.; (41 degrees, 06 minutes, 48 seconds north latitude and 115 degrees, 05 minutes, 03 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in the winter and spring, dry from early June through October.
Soil temperature: 47 to 52 degrees F.
Depth to base of Bw horizon: 10 to 35 inches.
Depth to brittle matrix: 12 to 35 inches.
Depth to carbonates: 12 to 35 inches.
Other features: These soils are normally slightly or moderately salt affected below 24 to 48 inches. Bk horizons are below 40 inches in some pedons.
Control section:
Clay content--18 to 27 percent.

A horizon:
Hue--10YR or 2.5Y.
Value--5 through 7 dry, 3 or 4 moist.
Chroma--2 or 3.
Reaction--Neutral to moderately alkaline.
Effervescence--Noneffervescent or slightly effervescent.

Bw horizon:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 or 3.
Structure--Blocky or prismatic or it is massive.
Consistence--Very friable or friable, moist; slightly sticky or sticky and slightly plastic or plastic, wet.
Reaction--Neutral to moderately alkaline. It is strongly alkaline when affected by salts and sodium.
Effervescence--Noneffervescent or slightly effervescent.

Other features--There are 10 to 20 percent weak durinodes near the lower horizon boundary in some pedons.

Bqk horizons:

Value--6 through 8 dry, 3 through 6 moist.
Chroma--2 through 4.
Texture--Dominantly silt loam with thin strata of silty clay loam common in some pedons below 30 inches.
Structure--Moderate fine and medium subangular blocky or massive.
Consistence--Slightly hard to hard dry, very friable to firm and brittle, moist; slightly sticky or sticky and slightly plastic to plastic, wet.
Reaction--Neutral through strongly alkaline, increasing with depth.
Effervescence--Slightly effervescent through violently effervescent in the Bqk horizon.
Cementation--Subhorizons without continuously brittle matrix contain 30 to 90 percent durinodes or are 20 to 50 percent discontinuous weakly silica cemented.
Other features--Some pedons lack relict mottles in the lower part of the Bqk horizons. Some pedons have lenses of 5 to 15 percent pebbles in some Bqk subhorizon or extremely gravelly substrata below 42 inches. Some pedons have silty clay loam 2Bk horizons below 39 inches.

Kolda Series

The Kolda series consists of very deep very poorly drained, soils that formed in mixed alluvium over lake sediments. Kolda soils are on flood plains and lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Typic Endoaquolls

Typical pedon: Kolda silt loam in an area of map unit 880. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; weak fine subangular blocky structure parting to moderate fine granular structure; slightly hard, very friable, sticky and slightly plastic; many very fine and fine and few medium roots; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
A2--4 to 11 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
2A3--11 to 18 inches; dark gray (10YR 4/1) silty clay, black (10YR 2/1) moist; moderate medium angular blocky structure; slightly hard, friable, sticky and plastic; few very fine roots; many very fine tubular and few fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt irregular boundary.
2Ckg1--18 to 22 inches; pale olive (5Y 6/3) silty clay, very dark gray (5Y 3/1) moist; many very fine and medium strong brown (7.5YR 4/6) iron mottles; massive; hard, friable, sticky and very plastic; few very fine roots; many very fine and fine tubular pores; common filaments and fine soft lime masses; tubular pores are lime coated; violently effervescent; strongly alkaline (pH 8.6); clear irregular boundary.
2Ckg2--22 to 31 inches; pale olive (5Y 6/3) silty clay, olive (5Y 5/3) moist; common very fine strong brown (7.5YR 4/6) iron mottles; massive; hard, friable, sticky and very plastic; few very fine roots; common very fine tubular pores; organic coats in some pores as linings; 10 percent very hard and very firm 1/8 inch lime nodules with common lime filaments; tubular pores are lime coated; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
2Ckg3--31 to 50 inches; white (2.5Y 8/0) silty clay, light gray (2.5Y 7/2) moist; common very fine strong brown (7.5YR 4/6) iron mottles; massive; hard, friable, very sticky and plastic; few very fine roots; common very fine tubular pores; organic coats in some pores as linings; 10 percent very hard and very firm 1/8 inch lime nodules; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.
2Ckg4--50 to 62 inches; light gray (5Y 7/2) silty clay loam, gray (5Y 6/1) moist; massive; hard, very friable, slightly sticky and slightly plastic; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 5 1/2 miles northeast of Odgers Ranch; about 1,200 feet north and 1,000 feet west of the southeast corner of section 4, T.28 N., R.62 E.; (40 degrees, 19 minutes, 47 seconds north latitude and 114 degrees, 58 minutes, 53 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated below the soil surface due to high water table in February to July; dry in the upper part of the profile from August through September.

Soil temperature: 47 to 52 degrees F.
Mollic epipedon thickness: 10 to 23 inches.
Control section:
Clay content--Averages 35 to 50 percent.
Texture--Silt loam in the upper part, and clay or silty clay in the lower part.
Other features--Some pedons have silty clay loam in subhorizons below 40 inches.

A horizons:
Value--3 through 5 dry, 2 or 3 moist.
Chroma--1 through 3.
Reaction--Moderately alkaline to very strongly alkaline.

2Ckg horizon:
Hue--2.5Y or 5Y
Value--6 through 8 dry, 3 through 7 moist.
Chroma--0 through 3.
Structure--Moderate very fine angular blocky to medium prismatic, or is massive.
Reaction--Strongly alkaline or very strongly alkaline.
Other features--Some pedons have up to 10 percent lime nodules. Lime filaments are common in some pedons.

Krenka Series

The Krenka series consists of very deep, well drained soils that formed in mixed alluvium. Krenka soils are on fan piedmont remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Pachic Argixerolls

Typical pedon: Krenka loam, in an area of map unit 1690. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 20 percent pebbles and 5 percent cobbles.

A1--0 to 2 inches; brown (10YR 5/3) loam, black (10YR 2/1) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; few very fine, fine and medium roots; few very fine, fine and medium interstitial pores; 10 percent pebbles; neutral (pH 6.6); clear wavy boundary.
A2--2 to 17 inches; brown (10YR 5/3) loam, black (10YR 2/1) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine, medium and few coarse interstitial and tubular pores; 10 percent pebbles; neutral (pH 6.6); gradual smooth boundary.
Bt1--17 to 22 inches; brown (10YR 5/3) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; few thin clay films on faces of peds and lining pores; many very fine and medium interstitial and tubular pores; 25 percent pebbles; neutral (pH 6.6); clear smooth boundary.
Bt2--22 to 31 inches; grayish brown (10YR 5/2) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium pores; common moderately thick clay films on faces of peds and lining pores; 30 percent pebbles; neutral (pH 6.6); clear smooth boundary.
2Bt3--31 to 60 inches; yellowish brown (10YR 5/4) extremely cobbly sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and medium roots; many very fine and common fine interstitial and tubular pores; common thin clay films on faces of peds and lining pores; 40 percent pebbles, 20 percent cobbles, and 10 percent stones; slightly acid (pH 6.4).

Type location: Elko County, Nevada; about 18.25 miles east of Halleck; approximately 1,500 feet south and 2,000 feet west of the northeast corner of section 3, T.34 N., R.60 E.; (40 degrees, 51 minutes, 38 seconds north latitude and 115 degrees, 11 minutes, 09 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter and spring, dry in late summer and fall.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon thickness: 20 to 35 inches.
Depth to argillic: 15 to 20 inches.
Depth to base of argillic: 45 to more than 60 inches.
Control section:
Clay content--20 to 25 percent clay.
Rock fragments--Averages 35 to 50 percent.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3 dry, 1 or 2 moist.

Bt1 and Bt2 horizons:
Chroma--2 or 3.

Texture--Sandy clay loam.
Clay content--20 to 25 percent.
Rock fragments--25 to 40 pebbles, 0 to 5 percent cobbles.
Consistence--Soft or slightly hard.

2Bt3 horizons:
Value--5 through 8 dry, 3 through 5 moist.
Texture--Very cobbly or extremely cobbly sandy clay loam.
Clay content--20 to 25 percent.
Rock fragments--35 to 40 percent pebbles, 10 to 20 percent cobbles, 0 to 10 percent stones.
Consistence--Soft or slightly hard.
Reaction--Slightly acid or neutral.

Kunzler Series

The Kunzler series consists of very deep, well drained, moderately slowly permeable soils that formed in alluvium from limestone. Kunzler soils are on beach plains and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Durixerollic Calciorthids

Typical pedon: Kunzler loam located in an area of map unit 540. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 5 percent pebbles.

A1--0 to 3 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate very thick platy structure parting to weak very thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine vesicular pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
A2--3 to 16 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft,very friable, slightly sticky and slightly plastic; common very fine and few fine, medium and coarse roots; common very fine interstitial and tubular pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
Bqk1--16 to 25 inches; very pale brown (10YR 7/3) loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine, medium roots; few very fine tubular pores; 20 percent hard and firm durinodes; 5 percent pebbles; thin lime and silica coats on undersides of pebbles; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
Bqk2--25 to 48 inches; very pale brown (10YR 7/3) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; 15 percent discontinuous silica and lime cementation; 10 percent pebbles; thick lime and silica coats on undersides of pebbles; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
Bqk3--48 to 60 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; 10 percent pebbles; thin lime and silica coats on undersides of pebbles; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Type location: Elko County, Nevada; approximately 28 miles southeast of Wells; located about 1,200 feet north and 1,900 feet east of the southwest corner of section 17, T.33 N., R.64 E.; (40 degrees, 44 minutes, 05 seconds north latitude and 114 degrees, 46 minutes, 08 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, but is moist in some part 25 to 35 percent of the time.
Soil temperature: 50 to 53 degrees F. It is dry in all parts for 45 to 60 consecutive days following the summer solstice.
Depth to the calcic horizon: 10 to 35 inches.
Control section:
Clay content--10 to 18 percent clay.

A horizon:
Value--5 through 7 dry and 3 through 5 moist.
Chroma--2 through 4, dry or moist.
Effervescence--Slightly effervescent to strongly effervescent.
Reaction--Moderately alkaline or strongly alkaline.

Bqk horizon:
Hue--7.5YR or 10YR.
Value--6 through 8 dry and 4 through 6 moist.
Chroma--2 through 4.
Texture--Loam, fine sandy loam, or sandy loam.
Rock fragments--0 to 15 percent pebbles.
Cementation--Bqk contains 20 percent or more durinodes in some part of the horizon above 40 inches. About half of the durinodes are strongly cemented.

Exchangeable sodium percentage--Increases with depth and is greater than 40 percent in some part of the horizon.
Reaction--Moderately alkaline to very strongly alkaline.
Structure--Subangular blocky, platy or massive.
Consistence--Soft to slightly hard, very friable to firm, nonsticky to slightly sticky and nonplastic to slightly plastic.
Other features--Some pedons have more than 15 percent coarse fragments occur below 40 inches. Some pedons may be continuously weakly cemented in the B horizon.

Kyler Series

The Kyler series consists of shallow and very shallow, well drained soils formed in residuum from limestone. Kyler soils are on hills, mountains, and rock pediment remnants. Slopes are 4 to 50 percent. The mean annual precipitation is about 12 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 loam in an area of map unit 1540. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles and 5 percent cobbles.

A--0 to 3 inches; light gray (10YR 7/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
Bk--3 to 7 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; strong medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium and many very fine and fine roots; many very fine interstitial, and many very fine and few medium tubular pores; few 2 to 5 millimeter thick lime pendants on undersides of rock fragments; 50 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
R--7 inches; limestone; many very fine and fine roots matted on bedrock surface.

Type location: Elko County, Nevada; approximately 32 miles southwest of Wendover in the Ferber Hills; 1,000 feet south and 1,200 feet west of the northeast corner of section 30, T.28 N., R.70 E.; (40 degrees, 16 minutes, 24 seconds north latitude and 114 degrees, 06 minutes, 40 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.
Soil temperature: 53 to 59 degrees F.
Depth to bedrock: 6 to 14 inches.
Reaction: Moderately alkaline or strongly alkaline.
Effervescence: Strongly effervescent to violently effervescent.
Carbonates: 40 to 60 percent calcium carbonate equivalent.
Control section:
Clay content--7 to 18 percent.
Rock fragments--35 to 60 percent.

A horizon:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 or 3.

Bk horizon:
Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 through 4 moist.
Texture (less than 2 millimeter fraction)--Loam, including strata of fine sandy loam, very fine sandy loam or silt loam.
Structure--Massive or subangular blocky.
Consistence--Soft or slightly hard dry, slightly sticky or sticky, slightly plastic or plastic.
Rock fragments--Average 35 to 60 percent. Subhorizons have up to 70 percent rock fragments in some pedons.
Other features--Some pedons have thin lime coats on rock fragments.

Kzin Series

The Kzin series consists of very shallow and shallow, well drained soils that formed in residuum from clastic sedimentary rocks. Kzin soils are on hills and rock pediment remnants. Slopes are 8 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 45 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic, shallow Xeric Torriorthents

Typical pedon: Kzin very gravelly loam, 8 to 30 percent slopes, is located in an area of map unit 330. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 80 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) very gravelly loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; common very fine roots; many very fine and fine interstitial pores; thin lime coats and 1 millimeter thick lime pendants on pebbles; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 7.9); abrupt wavy boundary.

Bk--3 to 9 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine, and few medium roots; common very fine interstitial pores; few thin lime coats and 1 to 3 millimeter thick lime pendants on pebbles; 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Cr--9 to 20 inches; soft, tuffaceous, fractured puddingstone conglomerate with about 60 percent pebbles in matrix; few very fine and fine roots and some lime coats in fractures.

Type location: Elko County, Nevada; approximately 2.5 miles south of Moor Summit in an unsectionized area, about 1,900 feet south and 200 feet west of the projected northeast corner of section 22, T.37 N., R.63 E.; (41 degrees, 04 minutes, 38 seconds north latitude and 114 degrees, 49 minutes, 57 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry mid-June through late October.
Soil temperature: 47 to 52 degrees F.
Depth to paralithic contact: 4 to 12 inches.
Control section:
Clay content--15 to 25 percent.
Rock fragments--35 to 50 percent, mainly pebbles.
Reaction--Moderately alkaline or strongly alkaline.
Calcium carbonate equivalent--15 to 30 percent.
Other features--Eroded phases are recognized.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.

Bk horizon:
Value--5 through 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Structure--Subangular blocky or is massive.
Texture--Loam or sandy loam.
Consistence--Slightly sticky or nonsticky and nonplastic or slightly plastic wet.

Linoyer Series

The Linoyer series consists of very deep, well drained, moderately permeable soils that formed in mixed alluvium and lacustrine sediments. Linoyer soils are on inset fans, fan skirts, and alluvial flats. Slopes are 0 to 4 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Xeric Torriorthents

Typical pedon: Linoyer silt loam located in an area of map unit 101. (Colors are for dry soil unless otherwise noted.)

A1--0 to 3 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; strong thick platy parting to strong thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine vesicular and interstitial pores; strongly effervescent; moderately alkaline (pH 8.3); abrupt smooth boundary.

A2--3 to 9 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; common very fine, fine interstitial, and tubular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1--9 to 24 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; common very fine, fine interstitial, and tubular pores; 1/4 to 1 inch thick discontinuous horizontal lenses of finally stratified lake sediments; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

C2--24 to 33 inches; pale brown (10YR 6/3) very fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common

very fine and fine interstitial pores; few fine soft masses of lime; few 2 to 3 inch diameter pockets of volcanic ash; strongly effervescent; moderately alkaline (pH 8.3); clear smooth boundary.

C3--33 to 40 inches; light yellowish brown (10YR 6/4) silt 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 interstitial pores; strongly effervescent; moderately alkaline (pH 8.1); clear wavy boundary.

C4--40 to 60 inches; light yellowish brown (10YR 6/4) very fine sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine interstitial and tubular pores; strongly effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 30 miles southwest of Wendover; located about 800 feet south and 1,200 feet west of the northeast corner of section 33, T.29 N., R.68 E.; (40 degrees, 20 minutes, 46 seconds north latitude and 114 degrees, 17 minutes, 58 seconds west longitude.)

Range in characteristics:

Soil moisture: Continually moist for 60 to 70 days out of the 120 days after the winter solstice and are dry for 70 to 80 consecutive days in the 3 months after June 21.
Soil temperature: 47 to 54 degrees F.

A horizon:
Hue--10YR or 7.5YR.
Value--5 to 7 dry, 4 to 6 moist.
Chroma--2 to 4.
Reaction--Moderately alkaline to strongly alkaline.

C horizon:
Hue--10YR, 7.5YR, or 5YR.
Value--6 or 7 dry, 4 to 6 moist.
Chroma--3 to 6.
Reaction--Moderately alkaline to strongly alkaline.
Texture--Very fine sandy loam or silt loam which contains 5 to 15 percent sand coarser than very fine sand.
Calcium carbonate equivalent--10 to 40 percent.
Structure--Massive or platy.
Consistence--Soft or slightly hard, very friable to friable and slightly plastic to plastic.

Logan Series

The Logan series consists of very deep, poorly drained, slowly permeable soils that formed in mixed alluvium and reworked lacustrine sediments. Logan soils are on flood plains and channels. Slopes are 0 to 2 percent. The mean annual precipitation is about 15 inches, and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine-silty, mesic Typic Calciaquolls

Typical pedon: Logan silt loam located in an area of map unit 1660. (Colors are for dry soil unless otherwise noted.)

A1--0 to 5 inches; very dark gray (10YR 3/1) silt loam, black (10YR 2/1) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine tubular pores; common ostracod shell fragments throughout profile; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

A2--5 to 10 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; moderate thin platy structure; slightly hard, very friable, sticky and slightly plastic; many very fine, fine and common medium roots; many very fine, fine and few medium tubular pores; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bkg1--10 to 18 inches; light gray (5Y 7/1) silty clay loam, light gray (5Y 6/1) moist; weak medium prismatic structure parting to strong fine angular blocky; slightly hard, friable, sticky and plastic; common very fine, fine and medium roots; many very fine, fine and few medium tubular pores; common dark gray (10YR 4/1) organic stains on faces of peds and lining pores; common fine and medium vertical nodules of lime; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Bkg2--18 to 40 inches; light gray (5Y 7/1) silty clay loam, light gray (5Y 6/1) moist; moderate medium prismatic structure parting to strong fine angular blocky; hard, friable, sticky and plastic; common very fine, fine and medium roots; many very fine, fine and few medium tubular pores; dark gray (2.5Y 4/1) organic stains on faces of peds and lining pores; common fine and medium vertical soft masses of lime; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Cg--40 to 60 inches; light gray (5Y 7/1) silty clay loam, light gray (5Y 6/1) moist; strong coarse prismatic structure

parting to strong medium angular blocky; hard, firm, sticky and plastic; common very fine, fine and medium roots; many very fine, fine and few medium tubular pores; few fine filaments of lime; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 12 miles northwest of Odgers Ranch in Ruby Valley; 1,000 feet north and 1,800 feet west of the southeast corner of section 7, T.30 N., R.60 E.; (40 degrees, 29 minutes, 26 seconds north latitude and 115 degrees, 14 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated from the soil surface to 30 inches. Shallow water table phases have the water table within 18 inches of the surface for most of the year.
Soil temperature: 47 to 52 degrees F.
Calcium carbonate equivalent: 15 to 40 percent in the particle-size control section.
Electrical conductivity: 0 to 4 throughout.
Mollic epipedon thickness: 10 to 25 inches.
Depth to calcic horizon: 10 to 25 inches.
Reaction: Moderately alkaline or strongly alkaline.

A horizon:
Hue--10YR or 2.5Y.
Value--3 or 4 dry, 2 or 3 moist.
Chroma--1 or 2.
Organic matter content--6 to 10 percent but ranges from 4 to 20 percent.
Calcium carbonate equivalent--3 to 25 percent.

Bkg horizon:
Hue--2.5Y, 5Y, 5GY or neutral.
Value--5 to 8 dry, 4 to 7 moist.
Chroma--1 or less.
Clay content--27 to 35 percent.
Structure--Lacking to weak subangular blocky or is prismatic and is weakly cemented in places.
Calcium carbonate equivalent--15 to 60 percent.

Cg horizon:
Hue--2.5Y, 5Y or neutral.
Value--5 to 8 dry, 4 to 7 moist.
Chroma--Less than 2 where the soil is not mottled.

Lomoine Series

The Lomoine series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from granitic rocks. Lomoine soils are on hills. Slopes are 8 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 Torriothents

Typical pedon: Lomoine gravelly sandy loam located in an area of map unit 440. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with approximately 15 percent pebbles.

A1--0 to 3 inches; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure parting to moderate medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many very fine and few fine vesicular and few very fine tubular pores; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
A2--3 to 9 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine and medium roots; common very fine interstitial pores; few thin lime coats on pebbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
C--9 to 11 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine interstitial pores; few thin lime coats on pebbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
R--11 inches; slightly weathered granitic bedrock.

Type location: Elko County, Nevada; approximately 1 1/2 miles east of Silver Zone Pass; 2,050 feet north and 2,000 feet west of the southeast corner of section 16, T.35 N., R.68 E.; (40 degrees, 54 minutes, 43 seconds north latitude and 114 degrees, 17 minutes, 29 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.
Soil temperature: 53 to 59 degrees F.
Depth to bedrock: 4 to 14 inches.

Carbonates: Calcareous, usually slightly effervescent to strongly effervescent in all parts.
Calcium carbonate equivalent: Less than 5 percent.
Control section:
Clay content--8 to 15 percent.
Rock fragments--35 to 60 percent with a high percentage of 2 to 5 millimeter pebbles.
Reaction--Mildly alkaline to moderately alkaline.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.

C horizon:
Value--5 through 7 dry, 3 or 4 moist.
Chroma--2 through 4.
Texture--Coarse sandy loam or sandy loam.
Structure--Massive or subangular blocky.
Rock fragments--35 to 60 percent rock fragments with numerous fine (less than 5 millimeters) pebbles.
Other features--Some pedons have thin lime coats on pebbles.

Loray Series

The Loray series consists of very deep, somewhat excessively drained soils that formed in mixed alluvium with a component of loess. Loray soils are on beach plains and fan skirts. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Calciorthids

Typical pedon: Loray gravelly sandy loam, located in an area of map unit 116. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 40 percent fine gravels.

A--0 to 4 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; many very fine vesicular pores; few thin lime pendants on the undersides of pebbles; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.
Bk--4 to 12 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine interstitial pores; common thin lime pendants on the undersides of pebbles; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
2Bk2--12 to 20 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine interstitial pores; common thin lime pendants on the undersides of rock fragments; 60 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
2Bk3--20 to 34 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine interstitial pores; common thin lime pendants on the undersides of rock fragments; 65 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.
2Bk4--34 to 47 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine interstitial pores; 20 percent discontinuous weak lime cementation; common thin lime pendants on the undersides of rock fragments; 55 percent pebbles and 15 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.
2Ck--47 to 60 inches; pale brown (10YR 6/3) stratified extremely gravelly loamy coarse sand and loamy fine sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few thin lime pendants on the undersides of rock fragments; 60 percent pebbles; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 14 miles northwest of Wendover; about 3,000 feet south and 200 feet east of the northwest corner of section 17, T.35 N., R.69 E.; (40 degrees, 54 minutes, 45 seconds north latitude and 114 degrees, 12 minutes, 27 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry late May through early November.
Soil temperature: 53 to 59 degrees F.
Depth to calcic horizon: 4 to 18 inches.
Reaction: Moderately alkaline to strongly alkaline
Calcium carbonate equivalent: 5 to 20 percent.
Soft powdery lime: 5 to 20 percent lime filaments and masses.

Control section:
Clay content--Averages 0 to 8 percent.
Rock fragments--Averages 60 to 80 percent mainly pebbles with 0 to 10 percent cobbles.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

Bk horizon:
Value--6 through 8 dry, 4 through 6 moist.
Texture--Loamy fine sand, sandy loam, fine sandy loam or loam.
Clay content--5 to 20 percent.
Rock fragments--5 to 35 percent, mainly pebbles.

2Bk horizons:
Value--6 through 8 dry, 4 through 6 moist.
Chroma--2 or 3.
Textures--Stratified loamy fine sand to coarse sand.
Clay content--0 to 8 percent.
Rock fragments--60 to 80 percent, mainly pebbles.
Structure--Massive or single grain.
Lime cementation--Up to 20 percent weak or strong discontinuous lime cementation is common in any subhorizon.

2Ck horizon:
Value--6 through 8 dry, 4 through 6 moist.
Chroma--2 or 3.
Structure--Massive or single grain.
Consistence--Slightly hard or loose.
Other features--5 to 10 percent CaCO3.

Luning Series

The Luning series consists of very deep, somewhat excessively drained soils that formed in mixed alluvium. Luning soils are on beach plains. Slopes are 2 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 located in an area of map unit 1590. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 10 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) gravelly loamy sand, grayish brown (10YR 5/2) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine interstitial pores; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1--3 to 20 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine and few medium and coarse roots; few very fine interstitial pores; few thin lime coats on pebbles; 5 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

C2--20 to 30 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic, common very fine, fine and few medium and coarse roots; few very fine interstitial pores; few thin lime coats on pebbles; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C3--30 to 39 inches; light gray (10YR 7/2) gravelly coarse sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and medium roots; common very fine interstitial pores; few thin lime coats on pebbles; 25 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

C4--39 to 60 inches; light gray (10YR 7/2) very gravelly coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine, few fine,and medium roots; common very fine interstitial pores; few thin lime coats on pebbles; 45 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

Type location: Elko County, Nevada; approximately 8 miles southwest of Wendover, Nevada; about 1,200 feet north and 1,200 feet east of the southwest corner of section 14, T.32 N., R.69 E.; (40 degrees, 38 minutes, 34 seconds north latitude and 114 degrees, 08 minutes, 47 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and spring and for 10 to 20 days cumulative between July and October due to convection storms. Dry in lower moisture control section.
Soil temperature: 53 to 59 degrees F.
Reaction: Mildly alkaline to strongly alkaline.
Control section:
Clay content--2 to 8 percent.
Rock fragments--10 to 30 (dominantly 2 to 5 millimeters) strata containing greater than 35 percent rock fragments.

Other features--Thin strata (1/2 to 2 inches) of sandy loam in some pedons, but are discontinuous and/or thin.
Carbonates--Noneffervescent to violently effervescent.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

C horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Texture--Loamy sand, sand, or coarse sand with thin strata of sandy loam. Averages loamy sand or sand.
Carbonates--Slightly effervescent to violently effervescent.
Structure--Massive, subangular blocky or is single grain.
Consistence--Loose or soft to slightly hard dry, loose or very friable to friable, nonsticky to slightly sticky and nonplastic to slightly plastic.

Lykal Series

The Lykal series consists of very deep, somewhat poorly drained soils that formed in mixed alluvium. Lykal soils are on stream terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Coarse-silty, carbonatic, mesic Aeric Fluvaquents

Typical pedon: Lykal silt loam, in an area of map unit 1760. (Colors are for dry soil unless otherwise noted.)

A1--0 to 5 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure parting to fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, common fine, medium and few coarse roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
A2--5 to 12 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak very thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
C1--12 to 18 inches; light brownish gray (10YR 6/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; many very fine, few fine and medium interstitial and tubular pores; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.
C2--18 to 41 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine, fine and medium roots; many very fine, few fine, medium and coarse interstitial and tubular pores; few medium distinct yellowish brown (10YR 5/6) iron mottles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
Ab1--41 to 46 inches; dark grayish brown (2.5Y 4/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine, few fine, medium and coarse tubular pores; few fine distinct yellowish brown (10YR 5/6) iron mottles; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
Ab2--46 to 51 inches; grayish brown (2.5Y 5/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse tubular pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
2C1--51 to 58 inches; white (2.5Y 8/2) gravelly clay loam, light gray (2.5Y 7/2) moist; massive; slightly hard, friable, sticky and plastic; few very fine, fine and medium interstitial and tubular pores; common fine distinct reddish yellow (7.5YR 6/6) iron mottles; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
2C2--58 to 60 inches; white (10YR 8/1) gravelly sandy loam, pale brown (10YR 6/3) moist; massive; hard, friable, slightly sticky and nonplastic; common very fine and fine interstitial and few fine tubular pores; common fine distinct reddish yellow (7.5YR 6/6) iron mottles; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Elko County, Nevada; about 6 miles south of the Ruby Valley Forest Service Station; approximately 1,100 feet north and 3,200 feet west of the southeast corner of section 18, T.32 N., R.60 E.; (40 degrees, 39 minutes, 00 seconds north latitude and 115 degrees, 14 minutes, 51 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated and aquic conditions below at depths of 18 to 36 inches in mid spring, and then drops to below 60 inches in summer.

Soil temperature: 47 to 52 degrees F.
Depth to redoximorphic concentrations: 15 to 20 inches.
Control section:
Clay content--12 to 18 percent.

A horizon:
Calcium carbonate equivalent--40 to 50 percent.

C horizons:
Value--6 or 7 dry, 3 through 6 moist. Some subhorizon within 30 inches of the surface has value of 5 or less moist.
Structure--Medium or coarse subangular blocky.
Reaction--Moderately alkaline or strongly alkaline.
Other features--60 to 70 percent calcium carbonate equivalent.

Ab horizons:
Value--4 or 5 dry, 3 or 4 moist.
Reaction--Mildly alkaline or moderately alkaline.
Texture--Silt loam or loam.
Clay content--12 to 18 percent.
Effervescence--Strongly effervescent or violently effervescent.

2C horizons:
Hue--2.5Y or 10YR.
Value--6 or 7 moist.
Chroma--1 or 2 dry, 2 or 3 moist.
Reaction--Mildly alkaline or moderately alkaline.
Texture--Stratified gravelly clay loam to gravelly sandy loam.
Clay content--Averages 20 to 27 percent.
Rock fragments--20 to 30 percent pebbles,
Other features--Strongly effervescent or violently effervescent.
Calcium carbonates equivalent--30 to 40 percent.

Mazuma Series

The Mazuma series consists of very deep, well drained soils that formed in mixed alluvium and lacustrine sediments. Mazuma soils are on lagoons, beach plains, lake plains, and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Mazuma silt loam in an area of map unit 800. (Colors are for dry soil unless otherwise noted.)

A1--0 to 5 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; strong very coarse platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; many very fine and fine vesicular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
A2--5 to 15 inches; very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/4) moist; strong fine platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; few very fine vesicular pores; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.
Bk--15 to 24 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; strong fine platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; few very fine vesicular pores; few fine filaments of lime; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.
C1--24 to 32 inches; light gray (10YR 7/2) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine vesicular pores; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
C2--32 to 60 inches; light gray (10YR 7/2) fine sandy loam, light brownish gray (10YR 6/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; violently effervescent; moderately alkaline (pH 8.0).

Type location: Elko County, Nevada; approximately 2 miles north of Currie, Nevada; located in an unsectionized area 1,600 feet south and 1,200 feet east of the northeast corner of section 24, T.29 N., R.64 E.; (40 degrees, 22 minutes, 47 seconds north latitude and 114 degrees, 41 minutes, 21 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry from summer to mid-fall.
Soil temperature: 53 to 57 degrees F.
Electrical conductivity: Greater than 2 millimhos.
Exchangeable sodium percent: 13 to 45.
Control section:
Clay content--5 to 15 percent.
Rock fragments--A few strata have up to 25 percent pebbles.

A horizons:
Hue--10YR or 2.5Y.
Value--5 through 7 dry; 4 through 6 moist.

Chroma--2 through 4.
Reaction--Moderately alkaline to very strongly alkaline.

Bk horizons:
Hue--10YR or 2.5Y.
Value--5 through 7 dry; 4 through 6 moist.
Chroma--2 through 4.
Structure--Subangular blocky, platy or massive.
Other features--Less than 3 percent calcium carbonate equivalent.
Consistence--Slightly hard or hard, dry.

C horizons:
Hue--10YR or 2.5Y
Value--5 through 7 dry; 4 through 6 moist.
Chroma--2 through 4.
Texture--Stratified sandy loam, fine sandy loam, very fine sandy loam and silt loam with some pedons containing thin strata of clay loam and strata up to 12 inches thick of coarse sand, very coarse sand, fine sand or loamy sand.
Reaction--Moderately alkaline to very strongly alkaline.
Segregated lime--Few fine or medium calcium carbonate concretions may be in any horizon.
Unconformable material--Lacustrine silts and clays occur below 40 inches in some pedons.
Other features--Salt crystals and relict mottles are in some pedons in the lower C horizon.
Structure--Subangular blocky, platy or is single grain or massive.
Consistence--Soft or slightly hard, dry or is loose.

McIvey Series

The McIvey series consists of very deep, well drained soils that formed in colluvium from granite. McIvey soils are on fan piedmont remnants, hills, and mountains. Slopes are 2 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, frigid Typic Argixerolls

Typical pedon: McIvey very cobbly loam in an area of map unit 1770. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles and 15 percent cobbles.

A1--0 to 2 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate thick platy structure parting to strong very thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; common very fine interstitial pores; 20 percent pebbles and 15 percent cobbles; neutral (pH 6.6); clear smooth boundary.

A2--2 to 7 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine to coarse roots; few very fine interstitial and tubular pores; 25 percent pebbles and 20 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

AB--7 to 12 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; strong medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine to coarse roots; common very fine and fine interstitial and tubular pores; 30 percent pebbles and 5 percent cobbles; neutral (pH 6.8); clear smooth boundary.

2Bt1--12 to 18 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong medium coarse subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; many very fine and few fine interstitial and tubular pores; many moderately thick clay films on faces of peds and lining pores; 30 percent pebbles and 5 percent cobbles; neutral (pH 6.8); clear smooth boundary.

2Bt2--18 to 29 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; strong medium subangular blocky structure; hard, firm, very sticky and very plastic; common very fine and few fine roots; common very fine and few fine tubular pores; 45 percent pebbles and 10 percent cobbles; many moderately thick clay films on faces of peds and lining pores; neutral (pH 6.8); clear smooth boundary.

2Bt3--29 to 38 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine and medium roots; many very fine tubular pores; 35 percent pebbles and 10 percent cobbles; many moderately thick clay films on faces of peds and lining pores; neutral (pH 6.8); clear wavy boundary.

2Bt4--38 to 60 inches; yellowish brown (10YR 5/4) extremely cobbly clay, dark yellowish brown (10YR 4/6) moist; massive; hard, firm, sticky and plastic; few very fine and fine roots; common very fine interstitial and tubular pores; 40 percent pebbles, 25 percent cobbles, and 10 percent stones; many moderately thick clay films on faces of peds and lining pores; neutral (pH 6.8).

Type location: Elko County, Nevada; about 3 miles south of Secret Pass; approximately 900 feet north and 2,100 feet east of the southwest corner of section 3, T.33 N., R.60 E.; (40 degrees, 45 minutes, 55 seconds north latitude and 115 degrees, 11 minutes, 24 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in the winter and spring, dry mid-July through October.
Soil temperature: 42 to 47 degrees F.
Mollic epipedon thickness: 12 to 20 inches, does not include the argillic horizon.
Control section:
Clay content--35 to 50 percent.
Rock fragments--Averages 35 to 60 percent, mainly pebbles and cobbles.
Other features--Some pedons have C horizons below a depth of 50 inches.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 through 3.

Bt1 horizon:
Hue--7.5YR or 10YR.
Value--3 or 4 moist.
Chroma--3 or 4.
Texture--Clay loam.
Consistence--Hard or very hard, friable to very firm moist.
Clay content--30 to 40 percent.
Rock fragments--15 to 40 percent pebbles, 0 to 10 percent cobbles and stones.
Reaction--Slightly acid to mildly alkaline.
Other features--Moist and dry colors of this horizon do not meet the requirements of a mollic epipedon.

Lower Bt horizons:
Hue--7.5YR or 10YR.
Value--5 or 6 dry, 4 or 5 moist.
Chroma--3 through 6.
Texture--Clay with clay loam common in some subhorizons below 40 inches.
Clay content--Commonly 40 to 50 percent, but some pedons have lower subhorizons with 30 to 40 percent.
Rock fragments--35 to 50 percent pebbles, 5 to 25 percent cobbles, 0 to 15 percent stones.
Structure--Subangular blocky, angular blocky or prismatic throughout the profile but is commonly massive in the lower subhorizons.
Consistence--Hard or very hard, firm or very firm moist.
Reaction--Slightly acid through mildly alkaline.

Mizpah Series

The Mizpah series consists of moderately deep, well drained soils that formed in mixed alluvium over residuum from siltstone. Mizpah soils are on rock pediments. Slopes are 2 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Typic Paleargids

Typical pedon: Mizpah sandy loam, in an area of map unit 650. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with approximately 55 percent pebbles.

A1--0 to 3 inches; light brownish gray (10YR 6/2) sandy loam, brown (10YR 4/3) moist; moderate thick platy structure parting to weak thin platy; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine interstitial and vesicular pores; 10 percent pebbles; violently effervescent; mildly alkaline (pH 8.2); clear smooth boundary.
A2--3 to 6 inches; pale brown (10YR 6/3) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine and medium roots; many very fine interstitial pores; 10 percent pebbles; violently effervescent; mildly alkaline (pH 8.2); clear smooth boundary.
Bqk--6 to 9 inches; pink (7.5YR 7/4) sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine and medium roots; many very fine interstitial pores; 15 percent hard, firm 10 to 20 millimeter diameter durinodes; few fine filaments of lime; violently effervescent; mildly alkaline (pH 8.3); abrupt smooth boundary.
2Btqk--9 to 14 inches; pinkish white (7.5YR 8/2) and light brown (7.5YR 6/4) silty clay, light brown (7.5YR 6/4) moist; weak coarse prismatic structure; slightly hard, friable, sticky and very plastic; common very fine and few fine and medium roots; many very fine interstitial and tubular pores; few moderately thick clay films in pores; few thin lime coats on faces of peds; 15 percent hard, firm 5 to 10 millimeter diameter durinodes; violently effervescent; strongly alkaline (pH 8.5); clear wavy boundary.

2Btk--14 to 32 inches; light reddish brown (5YR 6/4) silty clay, reddish brown (5YR 4/4) moist; strong coarse prismatic structure; hard, firm, sticky and very plastic; common very fine roots; many very fine interstitial and tubular pores; common moderately thick clay films in pores and on faces of peds; common thick lime coats on faces of peds; strongly alkaline (pH 8.6); gradual wavy boundary.
Cr--32 to 40 inches; reddish brown (5YR 5/3) fractured weathered siltstone, reddish brown (5YR 4/4) moist; common medium soft lime masses and fine lime seams in fractures in the upper part.

Type location: Elko County, Nevada; approximately 3 miles east of Currie about 2,050 feet north and 350 feet west of the southeast corner of section 36, T.28 N., R.64 E.; (40 degrees, 15 minutes, 30 seconds north latitude and 114 degree, 41 minutes, 44 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist for short periods in the winter and spring from summer to mid fall.
Soil temperature: 47 to 52 degree F.
Depth to paralithic: 20 to 40 inches.

A horizons:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3 dry, 3 or 4 moist.

Bt horizons:
Hue--7.5YR or 5YR.
Value--5 through 8 dry, 4 through 6 moist.
Chroma--2 through 4 dry, 3 or 4 moist.
Clay content--40 to 50 percent.
Rock fragments--0 to 10 percent pebbles.
Structure--Prismatic or angular blocky.
Consistence--Slightly hard to hard dry, friable or firm moist.
Reaction--Moderately alkaline to strongly alkaline.
Other features--10 to 15 percent 5 to 20 millimeter diameter durinodes present in some subhorizon. Common lime coats on faces of peds, usually in lower subhorizons.

Muiral Series

The Muiral consists of moderately deep, well drained soils that formed in residuum and colluvium from calcareous siltstone, limestone and dolomite. Muiral soils are found on mountain sideslopes. Slopes are 30 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 38 degrees F.

Taxonomic class: Loamy-skeletal, mixed Typic Cryochrepts

Typical pedon: Muiral gravelly loam, in an area of map unit 520. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 5 percent pebbles and about 15 percent Englemann spruce branches.

Oi--3 to 2 inches; slightly decomposed Englemann spruce litter.
Oe--2 to 0 inches; intermediately decomposed Englemann spruce litter.
A1--0 to 3 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, few fine through coarse roots; common very fine tubular pores; 20 percent pebbles; medium acid (pH 6.0); clear irregular boundary.
A2--3 to 9 inches; yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 3/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, few fine through coarse roots; common very fine tubular pores; 30 percent pebbles; slightly acid (pH 6.2); clear wavy boundary.
Bw1--9 to 20 inches; light yellowish brown (10YR 6/4) very gravelly loam; dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; many very fine, few fine through coarse roots; common very fine tubular pores; 35 percent pebbles, 10 percent cobbles, and 5 percent stones; slightly acid (pH 6.4); clear smooth boundary.
Bw2--20 to 33 inches; light yellowish brown (10YR 6/4) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, few fine through coarse roots; common very fine tubular pores; 1 percent very fine soft masses of lime; 1 percent very thin lime pendants on undersides of rock fragments; 40 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral (pH 7.3).
R--33 inches; hard calcareous siltstone.

Type location: Elko County, Nevada; approximately 10 miles southwest of Currie in the Cherry Creek mountains at about 600 feet east and 1,400 feet south of the northwest corner of section 16 T.26 N., R.63 E.; (40 degrees, 07 minutes, 55 seconds north latitude and 114 degrees, 48 minutes, 52 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter and spring, dry mid and late summer.
Soil temperature: 38 to 45 degrees F.
Summer soil temperature: 43 to 46 degrees F.
Depth to bedrock: 20 to 40 inches below the mineral soil surface.
Control section:
Clay content--12 to 18 percent.
Rock fragments--35 to 60 percent, of which 25 to 50 percent are pebbles and 10 to 20 percent are cobbles and stones.

A horizons:
Value--4 through 6 dry, 2 through 4 moist; lighter than 5.5 dry and 3.5 moist when the surface 7 inches is mixed.

Bw horizons:
Chroma--3 or 4.
Texture--Loam or silt loam.
Rock fragment--40 to 55 percent pebbles and cobbles

Mysol Series

The Mysol series consists of very deep, well drained soils that formed in lacustrine sediments over mixed alluvium. Mysol soils are on lake plains and alluviul flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual air temperature is about 48 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed (calcareous), mesic Durorthidic Torriorthents

Typical pedon: Mysol silty clay loam, in an area of map unit 720. (Colors are for dry soils unless otherwise noted.)

A1--0 to 2 inches; white (2.5Y 8/2) silty clay loam, grayish brown (2.5Y 5/2) moist; strong thick platy structure parting to medium platy; slightly hard, very friable, sticky and plastic; few very fine roots; many fine vesicular pores; strongly effervescent; SAR 6; very strongly alkaline (pH 9.6); abrupt smooth boundary.
A2--2 to 5 inches; light gray (2.5Y 7/2) silty clay loam, grayish brown (2.5Y 5/2) moist; strong medium platy structure; slightly hard, very friable, sticky and plastic; few very fine roots matted to plate surfaces; few fine vesicular and common tubular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
AC--5 to 17 inches; light gray (2.5Y 7/2) silty clay loam, brown (10YR 5/3) moist; pale brown (10YR 6/3) organic stains on plate surfaces; strong medium platy structure; slightly hard, very friable, sticky and plastic; many very fine, common fine and few medium roots matted on plate surfaces; common fine tubular pores; few thin lime coats on plate faces; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
Cqk--17 to 31 inches; very pale brown (10YR 7/4) silt loam with 1 to 2 inch lenses of silty clay loam along root channels, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine interstitial pores; 10 percent 1/2 inch cylindrical durinodes; many lime coats on ped surfaces; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
2Cqk2--31 to 46 inches; light gray (10YR 7/2) loamy fine sand, olive brown (2.5Y 4/4) moist; few fine yellow (2.5Y 7/6) iron mottles and dark grayish brown (10YR 4/2) manganese stains; massive; hard, friable, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine interstitial pores; 10 percent pebbles; 60 percent weak silica cementation; 40 percent soft matrix with 20 percent 1/2 to 1 inch diameter cylindrical durinodes; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
2Cqk3--46 to 54 inches; light gray (2.5Y 7/2) loamy fine sand, light yellowish brown (2.5Y 6/4) moist; many medium yellow (2.5Y 7/6) iron mottles and dark grayish brown (10YR 4/2) manganese stains; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores and common very fine tubular; 10 percent pebbles; 60 percent weak silica cementation; 20 percent 1/2 to 1 inch diameter cylindrical durinodes; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
3C--54 to 60 inches; white (10YR 8/1) fine sandy loam, grayish brown (2.5Y 5/2) moist; few fine dark grayish brown (10YR 4/2) manganese stains; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine interstitial pores and few tubular; strongly effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 11 miles southeast of Currie just east of Goshute Lake, about 1,100 feet east and 2,400 feet south of the northwest corner of section 8, T.26 N., R.65 E.; (40 degrees, 08 minutes, 37 seconds north latitude and 114 degrees, 40 minutes, 12 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and early spring, dry late spring through fall.
Soil temperature: 47 to 52 degrees F.
Depth to duric horizons: 25 to 35 inches.
Depth to contrasting materials: 20 to 40 inches
Control section:
Clay content--Upper part is 20 to 35 percent and the lower part averages 2 to 8 percent.
Texture--The upper part is silty clay loam or silt loam and the lower part is stratified very gravelly coarse sand to loamy fine sand with a few thin strata of fine sandy loam.
Rock fragments--Averages 0 to 20 percent.

A horizons:
Hue--2.5Y or 10YR.
Value--3 through 5 moist.
Chroma--1 through 3.
Reaction--Strongly alkaline to very strongly alkaline.

AC horizon:
Hue--2.5Y or 10YR.
Value--4 or 5 moist.
Chroma--2 through 4.

Cqk horizon:
Value--7 or 8 dry, 4 or 5 moist.
Chroma--2 through 4.
Reaction--Moderately alkaline or strongly alkaline.
Other features--0 to 10 percent durinodes.

2Cqk horizons:
Hue--2.5Y or 10YR.
Value--6 or 7 dry.
Chroma--2 through 4.
Structure--Massive or subangular blocky.
Cementation--20 to 35 percent durinodes with 40 to 60 percent weak silica cementation.

Nevador Series

The Nevador series consists of very deep, well drained soils that formed in loamy alluvium with a component of volcanic ash. Nevador soils are on fan piedmont remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Durixerollic Haplargids

Typical pedon: Nevador loam in an area of map unit 231. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A--0 to 3 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine and medium roots; common very fine interstitial pores; 10 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.
Bt--3 to 13 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; strong coarse subangular blocky structure parting to moderate medium; hard, friable, sticky and plastic; few very fine, fine and medium roots; common very fine interstitial and tubular pores; few fine clay films on faces of ped and lining pores; 10 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.
Bqk1--13 to 25 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and slightly plastic; few very fine roots; 70 percent very hard and firm durinodes; 10 percent pebbles; strongly effervescent; common fine lime filaments; moderately alkaline (pH 8.2); clear smooth boundary.
Bqk2--25 to 43 inches; very pale brown (10YR 7/3) gravelly fine sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and slightly plastic; few very fine interstitial pores; 20 percent pebbles; 20 percent very hard and firm durinodes; common fine lime filaments; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bqk3--43 to 60 inches; light gray (10YR 7/2) sandy loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine interstitial pores; common fine filaments of lime lining pores; 5 percent pebbles; 70 percent very hard and firm durinodes; common fine lime filaments; strongly effervescent; moderately alkaline (pH 8.4).

Type location: Elko County, Nevada; about 1 mile north of Welcome, Nevada; approximately 700 feet west and 150 feet south of the northeast corner of section 8, T.37 N., R.61 E.; (41 degrees, 06 minutes, 48 seconds north latitude and 115 degrees, 06 minutes, 09 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in winter and spring; dry June through October.
Soil temperature: 47 to 52 degrees F.
Depth to base of Bqk horizon: 18 to 60 inches.
Depth to base of the Bt horizons: 12 to 24 inches.

Control section:
Clay content--25 to 35 percent.
Mineralogy--Mixed, but some influence from vitric pyroclastic materials.
Carbonates--The A and Bt horizons are noncalcareous.
Other features--Some pedons have Bk horizons directly underneath the Bt horizons.

A horizon:
Value--5 or 6 dry, 3 or 4 moist. The average value of the upper 7 inches is greater than 5.5 dry.
Chroma--2 or 3.
Reaction--Neutral to mildly alkaline.

Bt horizon:
Hue--10YR or 7.5YR.
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 to 3.
Texture--Sandy clay loam, clay loam or loam.
Structure--Moderate or strong, fine through coarse prismatic, subangular blocky or angular blocky.
Reaction--Neutral to moderately alkaline.
Rock fragments--5 to 10 percent pebbles.

Bqk horizon:
Value--5 through 7 dry, 3 through 6 moist.
Chroma--2 or 3.
Texture--Stratified gravelly fine sandy loam to loamy sand.
Rock fragments--Averages 5 to 20 percent, mostly pebbles.
Reaction--Mildly alkaline through strongly alkaline.
Other features--20 to 70 percent durinodes with few very thin (2 millimeter thick) discontinuous and unoriented silica laminae. The durinodes are hard or very hard, firm or very firm, and include some durinodes that are extremely hard and extremely firm. Some pedons have thin strata of sand and gravel.

Okan Series

Okan series consists of very deep, well drained soils that formed in mixed alluvium and includes calcareous loess and volcanic ash. Okan soils are on beach plains, inset fans, fan aprons, fan skirts, and narrow drainageways of hills. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Xeric Torriorthents

Typical pedon: Okan sandy loam, in an area of map unit 351. (Colors are for dry soils unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles.

A1--0 to 3 inches; brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and few fine roots; many very fine interstitial pores; 5 percent pebbles; many thin and few moderately thick lime coats on various sides of pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--3 to 8 inches; light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, fine, common medium and few coarse roots; many very fine interstitial pores; 5 percent pebbles; many thin and few moderately thick lime coats on various sides of pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Ck--8 to 18 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, fine and common medium, and coarse roots; many very fine interstitial and common tubular pores; 5 percent durinodes 1/2 inch in diameter; 10 percent pebbles; many thin and few moderately thick lime coats on various sides of pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Cqk--18 to 38 inches; light gray (10YR 7/2) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and nonplastic; common very fine, fine, few medium and coarse roots; many very fine interstitial pores; 30 percent durinodes 1 inch in diameter; 5 percent pebbles and 5 percent cobbles; many thin and few moderately thick lime coats on various sides of rock fragments; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

2Cqk--38 to 60 inches; light gray (10YR 7/2) stratified extremely gravelly loamy sand to loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, few medium and coarse roots; many very fine interstitial pores; 55 percent pebbles and 10 percent cobbles; many thin lime and silica coats on various sides of rock fragments; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 8 miles southeast of Currie, about 1,600 feet east and 1.4 miles north of the northwest corner of section 4 in an unsectionized area, T.26 N., R.65 E.; (40 degrees, 11 minutes, 04 seconds north latitude and 114 degrees, 39 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist late fall and early spring, dry late spring through mid fall.
Soil temperature: 47 to 52 degrees F.
Depth to Duric horizon: 14 to 22 inches.
Control section:
Clay content--Averages 8 to 18 percent.
Rock fragments--Averages 0 to 20 percent.

A horizons:
Value--5 through 7 dry, 3 or 4 moist. The value when mixed is greater than 5.5 dry and 3.5 moist.
Chroma--2 or 3.
Calcium carbonate equivalent--1 to 5 percent.

Ck horizon:
Value--6 or 7 dry, 3 or 4 moist.
Chroma--2 or 3.
Durinodes--5 to 10 percent.
Calcium carbonates equivalent--5 to 10 percent.

Cqk horizon:
Clay content--8 to 18 percent.
Durinodes--20 to 35 percent
Calcium carbonate equivalent--5 to 15 percent.

2Cqk horizon:
Texture--Stratified extremely gravelly loamy sand to loamy sand.
Clay content--4 to 8 percent.
Calcium carbonate equivalent--5 to 15 percent.

Onkeyo Series

The Onkeyo series consists of shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Onkeyo soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Lithic Calcixerolls

Typical pedon: Onkeyo very gravelly silt loam located in an area of map unit 600. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles.

A1--0 to 3 inches; brown (10YR 5/3) very gravelly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
A2--3 to 8 inches; brown (10YR 5/3) very gravelly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk--8 to 17 inches; light yellowish brown (10YR 6/4) extremely cobbly silty clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; common thin lime coats and pendants on undersides of rock fragments; 40 percent pebbles, 25 percent cobbles, and 5 percent stones; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
R--17 inches; limestone.

Type location: Elko County, Nevada; approximately 6 miles south of Odgers Ranch in the Medicine Range in an unsectionized area about 1,120 feet north and 1,800 feet east of the projected southwest corner of section 27, T.27 N., R.61 E.; (40 degrees, 11 minutes, 03 seconds north latitude and 115 degrees, 05 minutes, 10 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist from late fall through spring, dry mid-July through October.
Soil temperature: 43 to 47 degrees F.
Mollic epipedon thickness: 7 to 10 inches.
Depth to calcic horizon: 7 to 10 inches.
Depth to bedrock: 14 to 20 inches.
Reaction: Mildly alkaline to strongly alkaline.
Control section:
Clay content--25 to 35 percent.
Rock fragments--50 to 80 percent, mainly cobbles.

A horizons:
Value--4 or 5 dry, 3 or 4 moist.
Effervescence--Slightly effervescent to violently effervescent.

Calcium carbonate equivalent--1 to 10 percent.

Bk horizon:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--3 or 4.
Texture--Silty clay loam or silt loam.
Clay content--25 to 35 percent.
Rock fragments--50 to 80 percent, mainly cobbles.
Structure--Subangular blocky or angular blocky.
Consistence--Slightly hard to very hard dry, friable to firm moist, slightly sticky or sticky, and slightly plastic to plastic wet.
Calcium carbonate equivalent--15 to 35 percent.
Other features--Thin to thick lime coats on undersides of rock fragments.

Orupa Series

The Orupa series consists of very deep, well drained soils that formed in windblown clay. Orupa soils are on parna dunes. Slopes are 0 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Xeric Torriorthents

Typical pedon: Orupa silty clay loam located in an area of map unit 764. (Colors are for dry soil unless otherwise noted.)

A--0 to 6 inches; light brownish gray (10YR 6/2) silty clay loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, sticky and slightly plastic; many very fine roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.7); abrupt smooth boundary.

C1--6 to 21 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (2.5Y 4/2) moist; weak medium subangular blocky structure; soft, very friable, sticky and plastic; many very fine, common fine, medium and coarse roots; many very fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

C2--21 to 60 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (2.5Y 4/2) moist; weak coarse subangular blocky structure; slightly hard, very friable, sticky and plastic; many very fine, few fine, medium and coarse roots; many very fine and fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Type location: Elko County, Nevada; approximately 13 miles northwest of Shanty, Nevada; 800 feet south and 200 feet east of the northwest corner of section 36, T.29 N., R.58 E.; (40 degrees, 21 minutes, 20 seconds north latitude and 115 degrees, 23 minutes, 34 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall.
Soil temperature: 47 to 52 degrees F.
Other features: Soil forms sand size aggregates which initially gives a texture of fine sandy loam.
Control section:
Clay content--35 to 55 percent.
Reaction--Moderately alkaline or strongly alkaline.

A horizon:
Hue--2.5Y or 10YR.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 or 3.

C horizons:
Hue--2.5Y or 10YR.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 or 3.
Texture--Clay loam, silty clay loam, silty clay or clay.
Clay content--35 to 55 percent.
Structure--Granular or subangular blocky.
Consistence--Soft or slightly hard dry.

Oupico Series

The Oupico series consists of moderately deep over a duripan, well drained soils that formed in mixed alluvium. Oupico soils are on fan piedmont remnants. Slopes are 2 to 4 percent. Mean annual precipitation is about 9 inches, and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Xerollic Durorthids

Typical pedon: Oupico loam is located in an area of map unit 280. (Colors are for dry soils unless otherwise noted.)

A--0 to 3 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine

interstitial pores; 5 percent pebbles; moderately alkaline (pH 7.9); abrupt wavy boundary.
Bk--3 to 11 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, nonsticky and nonplastic; few medium and coarse roots; many very fine interstitial pores; 10 percent pebbles; few fine filaments of lime; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.
Bqk--11 to 23 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; massive; hard, firm, nonsticky and nonplastic; few very fine and fine, medium and coarse roots; common very fine and fine interstitial pores; 10 percent pebbles; few fine filaments of lime; discontinuous brittle matrix; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
Bqkm--23 to 45 inches; white (10YR 8/2) indurated duripan with 2 to 3 millimeter laminar cap alternating with thin discontinuous lenses of strongly cemented laminae, extremely hard, extremely firm; violently effervescent; moderately alkaline (pH 8.4).
Cqk--45 to 60 inches; white (10YR 8/2) sandy loam, brown (10YR 5/3) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; few very fine interstitial pores; 10 percent pebbles; few fine filaments of lime; 20 percent hard durinodes in a discontinuous brittle matrix; violently effervescent; strongly alkaline (pH 8.6)

Type location: Elko County, Nevada; approximately 1 mile northeast of Wells; about 2,600 feet east and 800 feet north of the southwest corner of section 2, T.37 N., R.62 E.; (41 degrees, 06 minutes, 50 seconds north latitude and 114 degrees, 56 minutes, 05 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry June through October.
Soil temperature: 47 to 51 degrees F.
Depth to duripan: 20 to 40 inches.
Depth to Bk horizon: 2 to 5 inches.
Control section:
Clay content--8 to 18 percent.
Rock fragments--5 to 25 percent, mainly pebbles.

A horizon:
Value--6 or 7 dry.
Chroma--2 through 4.
Effervescence--Noneffervescent to slightly effervescent.
Reaction--Slightly alkaline or moderately alkaline.

Bk horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Texture--Loam or sandy loam.
Carbonates--Disseminated lime, soft pockets, or films.

Bqk horizon:
Hue--7.5YR or 10YR.
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4.
Texture--Loam or sandy loam.
Cementation--Thin coatings of silica or discontinuous weakly silica cemented layers.

Palinor Series

The Palinor series consists of shallow over duripan, well drained soils that formed in mixed alluvium from dominantly limestone sources. Palinor soils are on ballenas and fan piedmont remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic, shallow Xerollic Durorthids

Typical pedon: Palinor very gravelly loam located in an area of map unit 421. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine and common fine vesicular pores and few very fine and fine tubular pores; 50 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
Bw--3 to 8 inches; very pale brown (10YR 7/3) very gravelly loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine, medium and few coarse roots; common very fine and fine tubular pores; common thick lime coats and pendants on undersides of rock fragments; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
Bk--8 to 16 inches; very pale brown (10YR 7/3) extremely gravelly loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; few very fine tubular pores; many thick lime coats and pendants on undersides of rock

fragments; 70 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

2Bqkm--16 to 34 inches; white (10YR 8/1) indurated duripan, white (10YR 8/2) moist; massive; extremely hard, extremely firm; 2 to 5 millimeter laminar cap; 50 percent pebbles and 10 percent cobbles; violently effervescent; clear wavy boundary.

2Cqk1--34 to 48 inches; very pale brown (10YR 7/3) extremely gravelly loamy coarse sand, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; many fine interstitial pores; many moderately thick lime and silica coats on undersides of rock fragments and common thin pendants; 70 percent pebbles and 10 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

3Cqk2--48 to 60 inches; white (10YR 8/2) extremely gravelly loamy coarse sand, light brownish gray (10YR 6/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many fine interstitial pores; 50 percent discontinuous silica and lime cementation; common thin silica and lime coats on undersides of pebbles; 70 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 1.25 miles north of Silver Zone Pass about 900 feet north and 1,500 feet west of the southeast corner of section 6, T.35 N., R.68 E.; (40 degrees, 56 minutes, 17 seconds north latitude and 114 degrees, 19 minutes, 40 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer and fall.

Soil temperature: 47 to 52 degrees F.

Depth to duripan: 14 to 20 inches.

Reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--10 to 18 percent.

Rock fragments--45 to 75 percent pebbles and 0 to 5 percent cobbles.

Calcium carbonate equivalent--40 to 60 percent.

A horizon:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Bw horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Structure--Weak or moderate subangular blocky.

Rock fragment--15 to 35 percent pebbles

Consistence--Soft or slightly hard.

Bk horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Structure--Subangular blocky or massive.

Bqkm horizon:

Value--7 or 8 moist or dry.

Chroma--1 through 3.

Cqk horizons:

Value--6 through 8 dry, 4 through 6 moist, may be variegated in coarse textured subhorizons.

Chroma--1 through 3.

Rock fragments--45 to 70 percent pebbles, 0 to 20 percent cobbles.

Consistence--Slightly hard to hard, very friable to firm, nonplastic and slightly plastic.

Other features--Discontinuous weakly to strongly silica and lime cemented subhorizons are found in most pedons.

Parisa Series

The Parisa series consists of moderately deep over a indurated duripan, well drained soils that formed in alluvium from limestone. Parisa soils are on fan piedmont remnants and offshore bars. Slopes are 2 to 8 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Xerollic Durorthids

Typical pedon: Parisa gravelly loam located in an area of map unit 856. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 65 percent pebbles.

A1--0 to 3 inches; light brownish gray (10YR 6/2) gravelly loam, dark brown (10YR 3/3) moist; weak thick platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine vesicular and tubular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

A2--3 to 5 inches; light brownish gray (10YR 6/2) gravelly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly

sticky and slightly plastic; many very fine, common fine and medium roots; many very fine interstitial and tubular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

Bk--5 to 12 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine, medium and coarse roots; many very fine interstitial pores; 10 percent 10 to 20 millimeter diameter durinodes; many thick lime coats and pendants on undersides of rock fragments; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bqk1--12 to 26 inches; very pale brown (10YR 7/3) very gravelly loam, light yellowish brown (10YR 6/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine, common fine and medium roots; many very fine tubular pores; common white (10YR 8/2) soft masses of lime; 20 percent hard and brittle 15 to 25 millimeter diameter durinodes; many thick lime and silica pendants on undersides of pebbles; 45 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); gradual wavy boundary.

Bqk2--26 to 36 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, many very fine roots; many very fine interstitial pores; common white (10YR 8/2) soft masses of lime; 50 percent discontinuous weak silica and lime cementation; many thick lime coats and pendants on undersides of pebbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bqkm--36 to 60 inches; indurated duripan; massive; extremely hard extremely firm; violently effervescent.

Type location: Elko County, Nevada; approximately 18 miles northeast of Odgers Ranch about 2,000 feet north and 1,500 feet west of the southeast corner of section 30, T.31 N., R.63 E.; (40 degrees, 32 minutes, 08 seconds north latitude and 114 degrees, 53 minutes, 55 seconds west longitude.)

Range in characteristics:

Soil moisture: usually dry, moist in winter and spring, dry late spring, summer and fall.
Soil temperature: 47 to 52 degrees F.
Depth to lime and silica cementation: 5 to 24 inches.
Depth to indurated duripan: 20 to 40 inches.
Reaction: Moderately alkaline or strongly alkaline.
Control section:
Clay content--8 to 18 percent.
Rock fragments--35 to 60 percent, dominantly pebbles.
Calcium carbonate equivalent--40 to 60 percent by weight of the 20 millimeters fraction.
Other features--Some pedons have thin strata of gravelly loam in the control section.

A horizons:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.

Bk horizon:
Silica cementation--May contain up to 10 percent durinodes.
Other features--Thin to thick lime coats on undersides of rock fragments.

Bqk horizons:
Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 through 4.
Structure--Weak to moderate subangular blocky or massive.
Textures--Loam and sandy loam.
Consistence--Very friable to brittle moist.
Silica cementation--20 to 60 percent discontinuous weak silica cementation and some pedons have subhorizons with up to 20 percent durinodes.
Other features--Thin to thick lime coats on undersides of rock fragments.

Bqkm horizon:
Structure--Coarse to very coarse platy, or it is massive.

Peeko Series

The Peeko series consists of shallow over a indurated duripan, well drained soils that formed in loess with a component of volcanic ash over mixed alluvium. Peeko soils are on fan piedmont remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Xerollic Durorthids

Typical pedon: Peeko gravelly loam located in an area of map unit 276. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 10 percent pebbles.

A1--0 to 1 inches; light brownish gray (10YR 6/2) gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; slightly hard, very friable, slightly

sticky and slightly plastic; common very fine, fine and few medium roots; many very fine interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

A2--1 to 4 inches; light brownish gray (10YR 6/2) gravelly loam, dark brown (10YR 4/3) moist; weak thin platy parting to weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine interstitial pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bqk--4 to 10 inches; pale brown (10YR 6/3) very gravelly silt loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; many very fine tubular pores; 35 percent pebbles; discontinuous weakly silica and lime cemented matrix with 10 percent hard, firm durinodes; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bqkm--10 to 30 inches; indurated duripan with a 1 millimeter laminar cap.

Type location: Elko County, Nevada; approximately 2 miles southwest of Moore Summit in Independence Valley; located in an unsectionized area 2,200 feet north and 300 feet east of the projected southwest corner of section 8, T.37 N., R.64 E.; (41 degrees, 06 minutes, 07 seconds north latitude and 114 degrees, 46 minutes, 30 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry fall and summer.

Soil temperature: 47 to 52 degrees F.

Depth to indurated duripan: 10 to 20 inches.

Control section:

Clay content--18 to 27 percent.

Rock fragments--Averages 15 to 35 percent, mainly pebbles of which approximately 80 to 90 percent are comprised of duripan fragments.

Effervescence--Strongly effervescent or violently effervescent.

A horizons:

Value--6 or 7 dry, 3 or 4 moist.

Chroma--2 or 3.

Bqk horizon:

Value--6 through 8 dry, 4 through 6 moist.

Chroma--3 or 4.

Consistence--Soft or slightly hard, very friable or friable, slightly sticky or sticky, nonplastic to plastic.

Cementation--10 to 40 percent weak or strongly cemented durinodes.

Texture--Silt loam.

Coarse fragments--15 to 40 percent pebbles and duripan fragments of which up to 30 percent are cobble size.

Pharo Series

The Pharo series consists of very deep somewhat excessively drained soils that formed in alluvium from limestone and dolomite. Pharo soils are on ballenas and fan piedmont remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 45 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Aridic Calcixerolls

Typical pedon: Pharo gravelly loam in an area of map unit 1161. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles.

A1--0 to 2 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure parting to fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2--2 to 13 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk1--13 to 23 inches; light gray (10YR 7/2) very gravelly loam, yellowish brown (10YR 5/4) moist; strong medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; continuous weak lime cementation with moderate lime coats on coarse fragments; 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

Bk2--23 to 36 inches; white (10YR 8/2) extremely gravelly sandy loam, light yellowish brown (10YR 6/4) moist;

massive; slightly hard, friable, nonsticky and slightly plastic; continuous weak lime cementation with moderately thick lime coats on rock fragments; 65 percent pebbles and 2 percent cobbles; violently effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

Bk3--36 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; continuous weak lime cementation with thick lime pendants on undersides of coarse fragments; 70 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; about 16 miles north of Currie, Nevada in the southern end of the Pequop Mountains, approximately 500 feet south and 1,200 feet west of the northeast corner of section 36, T.31 N., R.64 E.; (40 degrees, 31 minutes, 34 seconds north latitude and 114 degrees, 41 minutes, 15 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist 60 to 90 consecutive days during the 120 days after the winter solstice. These soils are dry in the moisture control section more than 50 percent of the time the soil temperature is above 41 degrees F., and are continually dry for more than 60 consecutive days during the summer months in more than 7 out of 10 years.

Soil temperature: 47 to 52 degrees F.

Depth to calcic horizon: 7 to 18 inches, and this horizon is 23 inches or more thick.

Control section:

Texture--Silt loam or loam to sandy loam averaging 50 to 70 percent gravel. Coarse sand may be present in the lower part of the particle-size control section in some pedons.

Calcium carbonate equivalent--40 to 80 percent.

A horizons:

Chroma--2 or 3.

Reaction--Mildly or moderately alkaline.

Effervescence--Slightly or strongly effervescent.

Structure--Granular, platy, or subangular blocky.

Consistence--Soft to slightly hard and friable to very friable.

Bk horizons:

Hue--of 7.5YR or 10YR.

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Reaction--Mildly to strongly alkaline.

Effervescence--Strongly or violently effervescent.

Other features--Carbonates are as masses and as coatings on gravel.

Structure--Subangular blocky or massive.

Consistence--Loose, or slightly hard, friable to very friable, nonsticky to slightly sticky, and nonplastic or slightly plastic.

Piltdown Series

The Piltdown series consists of very deep, well drained soils that formed in loamy alluvium derived from mixed volcanic and sedimentary rock. Piltdown soils are on sand sheets. Slopes are 2 to 8 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Piltdown fine sandy loam located in an area of map unit 961. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; light brownish gray (2.5Y 6/2) fine sandy loam, dark grayish brown (2.5Y 4/2) moist; weak very thick platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial and common fine vesicular pores; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

A2--4 to 10 inches; light brownish gray (2.5Y 6/2) fine sandy loam, dark grayish brown (2.5Y 4/2) moist; weak very coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine and few medium roots; many very fine interstitial and few very fine tubular pores; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

C1--10 to 28 inches; light brownish gray (2.5Y 6/2) fine sandy loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine and few medium roots; common very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C2--28 to 44 inches; light gray (2.5Y 7/2) very fine sandy loam, grayish brown (2.5Y 5/2) moist; massive; slightly

hard, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; common very fine tubular pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
C3--44 to 60 inches; grayish brown (2.5Y 7/2) very fine sandy loam, light gray (2.5Y 5/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and few fine tubular pores; violently effervescent; moderately alkaline (pH 8.4)

Type location: Elko County, Nevada; approximately 3 miles west of White Horse Mountain; about 1,000 feet north and 2,600 feet east of the southwest corner of section 19, T.28 N., R.68 E.; (40 degrees, 16 minutes, 45 seconds north latitude and 114 degrees, 20 minutes, 30 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist for short periods in the winter and spring, dry late May through November.
Soil temperature: 47 to 53 degrees F.
Reaction: Mildly alkaline through strongly alkaline.
Effervescence: Slightly effervescent to violently effervescent throughout the profile.
Control section:
Clay content--10 to 18 percent
Rock fragments--Up to 15 percent, mainly pebbles with thin strata of up to 25 percent.

A horizons:
Hue--10YR or 2.5Y.
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 or 3.

C horizons:
Hue--10YR or 2.5Y.
Value--5 through 7 dry, 3 through 5 moist.
Chroma--2 or 3.
Texture--Loam, sandy loam, fine sandy loam or very fine sandy loam.
Consistence--Soft through slightly hard dry, very friable or friable moist.

Pioche Series

The Pioche series consist of very shallow and shallow, well drained soils that formed in residuum from andesite. The Pioche soils are on mountains. Slopes are 2 to 50 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, mesic Lithic Argixerolls

Typical pedon: Pioche very gravelly sandy loam located in an area of map unit 430. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 40 percent gravel, 10 percent cobbles, and 2 percent stones.

A--0 to 2 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; 35 percent pebbles and 10 percent cobbles; neutral (pH 7.0); abrupt smooth boundary.
Bt1--2 to 6 inches; grayish brown (10YR 5/2) very cobbly clay, very dark grayish brown (10YR 3/2) moist; weak fine prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common very fine, fine, medium and few coarse roots; common very fine tubular pores; few thin clay films lining pores and faces of peds; 30 percent pebbles and 20 percent cobbles; neutral (pH 7.2); abrupt smooth boundary.
Bt2--6 to 12 inches; yellowish brown (10YR 5/4) very cobbly clay, dark brown (10YR 3/3) moist; moderate fine angular blocky structure; hard, friable, sticky and plastic; common very fine, fine, few medium and coarse roots; common very fine tubular pores; common thin clay films lining pores and on faces of peds; 30 percent pebbles and 20 percent cobbles; neutral (pH 7.0).
2R--12 inches; slightly weathered rhyolite.

Type location: Elko County, Nevada; approximately 26 miles northwest of Wendover, Nevada; about 100 feet north and 450 feet west of the southeast corner of section 25, T.37 N., R.67 E.; (41 degrees, 03 minutes, 16 seconds north latitude and 114 degrees, 20 minutes, 06 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist winter and spring, dry summer and fall.
Soil temperature: 47 to 53 degrees F.
Depth to bedrock: 6 to 15 inches.
Thickness of mollic epipedon: 7 to 10 inches when the upper 7 inches of the soil is mixed, extends into upper part of argillic horizon or to bedrock when the depth is less than 7 inches.

Reaction: Neutral or mildly alkaline.
Control section:
Clay content--35 to 50 percent.
Rock fragments--35 to 50 percent, dominantly cobbles.

A horizon:
Hue--10YR or 7.5YR.
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:
Hue--10YR, 7.5YR, 5YR.
Value--4 or 5 dry, 2 through 4 moist.
Chroma--2 through 4.
Structure--Weak or moderate prismatic; moderate or strong, fine or medium angular blocky; moderate or strong subangular blocky.
Consistence--Slightly hard or hard dry, friable or firm moist, sticky or very sticky and plastic or very plastic wet.

Pookaloo Series

The Pookaloo series consists of shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Pookaloo soils are on hills and mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xerollic Calciorthids

Typical pedon: Pookaloo very gravelly loam located in an area of map unit 575. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 50 percent pebbles.

A--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine interstitial pores; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
Bk1--2 to 5 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial pores; common thick lime coats and pendants on undersides of pebbles; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk2--5 to 14 inches; very pale brown (10YR 7/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; common very fine interstitial pores; common thick lime coats and pendants on undersides of pebbles; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
R--14 inches; dolomite.

Type location: Elko County, Nevada; approximately 10 miles southeast of Wells in the Wood Hills; about 2,000 feet south and 600 feet east of the projected northwest corner of section 22, T.37 N., R.63 E.; (41 degrees, 04 minutes, 35 seconds north latitude and 114 degrees, 50 minutes, 54 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall except for 10 to 20 days between July and October due to convection storms.
Soil temperature: 47 to 52 degrees F.
Depth to bedrock: 14 to 20 inches.
Depth to calcic horizon: 2 to 6 inches.
Control section:
Clay content--10 to 18 percent.
Rock fragments--35 to 50 percent, mainly pebbles.
Calcium carbonate equivalent--40 to 70 percent for less than 20 millimeter material.

A horizon:
Value--5 through 7 dry, 3 through 6 moist.
Chroma--2 through 6 moist or dry.

Bk horizons:
Value--5 through 7 dry, 4 through 6 moist.
Chroma--3 through 6 moist or dry.
Structure--Subangular blocky or it is massive.
Texture--Silt loam or loam.
Secondary carbonates--5 to 20 percent by volume 1 to 5 millimeters thick lime pendants on undersides of pebbles.

Pyrat Series

The Pyrat series consists of very deep, well drained soils that formed in mixed alluvium. Pyrat soils are on fan piedmont remnants, beach plains, fan skirts, alluvial fans,

inset fans, and offshore bars. Slopes are 2 to 30 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Durixerollic Calciorthids

Typical pedon: Pyrat gravelly sandy loam located in an area of map unit 1000. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A1--0 to 2 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; weak medium platy structure; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine interstitial pores; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--2 to 6 inches; light gray (10YR 7/2) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine, medium and coarse roots; many very fine interstitial pores; few thin lime coats on pebbles; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--6 to 14 inches; very pale brown (10YR 7/3) very gravely sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, common fine and medium roots; many very fine interstitial pores; few thin lime coats on pebbles; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk--14 to 21 inches; very pale brown (10YR 7/3) very gravelly sandy loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine interstitial pores; 5 percent 10 to 25 millimeter durinodes; common thin lime coats on pebbles; 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

Bqk1--21 to 31 inches; white (10YR 8/2) very gravelly sandy loam, very pale brown (10YR 7/4) moist; massive; hard, firm, nonsticky and nonplastic; common very fine roots; common very fine tubular pores; 70 percent weak silica cementation; many thin lime coats with many thick lime coats on undersides of pebbles; 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Bqk2--31 to 42 inches; white (10YR 8/2) very gravelly sandy loam, very pale brown (10YR 7/4) moist; massive; hard, firm, nonsticky and nonplastic; common very fine roots; common very fine tubular pores; 30 percent weak silica cementation; many thin lime coats with many thick lime coats on undersides of pebbles; 50 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Ck--42 to 60 inches; very pale brown (10YR 7/3) stratified very gravelly loamy sand to very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many very fine and fine interstitial pores; common thin lime coats and pendants on undersides of pebbles; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Type location: Elko County, Nevada; approximately 10 miles northeast of Odgers Ranch; about 1,500 feet north and 1,800 feet east of the southwest corner of section 4, T.29 N., R.63 E.; (40 degrees, 25 minutes, 03 seconds north latitude and 114 degrees, 52 minutes, 33 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry June through October.
Soil temperature: 47 to 52 degrees F.
Depth to Bk horizon: 14 to 20 inches.
Depth to Bqk horizon: 18 to 32 inches.
Thickness of calcic horizon: 18 to 40 inches.
Control section:
Clay content--5 to 18 percent.
Rock fragments--35 to 80 percent.

A horizons:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 through 4.

Bw horizon:
Value--6 or 7 dry, 4 through 6 moist.
Chroma--3 or 4.
Structure--Medium or coarse subangular blocky.
Consistence--Nonsticky or slightly sticky wet.

Bk horizon:
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Structure--Massive or subangular blocky.
Texture--Loam or sandy loam.
Consistence--Slightly hard to very hard dry, friable to firm moist, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Reaction--Moderately alkaline or strongly alkaline.
Other features--Up to 15 percent discontinuous weak lime-silica cementation or durinodes may be present.

Bqk horizons:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 4.
Consistence--Friable or firm moist.
Reaction--Moderately alkaline or strongly alkaline.
Other features--30 to 70 percent weak silica-lime cementation occurring as discontinuous horizontal strata.

C horizon:
Value--6 or 7 dry, 5 or 6 moist.
Chroma--2 through 4.
Texture--Stratified very gravelly sandy loam to extremely gravelly loamy sand.
Consistence--slightly hard or hard dry.
Reaction--Moderately alkaline or strongly alkaline.
Rock fragments--35 to 85 percent pebbles, up to 10 percent cobbles.

Ragtown Series

The Ragtown series consists of very deep, moderately well drained soils that formed in lacustrine sediments. Ragtown soils are on lake plains. 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: Fine, montmorillonitic (calcareous), mesic Typic Torriorthents

Typical pedon: Ragtown silty clay loam, in an area of map unit 1271. (Colors are for dry soil unless otherwise noted.)

A--0 to 5 inches; light gray (2.5Y 7/2) silty clay loam, grayish brown (2.5Y 5/2) moist; strong coarse platy structure parting to very fine platy; slightly hard, very friable, sticky and plastic; few very fine roots; many very fine and few fine vesicular and interstitial pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
C--5 to 16 inches; very pale brown (10YR 7/3) silty clay loam, yellowish brown (10YR 5/4) moist; strong coarse prismatic structure; slightly hard, friable, sticky and plastic; many very fine, fine and few medium to coarse roots; many very fine and common fine tubular pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
2C1--16 to 26 inches; very pale brown (10YR 7/3) silty clay, yellowish brown (10YR 5/4) moist; moderate coarse prismatic structure; slightly hard, friable, very sticky and very plastic; few very fine to medium roots; few very fine tubular pores; few fine soft masses of gypsum; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
2C2--26 to 60 inches; light gray (5Y 7/2) silty clay, pale olive (5Y 6/3) moist; strong coarse prismatic structure parting to very fine granular; hard, friable, very sticky and very plastic; few fine to coarse roots; few fine soft masses of gypsum; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 16 miles northeast of Spruce Mountain in the south end of Independence Valley, located in an unsectionized area about 3,500 feet east and 500 feet south of the northeast corner of section 25, T.33 N., R.64 E.; (40 degrees, 42 minutes, 56 seconds north latitude and 114 degrees, 40 minutes, 06 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, intermittently moist for short periods in the winter and spring, dry May through November.
Soil temperature: 53 to 57 degrees F.
Depth to fine textured materials: 16 to 32 inches.
Control section:
Clay content--Averages 35 to 45 percent with 25 to 35 percent clay in the upper part and more than 35 percent clay in the lower part.
Texture--Stratified silty clay loam, clay loam or sandy clay loam in the upper part and stratified clay, silty clay or silty clay loam in the lower part.
Reaction--Moderately alkaline to very strongly alkaline. Very strongly alkaline usually occurs in strongly saline-sodic affected areas.
Effervescence--Slightly to violently effervescent.

A horizon:
Hue--10YR, 2.5Y, or 5Y.
Value--5 through 7 dry and 3 through 5 moist.
Chroma--2 through 4.

C horizons:
Hue--10YR, 2.5Y, 5Y.
Value--6 or 7 dry and 4 through 6 moist.
Chroma--2 through 4.

Consistence--Slightly hard or hard dry, sticky or very sticky and plastic or very plastic wet.
Secondary carbonates--Are common in any subhorizon.
Relict redox concentration--Are typically present in any subhorizon, but are not diagnostic for the series.
Other features--Ck horizons with secondary carbonates may be present or absent in any pedon. Some pedons have few fine soft masses of gypsum.

Rozara Series

Rozara series consists of shallow, well drained soils that formed in residuum and colluvium from granite. Rozara soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 16 inches and the mean annual air temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Lithic Argixerolls

Typical pedon: Rozara very gravelly loamy coarse sand, in an area of map unit 470. The soil surface is covered with approximately 50 percent pebbles. (Colors are for dry soil unless otherwise noted.)

Oi--1 to 0 inches; needles, leaves and twigs; abrupt smooth boundary.
A--0 to 2 inches; grayish brown (10YR 5/2) very gravelly loamy coarse sand, very dark gray (10YR 3/1) moist; weak coarse platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; few medium tubular and common fine interstitial pores; 40 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary.
Bt1--2 to 6 inches; grayish brown (10YR 5/2) very gravelly loam, black (10YR 2/1) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; few very fine tubular and common very fine and fine interstitial pores; few thin clay films coating sand grains and lining pores; 40 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.
Bt2--6 to 11 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine and common medium and coarse roots; common very fine interstitial pores; few thin clay films coating sand grains and lining pores; 55 percent pebbles; mildly alkaline (pH 7.6); clear wavy boundary.
R--11 inches; granite bedrock.

Type location: Elko County, Nevada about 5 miles north of Silver Zone Pass in the Toano Range; approximately 2,000 feet east and 2,400 feet south of the projected northwest corner of section 17, T.36 N., R.68 E.; (41 degrees, 00 minutes, 15 seconds north latitude and 114 degrees, 18 minutes, 24 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist late fall through spring, dry in summer through mid fall.
Soil temperature: 45 to 47 degrees F.
Depth to bedrock: 10 to 14 inches.
Control section:
Clay content--14 to 18 percent.
Rock fragments--45 to 60 percent. Dominantly 2 to 5 millimeter granitic fragments.

A horizon:
Chroma--1 or 2 moist.

Bt horizons:
Value--2 or 3 moist.
Chroma--1 or 2 moist.
Texture--Sandy loam or loam
Clay content--14 to 18 percent.
Rock fragments--45 to 60 percent.
Structure--Weak or moderate, fine and medium subangular blocky.

Rubicity Series

The Rubicity series consists of very deep, well drained soils that formed in alluvium from pegmatitic granite. Rubicity soils are on alluvial fans. Slopes are 2 to 15 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Coarse-loamy, mixed, frigid Cumulic Haploxerolls

Typical pedon: Rubicity gravelly sandy loam, in an area of map unit 1700. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 30 percent pebbles.

A1--0 to 3 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, few medium and coarse roots; common very fine interstitial

pores; 20 percent pebbles; slightly acid (pH 6.2); clear smooth boundary.
A2--3 to 20 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, few medium and coarse roots; common very fine interstitial pores; 40 percent pebbles; neutral (pH 6.6); clear smooth boundary.
A3--20 to 27 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, few fine, medium and coarse roots; common very fine, few fine and medium tubular and interstitial pores; 25 percent pebbles; neutral (pH 6.8); gradual smooth boundary.
A4--27 to 42 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; moderate coarse subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine coarse roots; common very fine, few fine and coarse interstitial and tubular pores; 20 percent pebbles; neutral (pH 6.8); gradual smooth boundary.
C--42 to 60 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/6) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine and medium roots; common very fine, few fine and coarse interstitial and tubular pores; 10 percent pebbles; neutral (pH 7.0).

Type location: Elko County, Nevada; about 6 miles southwest of Arthur, Nevada; approximately 1,500 feet north and 2,800 feet west of the southeast corner of section 30, T.33 N., R.60 E.; (40 degrees, 42 minutes, 32 seconds north latitude and 115 degrees, 14 minutes, 47 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter and spring, dry in late summer and fall.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon thickness: 30 to 45 inches, with irregular organic carbon distribution.
Reaction: Slightly acid or neutral.
Control section:
Clay content--10 to 18 percent.
Rock fragments--Averages 15 to 35 percent pebbles, dominantly 2 to 5 millimeter.

A horizon (lower part):
Value--4 or 5 dry, 2 or 3 moist.
Rock fragments--Averages 15 to 35 percent.
Reaction--Slightly acid to neutral.

C horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--3 or 4 dry, 4 through 6 moist.
Texture--Sandy loam, gravelly sandy loam.
Rock fragments--10 to 25 percent pebbles.

Rubylake Series

The Rubylake series consists of very deep, poorly drained soils that formed in loess and mixed silty alluvium over lacustrine sediments. Rubylake soils are on lake plain terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Fine-silty, carbonatic, mesic Mollic Fluvaquents

Typical pedon: Rubylake clay loam, in an area of map unit 764. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; dark gray (10YR 4/1) clay loam, black (10YR 2/1) moist; moderate medium prismatic structure; slightly hard, very friable, sticky and plastic; many very fine and common fine and medium roots; many very fine vesicular and interstitial pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.
A2--2 to 7 inches; dark gray (10YR 4/1) clay loam, black (10YR 2/1) moist; moderate medium prismatic structure parting to subangular blocky; slightly hard, very friable, sticky and plastic; many very fine, common fine and medium roots; many very fine and fine interstitial pores; strongly effervescent; strongly alkaline (pH 9.0); abrupt wavy boundary.
C1--7 to 13 inches; light gray (10YR 6/1) silt loam, dark gray (10YR 4/1) moist; moderate very coarse prismatic structure parting to moderate thick platy; soft, very friable, sticky and slightly plastic; many very fine, fine and medium roots; many very fine and fine interstitial pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
C2--13 to 23 inches; light gray (10YR 6/1) silt loam, dark gray (10YR 4/1) moist; moderate very coarse prismatic structure; soft, very friable, sticky and slightly plastic; common very fine and few fine roots; many very fine,

common fine and medium tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Akb1--23 to 43 inches; gray (10YR 5/1) silt loam, very dark gray (10YR 3/1) moist; moderate very coarse prismatic structure parting to moderate coarse angular blocky; slightly hard, very friable, sticky and slightly plastic; common very fine and few fine roots; many very fine, common fine and medium tubular pores; common fine filaments of lime; violently effervescent; strongly alkaline (pH 8.8); clear irregular boundary.

Akb2--43 to 55 inches; gray (N 5/0) silt loam, very dark gray (N 3/0) moist; moderate coarse prismatic structure parting to moderate coarse angular blocky; hard, friable, sticky and plastic; common very fine and few fine roots; many very fine, common fine and medium tubular pores; common fine filaments of lime; violently effervescent; strongly alkaline (pH 8.8); clear irregular boundary.

Cb--55 to 60 inches; white (5Y 8/1) silty clay loam, light gray (5Y 7/1) moist; massive; hard, firm, sticky and plastic; common very fine tubular pores; few medium dark brown (7.5YR 4/4) mottles along root channels; fine medium filaments of lime; violently effervescent; strongly alkaline (pH 8.9).

Type location: Elko County, Nevada; about 12.5 miles northeast of the Ruby Lake National Wildlife Refuge Headquarters; approximately 900 feet south of the northeast corner of section 35, T.29 N., R.58 E.; (40 degrees, 21 minutes, 18 seconds north latitude and 115 degrees, 23 minutes, 37 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated below depths of 12 to 24 inches from mid spring to early summer then below 48 to 60 inches in mid to late summer.
Mollic subgroup feature: 7 to 10 inches thick
Soil temperature: 47 to 52 degrees F.
Control section:
Clay content--18 to 25 percent.
Reaction--Strongly alkaline or very strongly alkaline.
Calcium carbonate equivalent--40 to 50 percent.
Other features--Ostracod and gastrapod shells and shell fragments are common in some pedons.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Effervescence--Strongly effervescent to violently effervescent.
Other features--Calcium carbonate equivalent 30 to 40 percent.

C horizons:
Structure--Prismatic parting to platy or prismatic parting to angular blocky.
Consistence--Soft or slightly hard.
Other features--10 to 20 percent 1/2 to 1 inch diameter irregular lime nodules are common in lower subhorizons of some pedons.

Ab horizons:
Hue--10YR, 2.5Y or neutral.
Value--4 or 5 dry, 2 or 3 moist.
Chroma--0 or 1.
Calcium carbonate equivalent--40 to 45 percent.

Saltair Series

The Saltair series consists of very deep, poorly drained, slowly permeable soils that formed in lacustrine sediments. Saltair 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 50 degrees F.

Taxonomic class: Fine-silty, mixed, mesic Typic Salorthids

Typical pedon: Saltair silt loam located in an area of map unit 161. (Colors are for dry soil unless otherwise noted.)

Az--0 to 1 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; weak very fine granular structure; slightly hard, very friable, sticky and slightly plastic; many fine salt crystals; violently effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.

Cz1--1 to 3 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, medium and coarse roots; common very fine vesicular pores; many fine salt crystals; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Cz2--3 to 4 inches; light gray (10YR 7/2) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, medium and coarse roots; many very fine, common fine and few medium tubular pores; common fine salt crystals; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Cz3--4 to 8 inches; light gray (10YR 7/2) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, medium and coarse roots; many very fine, common fine and few medium tubular pores; common

very fine salt crystals; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Cz4--8 to 11 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine, fine and medium roots; many very fine, common fine and medium tubular pores; common very fine salt crystals; many very fine strong brown (7.5YR 5/6) mottles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

2Cz5--11 to 17 inches; white (10YR 8/1) silty clay loam, light gray (10YR 7/2) moist; strong thin platy structure; hard, friable, sticky and plastic; few very fine, fine and medium roots; many very fine tubular pores; few very fine salt crystals; many very fine, fine and medium strong brown (7.5YR 5/6) mottles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

2Cz6--17 to 24 inches; white (10YR 8/2) silty clay loam, pale brown (10YR 6/3) moist; strong thin platy structure; slightly hard, very friable, sticky and plastic; few very fine, fine and medium roots; many very fine tubular pores; few very fine salt crystals; common very fine dark brown (7.5YR 4/2) mottles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

2Cz7--24 to 33 inches; white (10YR 8/2) silty clay loam, pale brown (10YR 6/3) moist; strong thin platy structure; slightly hard, very friable, sticky and plastic; few very fine, fine and medium roots; many very fine tubular pores; common very fine salt crystals; few very fine dark brown (7.5YR 4/2) mottles; 20 to 30 percent hard nodules; few coarse lime masses on nodules; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

2Cz8--33 to 60 inches; white (10YR 8/2) silty clay loam, pale brown (10YR 6/3) moist; strong thin platy structure; slightly hard, very friable, sticky and plastic; many very fine tubular pores; few very fine salt crystals; few very fine dark brown (7.5YR 4/2) mottles; 20 to 30 percent hard nodules; few coarse lime masses on nodules; violently effervescent; strongly alkaline (pH 8.8).

Type location: Elko County, Nevada; approximately 10 miles northwest of Wendover; about 1,200 feet east and 2,000 feet south of the northwest corner of section 28, T.35 N., R.70 E.; (40 degrees, 53 minutes, 11 seconds north latitude and 114 degrees, 04 minutes, 15 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated with water during most of the year within a depth of 40 inches.

Control section:

Exchangeable sodium--15 to 70 percent.
Salt content--2 percent.
Clay content--20 to 35 percent.
Calcium carbonate equivalent--9 to 30.
Reaction--Moderately alkaline to very strongly alkaline throughout.

Az horizon:

Hue--10YR, 2.5Y, or 5Y.
Value--5 to 7 dry, 3 to 6 moist.
Chroma--1 to 3.
Conductivity--Saturation extract is greater than 16 and may exceed 200.

C horizon:

Hue--2.5Y, 5Y or N but includes some 7.5YR and 10YR.
Value--6 to 8 dry, 5 to 7 moist.
Chroma--1 to 3.
Texture--Silty clay loam or silt loam.
Clay content--20 to 35 percent.
Conductivity of saturation extract--Greater than 16.
Structure--Platy or massive.
Consistence--Slightly hard to hard, very friable to firm, slightly sticky to very sticky, and slightly plastic to very plastic.
Other features--There may be salt crystals and mottling in some pedons.

Schoer Series

The Schoer series consists of very deep, well drained soils that formed in mixed alluvium. Schoer soils are on fan piedmonts remnants. Slopes are 2 to 4 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Aridic Argixerolls

Typical pedon: Schoer loam, in an area of map unit 1780. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 5 percent pebbles.

A--0 to 3 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; dark gray (10YR 4/1)

organic coats on faces of peds; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine tubular and interstitial pores; 10 percent pebbles; mildly alkaline (pH 7.7); abrupt smooth boundary.

Bt1--3 to 8 inches; dark gray (10YR 4/1) clay loam, very dark grayish brown (10YR 3/2) moist; strong fine prismatic structure; slightly hard, friable, sticky and plastic; many very fine, common fine and medium roots; many very fine tubular pores; few pressure faces; few moderately thick clay films on faces of peds and lining pores; 5 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.

Bt2--8 to 16 inches; dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; strong coarse prismatic structure; hard, friable, very sticky and plastic; many very fine, few fine and medium roots; common very fine tubular pores; common pressure faces; common thin clay films on faces of peds and lining pores; 5 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.

2Bt3--16 to 23 inches; light brownish gray (10YR 6/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; strong medium prismatic structure; hard, friable, very sticky and plastic; many very fine, few fine and medium roots; common very fine tubular pores; common pressure faces; common thin clay films on faces of peds and lining pores; 15 percent pebbles; mildly alkaline (pH 7.6); clear wavy boundary.

3Bt4--23 to 33 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, brown (10YR 5/3) moist; massive; hard, friable, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; few very thin clay films on faces of peds and lining pores; 40 percent pebbles; mildly alkaline (pH 7.7); clear wavy boundary.

4C--33 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; common very fine and few fine roots; many very fine interstitial pores; 60 percent pebbles; mildly alkaline (pH 7.6).

Type location: Elko County, Nevada; approximately 7 miles south of Wells, Nevada; 200 feet north and 1,800 feet west of the southeast corner of section 8, T.36 N., R.62 E., (41 degrees, 00 minutes, 38 seconds north latitude and 114 degrees, 59 minutes, 20 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall.
Soil temperature: 47 to 52 degrees F.
Mollic epipedon thickness: 10 to 17 inches.
Depth to 4C horizon: 30 to 40 inches.
Depth to argillic horizon: 3 to 10 inches.
Control section:
Clay content--35 to 45 percent.
Rock fragments--Averages 5 to 20 percent pebbles.

A horizon:
Value--4 or 5 dry.
Reaction--Neutral to mildly alkaline.

Bt horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 through 3.
Texture--Clay loam or clay.
Clay content--35 to 45 percent.
Sand content--Less than 15 percent coarse and very coarse sand.
Consistence--Slightly hard or hard dry; very sticky or sticky wet.
Rock fragments--5 to 15 percent pebbles.
Reaction--Mildly alkaline to moderately alkaline.

2Bt horizon:
Value--5 or 6 dry, 4 or 5 moist.
Chroma--2 through 4.
Clay content--27 to 40.
Rock fragments--15 to 35 percent pebbles.
Structure--Prismatic or massive.
Reaction--Mildly alkaline to moderately alkaline.
Other features--Few fine filaments of lime are in lower subhorizons in some pedons.

3Bt horizon:
Value--5 or 6 dry, 4 or 5 moist.
Chroma--2 through 4.
Clay content--25 to 35 percent.
Rock fragments--35 to 40 percent.
Reaction--Mildly alkaline to moderately alkaline.
Other features--Few fine filaments of lime are present in some pedons.

4C horizon:
Texture--Loamy sand or coarse sand.
Clay content--2 to 8 percent.
Rock fragments--30 to 60 percent pebbles.
Structure--Massive or single grain.
Consistence--Slightly hard or loose.
Reaction--Mildly alkaline to moderately alkaline.

Secrepass Series

The Secrepass series consists of very deep, well drained soils that formed in mixed alluvium. Secrepass soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, frigid Typic Palexerolls

Typical pedon: Secrepass gravelly loam, in an area of map unit 1690. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 40 percent pebbles and 5 percent cobbles.

A1--0 to 3 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; weak thick platy parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine and few fine interstitial pores; 25 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A2--3 to 7 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, few medium and coarse roots; common very fine and few fine, medium and coarse interstitial and tubular pores; 15 percent pebbles; neutral (pH 6.8); abrupt smooth boundary.

Bt1--7 to 14 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and few fine and medium roots; many very fine and few fine and medium interstitial and tubular pores; common thin clay films on faces of peds and few thin lining pores; 25 percent pebbles and 5 percent cobbles; neutral (pH 6.6); abrupt smooth boundary.

2Bt2--14 to 23 inches; brown (10YR 5/3) very gravelly clay, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and few fine and medium roots; many moderately thick clay films on faces of peds and lining pores; 30 percent pebbles and 10 percent cobbles; neutral (pH 6.8); clear smooth boundary.

2Bt3--23 to 31 inches; dark yellowish brown (10YR 4/6) very gravelly clay, dark yellowish brown (10YR 4/6) moist; strong coarse prismatic parting to coarse angular blocky; hard, firm, very sticky and very plastic; few very fine to coarse roots; many very fine and few fine, medium and coarse tubular pores; many moderately thick clay films on faces of peds and lining pores; few pressure faces; 30 percent pebbles and 10 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

3C--31 to 60 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine and fine roots; common very fine interstitial pores; 45 percent pebbles, 15 percent cobbles, and 5 percent stones; slightly acid (pH 6.4).

Type location: Elko County, Nevada; approximately 5 miles north of Arthur, Nevada; 600 feet south and 2,400 feet west of the northeast corner of section 3, T.34 N., R.60 E.; (40 degrees, 51 minutes, 48 seconds north latitude and 115 degrees, 11 minutes, 14 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter and spring, dry in late summer and fall.
Soil temperature: 44 to 47 degrees F.
Mollic epipedon thickness: 12 to 16 inches includes upper part of argillic horizon.
Depth to abrupt textural boundary: 7 to 10 inches.
Depth to base of argillic: 30 to 40 inches.
Reaction: Slightly acid or neutral.
Control section:
Clay content--Averages 35 to 50 percent.
Rock fragments--Averages 35 to 60 percent.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.
Texture--Gravelly clay loam, very gravelly clay loam.
Clay content--30 to 40 percent.
Rock fragments--25 to 40 percent gravel, 0 to 5 percent cobbles.

2Bt horizons:
Value--4 or 5 dry.
Chroma--3 through 6.
Texture--Clay.
Clay content--40 to 60 percent.
Rock fragments--25 to 45 percent gravel and 5 to 15 percent cobbles.
Structure--Prismatic or subangular blocky.

Consistence--Slightly hard or hard dry, friable or firm moist, sticky or very sticky and plastic or very plastic wet.
Other features--Black (10YR 2/1) organic stains on faces of peds and lining pores.

Segura Series

The Segura series consists of very shallow or shallow well drained soils that formed is residuum and colluvium from rhyolite, andesite and tuffs. Segura soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 45 degrees F.

Taxonomic class: Loamy, mixed, frigid Lithic Argixerolls

Typical pedon: Segura very stony sandy clay loam located in an area of map unit 1030. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles, 5 percent cobbles, and 5 percent stones.

A--0 to 2 inches; grayish brown (10YR 5/2) very stony sandy clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and tubular pores; 40 percent pebbles; 5 percent cobbles, and 5 percent stones; mildly alkaline (pH 7.6); abrupt smooth boundary.
Bt1--2 to 6 inches; grayish brown (10YR 5/2) gravelly clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; many very fine, few fine and medium roots; many very fine interstitial and tubular pores; few thin clay films on faces of peds and lining pores; 30 percent pebbles; mildly alkaline (pH 7.7); abrupt wavy boundary.
Bt2--6 to 11 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, sticky and plastic; many very fine, few fine and medium roots; many very fine interstitial and tubular pores; few thin clay films on faces of peds and lining pores; 30 percent pebbles; mildly alkaline (pH 7.8); abrupt irregular boundary.
R--11 inches; rhyolite.

Type location: Elko County, Nevada; approximately 6 miles northeast of Currie in the Dolly Varden Mountains; located 200 feet south and 400 feet east of the projected northeast corner of section 32, T.29 N., R.66 E.; (40 degrees, 21 minutes, 07 seconds north latitude and 114 degrees, 32 minutes, 34 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer and early fall.
Soil temperature: 43 to 47 degrees F.
Mollic epipedon: 7 to 14 inches thick. Thin epipedons are mollic after mixing to 7 inches. Commonly includes part or all of Bt horizon.
Depth to bedrock: 7 to 14 inches.
Reaction: Neutral to moderately alkaline.
Control section:
Clay content--18 to 30 percent.
Rock fragments--Averages 10 to 35 percent.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.
Texture--Loam, sandy clay loam, or clay loam.
Structure--Angular blocky and subangular blocky.
Clay content--20 to 35 percent.
Rock fragments--10 to 35 percent.

Shabliss Series

The Shabliss series consists of shallow over a duripan, well drained soils that formed in mixed alluvium with a loess mantle high in volcanic ash. Shabliss soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Haploxerollic Durorthids

Typical pedon: Shabliss gravelly fine sandy loam located in an area of map unit 700. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 10 percent pebbles.

A--0 to 2 inches; light brownish gray (10YR 6/2) gravelly fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and common very fine and few fine vesicular pores; 15 percent 2 to 5 millimeter pebbles;

violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bw--2 to 10 inches; pale brown (10YR 6/3) very fine sandy loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular pores; few thin lime coats on undersides of coarse fragments; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bqk--10 to 15 inches; pale brown (10YR 6/3) very fine sandy loam, dark brown (10YR 4/3) moist; strong medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, common fine, few medium and coarse roots; few very fine tubular pores; 15 percent 5 to 10 millimeter durinodes; common thin lime coats on undersides of coarse fragments; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bqkm--15 to 31 inches; light yellowish brown (10YR 6/4) strongly cemented duripan, yellowish brown (10YR 5/4) moist; massive; very hard and very firm; few very fine and fine roots following fractures; common thin lime coats lining fractures; common thin lime seams; violently effervescent; clear smooth boundary.

2Bk--31 to 61 inches; light yellowish brown (10YR 6/4) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; 35 percent pebbles; strongly effervescent to noneffervescent with depth; moderately alkaline (pH 8.0).

Type location: Elko County, Nevada; approximately 20 miles northwest of Wendover, Nevada; about 150 feet north and 300 feet east of the southwest corner of section 8; T.35 N., R.68 E.; (40 degrees, 55 minutes, 16 seconds north latitude and 114 degrees, 19 minutes, 17 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist during winter and spring, dry summer through fall.
Soil temperature: 47 to 55 degrees F.
Depth to base of Bw horizon: 10 to 15 inches.
Depth to strongly cemented duripan: 10 to 20 inches.
Depth to bedrock: 60 inches or more.
Control section:
Clay content--5 to 15 percent.
Rock fragments--Averages 0 to 25 percent.

A horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.
Reaction--Neutral to moderately alkaline.
Other features--Some pedons have few fine soft pockets and films of lime and are violently effervescent.

Bw horizon:
Value--5 or 6 dry, 4 or 5 moist.
Chroma--2 through 4.
Texture--Very fine sandy loam, silt loam or loam with thin subhorizons with fine sandy loam in some pedons.
Consistence--Soft or slightly hard, very friable to friable, nonsticky to slightly sticky and nonplastic to slightly plastic.
Reaction--Neutral to strongly alkaline.
Other features--Some pedons have few fine soft films of lime that are effervescent in pockets.

Bqk horizon:
Cementation--5 to 45 percent durinodes in a friable or brittle matrix.
Texture--Very fine sandy loam, loam or silt loam, with fine sandy loam layers in some pedons.
Structure--Subangular blocky or massive.
Consistence--Slightly hard or hard dry; very friable or friable moist.

Bqkm horizon:
Structure--Platy or massive.
Consistence--Very hard or extremely hard.
Other features--In some pedons, 2 or more strongly cemented layers are interbedded with weakly cemented material.
Carbonates--Strongly effervescent to violently effervescent.

Bk horizon:
Clay content--0 to 10 percent.
Rock fragments--Some pedons are gravelly or very gravelly below the duripan.
Consistence--Soft to very hard, very friable to firm.
Reaction--Moderately alkaline to very strongly alkaline.

Shantown Series

The Shantown series consist of very deep, somewhat excessively drained soils that formed in re-worked granitic alluvium. Shantown soils are on beach plains and beach bars. Slopes are 0 to 8 percent. The mean annual

precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Aridic Haploxerolls

Typical pedon: Shantown gravelly loamy sand, in an area of map unit 1650. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 10 percent pebbles.

A1--0 to 2 inches; grayish brown (10YR 5/2) gravelly loamy sand, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and vesicular pores; 15 percent pebbles; mildly alkaline (pH 7.6); abrupt smooth boundary.

A2--2 to 7 inches; grayish brown (10YR 5/2) coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine tubular pores; 10 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.

A3--7 to 11 inches; brown (10YR 5/3) coarse sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and tubular pores; 10 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.

Bw1--11 to 15 inches; light yellowish brown (10YR 6/4) coarse sandy loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial and tubular pores; 10 percent pebbles; mildly alkaline (pH 7.6); clear wavy boundary.

Bw2--15 to 25 inches; pale brown (10YR 6/3) coarse sandy loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial and tubular pores; 10 percent pebbles; mildly alkaline (pH 7.6); clear wavy boundary.

C1--25 to 33 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 20 percent pebbles; mildly alkaline (pH 7.7); clear wavy boundary.

2C2--33 to 49 inches; very pale brown (10YR 7/3) gravelly sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; few thin lime coats on undersides of pebbles; 25 percent pebbles; mildly alkaline (pH 7.8); clear wavy boundary.

3Ck--49 to 60 inches; variegated extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few fine roots; many fine and medium interstitial pores; few thin lime coats on undersides of pebbles; 20 percent discontinuous weak lime cementation; 75 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0).

Type location: Elko County, Nevada; approximately 9 miles northeast of the Ruby Marsh National Wildlife Refuge Headquarters; 100 feet south and 200 feet east of the northwest corner of section 23, T.28 N., R.58 E.; (40 degrees, 18 minutes, 00 seconds north latitude and 115 degrees, 24 minutes, 45 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer and fall.
Soil temperature: 47 to 52 degrees F.
Mollic epipedon thickness: 10 to 15 inches.
Control section:
Clay content--Averages 8 to 12 percent.
Rock fragments--Averages 10 to 30 percent, dominantly 2 to 5 millimeter.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.
Reaction--Neutral or mildly alkaline.

Bw horizons:
Texture--Coarse sandy loam or sandy loam.
Clay content--8 to 12 percent.
Rock fragments--0 to 10 percent.

C1 horizon:
Texture--Coarse sandy loam or sandy loam.
Clay content--8 to 12 percent.
Rock fragments--15 to 35 percent.

2C2 horizon:
Texture--Sand, coarse sand, loamy coarse sand, or loamy sand.
Clay content--2 to 8 percent.
Rock fragments--5 to 30 percent.
Other features--Some pedons contain few thin lime coats on undersides of coarse fragments.

3Ck horizon:
Clay content--2 to 6 percent.
Rock fragments--50 to 80 percent.

Structure--Massive or single grain.
Calcium carbonate equivalent--1 to 10 percent.
SAR--0 to 5.
Cementation--10 to 30 percent discontinuous weak lime cementation.
Other features--Some pedons contain thin bands of gravelly loamy sand or coarse sand.

Sheffit Series

The Sheffit series consists of very deep, moderately well drained soils that formed in mixed alluvium over lacustrine sediments. Sheffit soils are on lake plains and alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 46 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Xeric Torriorthents

Typical pedon: Sheffit fine sandy loam located in an area of map unit 582. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; gray (10YR 6/1) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure; soft, very friable, nonsticky and slightly plastic; common fine, medium and few very fine roots; few very fine tubular pores; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
A2--2 to 5 inches; light gray (10YR 7/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; few very fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
A3--5 to 10 inches; light gray (10YR 7/2) sandy loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; few very fine tubular pores; 10 percent durinodes; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
Cnz1--10 to 23 inches; light gray (5Y 7/1) silty clay, light olive gray (5Y 6/2) moist; strong fine medium subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; few very fine tubular pores; few fine salt crystals; 15 percent durinodes; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.
Cnz2--23 to 36 inches; light gray (5Y 7/1) silty clay, light olive gray (5Y 6/2) moist; strong fine, medium prismatic parting to very fine subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; few very fine tubular pores; few fine salt crystals; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
Cn1--36 to 50 inches; light gray (5Y 7/1) silty clay, light olive gray (5Y 6/2) moist; strong very fine, fine prismatic parting to angular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; few very fine tubular pores; few very fine manganese stains; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
Cn2--50 to 60 inches; light gray (5Y 7/1) silty clay loam, light olive gray (5Y 6/2) moist; moderate very fine angular blocky structure; slightly hard, friable, sticky and plastic; few very fine and fine roots; few very fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Type location: Elko County, Nevada; approximately 2,000 feet northwest of Flowery Lake; about 1,200 feet north and 200 feet west of the southeast corner of section 17, T.33 N., R.66 E.; (40 degrees, 43 minutes, 59 seconds north latitude and 114 degrees, 31 minutes, 46 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and early spring, dry late spring through fall.
Soil temperature: 48 to 52 degrees F.
Depth to lacustrine sediments: 10 to 30 inches.
Other features: Some pedons have very thin layers of fine sandy loam below 50 inches.
Control section:
Clay content--35 to 50 percent.

A horizons:
Value--6 through 8 dry, 4 through 6 moist.
Chroma--1 through 3.
SAR--Less than 12.
Other features--Influenced by pyroclastics, when moisture content close to saturated state, very sticky; in moist state, slightly sticky.

Cnz and Cn horizons:
Hue--2.5Y, 5Y, or 10YR.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--1 through 3. Most pedons have a low chroma matrix or common, fine, faint low chroma mottles in the lower subhorizons.
Structure--Prismatic, angular blocky, subangular blocky or massive.
Texture--Stratified silt loam through clay

Consistence--Slightly hard or hard dry, very friable to firm moist, sticky or very sticky and plastic or very plastic wet.
Salinity--Commonly more than 8 millimhos per centimeter.
SAR--More than 20.
Other features--Some pedons have substrata with common black ped coatings and high chroma iron mottles.

Shuttle Series

The Shuttle series consists of very deep, well drained soils that formed in mixed alluvium. Shuttle soils are on fan skirts. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Torriorthents

Typical pedon: Shuttle silt loam is located in an area of map unit 340. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light brownish gray (10YR 6/2) silt loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 10 percent calcium carbonate equivalent; 5 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
A2--2 to 5 inches; light gray (10YR 7/2) silt loam; brown (10YR 5/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine intersitial pores; 15 percent calcium carbonate equivalent; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk--5 to 15 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; 15 percent calcium carbonate equivalent; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bqk1--15 to 42 inches; very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; massive; hard, firm, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 15 percent calcium carbonate equivalent; continuous brittle matrix; 10 percent pebbles; violently effervescent, moderately alkaline (pH 8.2); clear smooth boundary.
Bqk2--42 to 60 inches; very pale brown (10YR 7/3) stratified fine sandy loam to very gravelly sandy loam, pale brown (10YR 6/3) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; many very fine intersitital pores; 15 percent 5 millimeter in diameter, brittle durinodes; 25 percent discontinuous brittle lenses; 20 percent calcium carbonate equivalent; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 9 miles south of Montello about 2,000 feet east and 100 feet north of the southwest corner of section 14, T.38 N., R.69 E.; (41 degrees, 10 minutes, 08 seconds north latitude and 114 degrees, 08 minutes, 06 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry late May and through early November.
Soil temperature: 53 to 57 degrees F.
Depth to continuous brittle matrix: 10 to 20 inches.
Depth to Bqkm horizon: 40 to over 80 inches when present.
Control section:
Clay content--8 to 15 percent.
Rock fragments--5 to 15 percent, mainly pebbles
Calcium carbonate equivalent--10 to 25 percent
Reaction--Moderately alkaline or strongly alkaline.
Other features--The Bqkm horizon is absent in some pedons.

A horizons:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

Bk horizon:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Clay content--8 to 18 percent.
Structure--Massive or weak subangular blocky.
Texture--Silt loam, very fine sandy loam or gravelly silt loam.

Bqk horizons:
Hue--10YR or 2.5Y.
Chroma--3 or 4.
Clay content--5 to 15 percent.

Cementation--Continuous weak brittle matrix are 7 to 15 inches thick. Discontinuous weak silica cemented subhorizons have up to 30 percent 5 to 15 millimeter durinodes.
Other features--Substratum of stratified fine sandy loam to very gravelly sandy loam is common in some pedons below 40 inches.

Simon Series

The Simon series consists of very deep, well drained soils that formed in mixed alluvium. Simon soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Fine-loamy, mixed, frigid Aridic Argixerolls

Typical pedon: Simon loam located in an area of map unit 680. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; dark grayish brown (10YR 4/2) loam, very dark gray (10YR 3/1) moist; strong medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine, few fine and medium tubular pores; 10 percent pebbles; neutral (pH 7.0); clear smooth boundary.
A2--4 to 10 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; strong medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine tubular pores; few thin clay films coating mineral grains; 10 percent pebbles; neutral (pH 7.0); clear smooth boundary.
Bt1--10 to 15 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; moderate very fine and fine angular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; common very fine, few fine and medium tubular pores; few thin clay films coating mineral grains and on faces of peds and lining pores; 20 percent pebbles and 5 percent cobbles; neutral (pH 7.3); clear smooth boundary.
2Bt2--15 to 47 inches; pale brown (10YR 6/3) cobbly clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; common very fine, few fine and medium tubular pores; few thin clay films coating mineral grains and lining tubular pores; 10 percent pebbles and 15 percent cobbles; neutral (pH 7.2); clear smooth boundary.
3Bt3--47 to 60 inches; pale brown (10YR 6/3) very gravelly clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; common very fine, few fine and medium tubular pores; few thin clay films coating mineral grains and lining tubular pores; 40 percent pebbles and 10 percent cobbles; neutral (pH 7.2); abrupt smooth boundary.

Type location: Elko County, Nevada; approximately 12 miles north of Silver Zone Pass; located in an unsectionized area 2,200 feet north and 2,000 feet west of the projected southeast corner of sec 7, T.36 N., R.68 E.; (41 degrees, 01 minute, 00 seconds north latitude and 114 degrees, 19 minutes, 16 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist in winter and spring, dry mid-June through October.
Soil temperature: 45 to 47 degrees F.
Mollic epipedon thickness: 10 to 17 inches, may include upper part of the argillic horizon.
Combined thickness of A and Bt horizons: 40 to 60 inches.
Control section:
Clay content--20 to 35 percent.
Rock fragments--0 to 25 percent, predominantly pebbles.
Reaction--Slightly acid or neutral.

A horizons:
Chroma--1 through 3.

Bt horizon:
Value--4 through 6 dry, 3 or 4 moist.
Chroma--2 through 4.
Texture--Loam or clay loam.
Consistence--Hard to very hard.
Rock fragments--0 to 25 percent.
Clay content--18 to 35 percent.
Structure--Weak or moderate, very fine, fine or medium subangular blocky or angular blocky or prismatic.
Reaction--Slightly acid or neutral.

2Bt horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--3 or 4.
Texture--Clay or clay loam.
Consistence--Hard or very hard, sticky or very sticky and plastic or very plastic wet.
Clay content--35 to 45 percent.
Rock fragments--15 to 35 percent. Dominantly cobbles.

Reaction--Slightly acid or neutral.

3Bt horizon:
Value--5 or 6 dry, 3 or 4 moist.
Chroma--3 or 4.
Texture--Loam, clay loam, or sandy clay loam.
Consistence--Hard or very hard dry.
Clay content--20 to 35 percent.
Rock fragments--0 to 60 percent.

Slipback Series

The Slipback series consists of very deep, well drained soils that formed in alluvium derived mainly from granite. Slipback soils are on fan piedmont remnants and alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Xerollic Natrargids

Typical pedon: Slipback sandy loam located in an area of map unit 1740. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; gray (10YR 6/1) sandy loam, dark gray (10YR 4/1) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and few medium roots; many very fine and fine interstitial and common fine tubular pores; 10 percent pebbles; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--2 to 7 inches; light brownish gray (10YR 6/2) sandy loam, very dark grayish brown (10YR 3/2) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine interstitial and fine tubular pores; 10 percent pebbles; moderately alkaline (pH 8.4); abrupt smooth boundary.

A3--7 to 12 inches; light gray (10YR 7/2) sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; many very fine, fine and few medium tubular pores; 10 percent pebbles; moderately alkaline (pH 8.4); abrupt wavy boundary.

Btnk1--12 to 20 inches; grayish brown (2.5Y 5/2) gravelly sandy clay loam, dark grayish brown (2.5Y 4/2) moist; strong medium prismatic structure; hard, friable, sticky and plastic; few very fine, fine and medium roots; many very fine and fine tubular pores; many thin clay films on faces of peds and lining pores; common fine and medium soft masses of lime; 30 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Btnk2--20 to 39 inches; light brownish gray (2.5Y 6/2) gravelly sandy clay loam, grayish brown (2.5Y 5/2) moist; weak coarse subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; many very fine, fine, and few medium tubular pores; few thin clay films on faces of peds and lining pores; many fine filaments and common fine and medium soft masses of lime; 30 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Bky--39 to 55 inches; light yellowish brown (2.5Y 6/4) gravelly sandy loam, olive brown (2.5Y 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine, fine and few medium tubular pores; common fine filaments and few fine and medium soft masses of lime; few fine soft masses of gypsum; 25 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); abrupt wavy boundary.

2Cy--55 to 60 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, dark brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; few soft masses of gypsum; common fine and medium distinct light yellowish brown (10YR 6/4) mottles; 50 percent pebbles; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 5 miles north of the Warm Creek Ranch 2,200 feet north and 1,400 feet east of the southwest corner of section 18, T.34 N., R.62 E.; (40 degrees, 49 minutes, 39 seconds north latitude and 115 degrees, 01 minute, 14 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and early spring, dry from June through November.
Soil temperature: 53 to 57 degrees F.
Depth to carbonates: 12 to 25 inches.
Depth to the base of the natric horizon: 20 to 40 inches.

A horizons:
Value--5 through 7 dry, 3 through 5 moist.
Chroma--1 through 3.

Btn horizons:
Hue--10YR or 2.5Y.
Value--4 through 6 dry, and 4 or 5 moist.
Chroma--2 through 4.
Texture--Clay loam, sandy clay loam, loam.
Clay content--25 to 35 percent.

Rock fragments--5 to 30 percent, mainly fine gravel.
Structure--Prismatic or subangular blocky with some subhorizon that are prismatic.
Consistence--Slightly hard or hard dry and very friable through firm moist, slightly sticky or sticky and plastic or very plastic wet.
Reaction--Moderately alkaline or strongly alkaline, usually increasing with depth.
SAR--Btn and Btnk horizons range from 13 to 45.
Effervescence--Typically noneffervescent in the upper part and slightly effervescent or violently effervescent in the lower part. Some pedons are violently effervescent in all parts.

Bk horizon:
Hue--10YR or 2.5Y.
Value--5 through 7 dry, and 4 or 5 moist.
Chroma--3 or 4.
Texture--Coarse sandy loam or sandy loam.
Clay content--3 to 8 percent.
Rock fragments--5 to 25 percent mainly fine pebbles.
Consistence--Slightly hard or hard dry and very friable or friable moist.
Reaction--Moderately alkaline or strongly alkaline.
Other features--In some pedons there are subhorizons with up to 10 percent durinodes in a friable matrix.

2C horizon:
Hue--10YR or 2.5Y.
Value--5 through 7 dry, 4 through 6 moist.
Chroma--3 or 4.
Texture--Loamy coarse sand, sand, coarse sand.
Clay content--2 to 6 percent.
Rock fragments--5 to 15 percent, mainly fine pebbles. Some pedons have up to 50 percent pebbles.
Structure--Horizon is massive or single grain.
Consistence--Loose, soft or slightly hard, dry and loose or very friable moist.
Reaction--Moderately alkaline or strongly alkaline.
Other features--In some pedons these horizons are not present within a depth of 50 inches.

Smaug Series

The Smaug series consists of very deep, well drained soils that formed in silty lacustrine lake sediments influenced by loess. Smaug soils are on lake plain terraces. Slopes are 2 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Smaug fine sandy loam located in an area of map unit 1522. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 5 percent pebbles.

A1--0 to 2 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; many very fine interstitial and common very fine vesicular pores; common ostracod shell fragments; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
A2--2 to 13 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, common fine, medium and few coarse roots; many very fine interstitial and few very fine tubular pores; common ostracod shell fragments; 5 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
2C1--13 to 19 inches; white (2.5Y 8/2) silt loam, light yellowish brown (2.5Y 6/4) moist; weak thick platy structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, few medium and coarse roots; many very fine interstitial and few very fine tubular pores; common ostracod shell fragments; 5 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.
2C2--19 to 29 inches; white (2.5Y 8/2) silt loam, light brownish gray (2.5Y 6/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine interstitial and few very fine tubular pores; common ostracod shell fragments; 5 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.
3C--29 to 60 inches; white (2.5Y 8/2) silt loam, light gray (2.5Y 7/2) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine tubular pores; common ostracod shell fragments; violently effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 8 miles southeast of the Dead Cedar Mine in the Ferguson Flats; about 600 feet north and 100 feet west of the southeast corner of section 21, T.29 N., R.70 E.;

(40 degrees, 21 minutes, 52 seconds north latitude and 114 degrees, 04 minutes, 07 seconds west longitude.)

Range in characteristics:

Soil moisture: Dry in summer and fall, moist for short periods in winter and spring.
Soil temperature: 54 to 59 degrees F.
CaCO3 equivalent: 15 to 30 mixed; subhorizons vary from less than 5 to 50 percent; no pedogenic accumulation.
Control section:
Clay content--10 to 18 percent.
Sand fraction--Less than 15 percent fine sand and coarser.

A horizons:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 or 3.
Reaction--Moderately alkaline to strongly alkaline.
Effervescence--Strongly effervescent to violently effervescent.

C horizons:
Hue--10YR or 2.5Y.
Value--7 or 8 dry, 5 through 7 moist.
Chroma--2 through 4.
Texture--Very fine sandy loam or silt loam
Structure--Weak to strong, thin to thick platy.
Consistence--Soft to hard dry, friable to very friable, moist, slightly sticky to sticky and nonplastic to slightly plastic wet.
Reaction--Moderately alkaline to very strongly alkaline.

Sodhouse Series

The Sodhouse series consists of shallow over a duripan, well-drained soils that formed in mixed alluvium with a component of loess and ash. Sodhouse soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Typic Durorthids

Typical pedon: Sodhouse gravelly loam located in an area of map unit 496. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A1--0 to 2 inches; light brownish gray (10YR 6/2) gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, few fine and medium roots; many very fine and fine interstitial and vesicular pores; few thin lime coats on undersides of pebbles; 30 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
A2--2 to 8 inches; light brownish gray (10YR 6/2) gravelly loam, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and medium roots; many very fine tubular pores; few thin lime coats on undersides of pebbles; 25 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
Bw1--8 to 13 inches; very pale brown (10YR 7/3) gravelly loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, common fine and medium roots; many very fine tubular pores; common thin lime coats on undersides of pebbles; 25 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.
Bw2--13 to 16 inches; very pale brown (10YR 7/3) gravelly loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many very fine tubular pores; common thin lime coats on undersides of pebbles; 30 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.
2Bqkm--16 to 60 inches; white (10YR 8/2) indurated duripan, light gray (10YR 7/2) moist; massive; extremely hard, extremely firm, few very fine roots; violently effervescent.

Type location: Elko County, Nevada; approximately 2.25 miles southeast of Tobar; about 1,000 feet north and 100 feet east of the projected southwest corner of section 22, T.35 N., R.63 E.; (40 degrees, 53 minutes, 48 seconds north latitude and 114 degrees, 51 minutes, 05 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry from June through November.
Soil temperature: 47 to 53 degrees F.
Depth to indurated duripan: 14 to 20 inches.
Thickness of duripan: 6 to 44 inches.
Depth to 2Bk or 2Bqk horizon: 25 to 44 inches.
Reaction: Moderately alkaline or strongly alkaline usually increasing with depth.

Other features: Durinodes and lime accumulations are common in subhorizons immediately above the duripan of some pedons.
Control section:
Clay content--8 to 15 percent.

A horizon:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Other features--Normally noneffervescent, but some pedons are slightly effervescent due to lime recharge from dust.

Bw horizon:
Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Texture--Very fine sandy loam, fine sandy loam, silt loam, loam or gravelly loam.
Consistence--Slightly hard or hard dry, very friable to firm moist.
Rock fragments--5 to 35 percent, mainly pebbles.

Bqkm horizon:
Hue--10YR or 2.5Y.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Structure--Platy or is massive.

Sonoma Series

The Sonoma series consists of very deep, poorly drained soils that formed in mixed silty alluvium with a component of loess high in ash. Sonoma soils are on floodplains and fluvial areas. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Aeric Fluvaquents

Typical pedon: Sonoma silty clay loam located in an area of map unit 1620. (Colors are for dry soil unless otherwise noted.).

A--0 to 3 inches; gray (10YR 6/1) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; slightly hard, very friable, sticky and plastic; many very fine, common fine and medium roots; many very fine vesicular and interstitial pores; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
AC--3 to 6 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderately thick platy structure parting to moderately thin platy structure; slightly hard, very friable, sticky and plastic; many very fine, common fine and medium roots; many very fine tubular and many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.
C1--6 to 15 inches; white (10YR 8/2) silt loam, pale brown (10YR 6/3) moist; weak thin platy structure; slightly hard, very friable, sticky and slightly plastic; many very fine roots; many very fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
C2--15 to 24 inches; white (10YR 8/1) silt loam, light olive gray (10YR 6/2) moist; massive; slightly hard, friable, sticky and plastic; common very fine roots; many very fine tubular and common fine tubular pores; few fine distinct yellowish brown (10YR 5/6) iron mottles; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.
Ab--24 to 35 inches; pale yellow (5Y 7/3) silty clay loam, olive (5Y 4/3) moist; strong very coarse prismatic structure; hard, firm, very sticky and plastic; few very fine roots; many very fine tubular pores; violently effervescent; strongly alkaline (pH 8.7); clear wavy boundary.
C3--35 to 48 inches; white (5Y 8/1) silty clay loam, light olive gray (5Y 6/2) moist; strong very coarse prismatic structure; hard, firm, very sticky and plastic; few very fine roots; many very fine tubular pores; few fine and medium lime concretions; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
C4--48 to 60 inches; white (5Y 8/1) silty clay, light olive gray (5Y 6/2) moist; massive; hard, firm, very sticky and plastic; many very fine tubular pores; common fine dark brown (7.5YR 4/4) mottles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 18 miles southeast of Wells; about 900 feet south and 2,200 feet east of the northwest corner of section 2, T.35 N., R.64 E.; (40 degrees, 56 minutes, 58 seconds north latitude and 114 degrees, 42 minutes, 50 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated and aquic conditions during spring and early summer with the water table at depths below

40 inches during the remainder of the year, unless drained.
Soil temperature: 49 to 53 degrees F.
Depth to buried A horizon: 24 to 55 inches.
Carbonates: Calcium carbonate equivalent is 3 to 12 percent throughout the profile and is strongly effervescent or violently effervescent.
Control section:
Clay content--25 to 35 percent.

A and AC horizons:
Hue--2.5Y or 10YR.
Value--5 or 6 dry, 3 through 5 moist; is not darker than 5.5 dry and 3.5 moist when the upper 2 inches are mixed.
Chroma--1 or 2.
Reaction--Moderately alkaline to very strongly alkaline; buried A horizons are moderately alkaline or strongly alkaline.

Ab and C horizons:
Hue--10YR through 5Y.
Value--6 through 8 dry, 3 through 6 moist.
Chroma--1 or 2. Subhorizons in some pedons have chroma of 3 or 4.
Structure--Platy, prismatic, granular, subangular blocky or is massive.
Consistence--Slightly hard through very hard dry, friable to firm moist; slightly sticky to very sticky; slightly plastic to very plastic wet.
Texture--Stratified silt to silty clay loam with strata of clay or silty clay in some pedons.
Reaction--Moderately alkaline to very strongly alkaline.
Other features--Fresh-water crustacean shells and 1/4 to 1/2 inch diameter lime concretions in most pedons. Few soft masses of lime.

Stampede Series

The Stampede series consists of moderately deep to an indurated duripan well drained soils that formed in mixed alluvium. Stampede soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Fine, montmorillonitic, frigid Aridic Durixerolls

Typical pedon: Stampede gravelly loam is located in Elko County, Nevada, Central Part map unit 456. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with 15 percent pebbles.

A1--0 to 3 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and few medium roots; many very fine tubular and many very fine interstitial pores; 20 percent pebbles; neutral (pH 7.2); abrupt wavy boundary.
A2---3 to 7 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; strong fine and medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and common medium roots; few very fine tubular and many very fine interstitial pores; 20 percent pebbles; neutral (pH 6.8); abrupt wavy boundary.
A3--7 to 11 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine, fine medium and few coarse roots; many very fine tubular and common very fine interstitial pores; few thin clay films on faces of peds and bridging mineral grains, 15 percent pebbles; neutral (pH 6.8); clear wavy boundary.
Bt1--11 to 17 inches; yellowish brown (10YR 5/4) clay, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, friable, very sticky and very plastic; many very fine, fine, medium and few coarse roots; many very fine tubular pores; many thick clay films on faces of peds and lining pores; 10 percent pebbles; neutral (pH 6.8); clear wavy boundary.
Bt2--17 to 27 inches; dark yellowish brown (10YR 4/4) clay, dark yellowish brown (10YR 4/4) moist; few dark grayish brown (10YR 4/2) organic stains on faces of peds; strong coarse prismatic structure; very hard, very firm, very sticky and very plastic; common very fine, few fine and medium roots; few very fine tubular pores; continuous, prominent pressure faces; 10 percent pebbles; neutral (pH 6.8); clear wavy boundary.
Bt3--27 to 35 inches; yellowish brown (10YR 5/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; hard, firm, very sticky and very plastic; few very fine and fine roots; many very fine and few fine tubular pores; many moderate thick clay films on faces of peds and lining pores; few very fine pores are lined with silica; 15 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.
Bqkm--35 to 45 inches; pale brown (10YR 6/3) indurated duripan, dark yellowish brown (10YR 4/4) moist; very

hard, very firm and brittle; continuous 1 millimeter thick silica laminar cap at upper surface and continuous strong lime filaments; 60 percent pebbles; noneffervescent in matrix, strongly effervescent in lime filaments; mildly alkaline (pH 7.4).

Type location: Elko County, Nevada; approximately 44 miles north of Elko; about 2,200 feet west and 2,850 feet north of the southeast corner of section 4, T.40 N., R.54 E.; (41 degrees, 23 minutes, 13 seconds north latitude and 115 degrees, 53 minutes, 48 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring; dry July to October.
Soil temperature: 44 to 47 degrees F.
Depth to duripan: 20 to 37 inches.
Mollic epipedon thickness: 7 to 13 inches, may include upper part of Bt horizon of some pedons.
Control section:
Clay content--40 to 55 percent.
Rock fragments--0 to 10 percent pebbles.

A horizons:
Value--4 or 5 dry, 2 or 3 moist. (6 dry and 4 moist common in the lower subhorizon).
Chroma--2 or 3.
Reaction--Slightly acid or neutral.

Bt horizons:
Hue--10YR or 7.5YR.
Value--4 through 6 dry, 3 through 5 moist.
Chroma--2 through 4.
Rock fragments--Up to 15 percent in any one horizon.
Structure--Moderate or strong medium or coarse prismatic or fine to coarse subangular or angular blocky.
Reaction--Neutral to moderately alkaline.

Bqkm horizon:
Reaction--Mildly alkaline or moderately alkaline.
Other features--Noneffervescent to strongly effervescent in the matrix but contains few to many lime coatings on the surface or in fractures.

Stewval Series

The Stewval series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from andesite. Stewval soils are on hills. Slopes are 8 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

Typical pedon: Stewval very gravelly fine sandy loam located in an area of map unit 80. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with approximately 60 percent pebbles and 10 percent flagstones.

A--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate coarse platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 50 percent pebbles and 5 percent flagstones; slightly effervescent; mildly alkaline (pH 7.8); abrupt smooth boundary.
Bt--2 to 6 inches; light brownish gray (10YR 6/2) very gravelly loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; many very fine and fine vesicular pores; 35 percent pebbles and 5 percent flagstones; few thin clay films on faces of peds and lining pores; few thin lime coats on sides and bottom of rock fragments; strongly effervescent; mildly alkaline (pH 7.8); abrupt wavy boundary.
R--6 inches; fractured andesite bedrock; diagonally oriented flagstones with up to 2 millimeter thick lime coats on undersides.

Type location: Elko County, Nevada; approximately 5 miles southeast of Currie in the Currie Hills, about 1,800 feet north and 2,300 feet east of the southwest corner of section 1, T.27 N, R.64 E.; (40 degrees, 14 minutes, 35 seconds north latitude and 114 degrees, 42 minutes, 17 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.
Soil temperature: 53 to 59 degrees F.
Depth to bedrock: 4 to 14 inches.
Carbonates: Slightly effervescent to violently effervescent.
Reaction: Mildly alkaline or moderately alkaline.
Control section:
Clay content--18 to 27 percent.
Rock fragments--35 to 70 percent pebbles, 0 to 10 percent cobbles, 0 to 15 percent stones. Some pedons have 0 to 5 percent flagstones.

A horizon:
Hue--10YR or 7.5YR.
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 or 3.

Bt horizon:
Hue--10YR or 7.5YR or 5YR.
Value--5 or 6 dry, 3 through 5 moist.
Chroma--2 through 4.
Texture--(Less than 2 millimeter fraction) Loam or clay loam.
Structure--Subangular blocky or granular.
Consistence--Soft or slightly hard.
Other features--Silica and lime pendants are present on rock fragments in some pedons.

Sumine Series

The Sumine series consists of moderately deep, well drained soils that formed in residuum and colluvium from sandstone and conglomerate. Sumine soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Aridic Argixerolls

Typical pedon: Sumine very gravelly loam in an area of map unit 400. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 50 percent pebbles and 10 percent cobbles.

A1--0 to 3 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine tubular and common very fine interstitial pores; 45 percent pebbles; neutral (pH 6.6); abrupt smooth boundary.
A2--3 to 9 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine and fine tubular pores; 50 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.4); abrupt smooth boundary.
Bt1--9 to 15 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine, fine and few medium roots; many very fine, fine and few medium tubular pores; 50 percent pebbles and 5 percent cobbles; common moderately thick clay films on faces of peds and lining pores; mildly alkaline (pH 7.4); clear smooth boundary.
Bt2--15 to 23 inches; pale brown (10YR 6/3) very gravelly clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; many very fine and fine tubular pores; 45 percent pebbles and 10 percent cobbles; common moderately thick clay films on faces of peds and lining pores; mildly alkaline (pH 7.4); abrupt smooth boundary.
R--23 inches; conglomerate bedrock.

Type location: Elko County, Nevada; about 21 miles east of Wells, Nevada; approximately 2,000 feet north and 2,000 feet east of the southwest corner of section 1, T.37 N., R.65 E.; (41 degrees, 07 minutes, 00 seconds north latitude and 114 degrees, 34 minutes, 30 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in the winter and spring, dry from early July through mid-October.
Soil temperature: 42 to 47 degrees F.
Mollic epipedon thickness: 8 to 17 inches thick.
Depth to bedrock (lithic contact): 20 to 40 inches.
Combined thickness of the A and Bt horizons: 20 to 40 inches.
Reaction: Neutral or mildly alkaline.
Control section:
Clay content--25 to 35 percent, when mixed.
Rock fragments--35 to 60 percent, when averaged.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:
Hue--10YR or 7.5YR.
Value--4 through 6 dry, 2 through 4 moist.
Chroma--2 through 4.
Consistence--Soft to hard dry, very friable to firm moist, sticky or very sticky and plastic or very plastic wet.
Structure--Weak or moderate, very fine to medium angular or subangular blocky structure. The lower Bt horizons may be massive.

Sycomat Series

The Sycomat series consists of very deep, well drained soils that formed in mixed alluvium. Sycomat soils are on beach plains and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Duric Calciorthids

Typical pedon: Sycomat sandy loam located in an area of map unit 540. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 15 percent pebbles.

A--0 to 5 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, common fine, few medium and coarse roots; many very fine and few fine vesicular pores; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk--5 to 11 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, few medium, and coarse roots; common very fine tubular pores; 15 percent pebbles; common thin lime coats on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Bqk1--11 to 21 inches; very pale brown (10YR 7/3) gravelly loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm and brittle, nonsticky and nonplastic; common very fine roots; common very fine tubular pores; continuous brittle matrix; 25 percent pebbles; common moderately thick lime and silica coats on pebbles; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Bqk2--21 to 48 inches; very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, firm and brittle, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; continuous brittle matrix; 20 percent pebbles and 5 percent cobbles; common thin lime and silica coats on rock fragments; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

2C--48 to 60 inches; very pale brown (10YR 7/3) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine and few fine tubular pores; 35 percent pebbles; few thin lime coats on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.9).

Type location: Elko County, Nevada; approximately 3 miles southwest of Currie; about 4,000 feet north and 2,600 feet east of the southwest corner of section 4, T.27 N., R.64 E.; (40 degrees, 14 minutes, 57 seconds north latitude and 114 degrees, 45 minutes, 37 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July and October following convection storms.
Soil temperature: 47 to 53 degrees F.
Depth to calcic horizon: 2 to 6 inches.
Depth to continuous brittle matrix: 10 to 23 inches.
Effervescence: Strongly effervescent to violently effervescent.
Control section:
Clay content--5 to 18 percent.
Rock fragments--0 to 35 percent.
Calcium carbonate equivalent--(Less than 20 millimeter fraction) 15 to 30 percent.

A horizon:
Value--5 or 6 dry, 4 or 5 moist.
Chroma--2 or 3.

Bk horizon:
Value--6 or 7 dry, 4 through 6 moist.
Chroma--3 or 4.
Clay content--5 to 18 percent.
Texture--Sandy loam, loam, or silt loam.
Rock fragments--0 to 35 percent.
Structure--Weak to moderate subangular blocky.
Reaction--Moderately alkaline to very strongly alkaline.
Consistence--Very friable or friable, moist; nonsticky or slightly sticky, nonplastic or slightly plastic, wet.
Effervescence--Strongly effervescent or violently effervescent.
Other features--Lime cemented soil masses may be absent in some pedons.

Bqk horizons:
Hue--10YR or 7.5YR.
Value--6 through 8 dry, 4 through 6 moist.
Chroma--2 through 4.
Texture--Coarse sandy loam, sandy loam, or loam.
Clay content--5 to 18 percent.
Rock fragments--0 to 35 percent.

Structure--Medium or coarse; platy, subangular blocky or platy or is massive.
Consistence--Slightly hard or hard, dry; slightly brittle or brittle moist; nonsticky or slightly sticky and nonplastic or slightly plastic, wet.
Reaction--Moderately alkaline to very strongly alkaline.
Other features--Discontinuous weak silica and lime cementation with 20 to 80 percent weakly to strongly cemented plates and durinodes.

2C horizon:
Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 through 4.
Texture (less than 2 millimeter fraction)--Stratified sandy loam through sand, averages loamy sand or sand.
Clay content--2 to 5 percent.
Rock fragments--Averages 35 to 60 percent, mainly pebbles.
Structure--Massive or single grain.
Consistence--Loose to soft, slightly hard dry and loose to friable moist.

Tarnach Series

The Tarnach series consists of shallow, well drained, soils that formed in residuum and colluvium from andesite influenced by calcareous loess. Tarnach soils are on hills and mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 10 inches. The mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Calciorthids

Typical pedon: Tarnach very gravelly loam in an area of map unit 691. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 50 percent pebbles and 15 percent flagstones.

A--0 to 3 inches; light brownish gray (10YR 6/2) very gravelly loam, brown (10YR 4/3) moist; strong medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine interstitial pores; 40 percent pebbles; 1 to 2 millimeter thick lime coats and pendants on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
Bk1--3 to 9 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, common medium and coarse roots; many very fine interstitial pores; 45 percent pebbles; 1 to 2 millimeter thick lime coats and pendants on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
Bk2--9 to 12 inches; very pale brown (10YR 7/3) very gravelly loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, few medium and coarse roots; many very fine interstitial and common fine tubular pores; 5 percent 0.5 inch diameter hard and brittle durinodes; 55 percent pebbles; 1 to 2 millimeter thick lime coats and pendants on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.
R--12 inches; fractured andesite.

Type location: Elko County, Nevada; approximately 12.5 miles northeast of Lages Junction, Nevada; about 1,200 feet south and 1,000 feet west of the northeast corner of section 4, T.26 N., R.66 E.; (40 degrees, 09 minutes, 36 seconds north latitude and 114 degrees, 31 minutes, 34 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, but is moist in some part more than 25 to 35 percent of the time the soil temperature is above 4l degrees F. It is dry in all parts for 45 to 60 consecutive days following the summer solstice.
Soil temperature: 47 to 53 degrees F.
Depth to bedrock: 10 to 20 inches.
Depth to the calcic horizon: 2 to 11 inches.
Control section:
Clay content--18 to 27.
Rock fragments--35 to 60 percent.

A horizon:
Value--5 to 7 dry and 4 or 5 moist.
Chroma--2 or 3.
Reaction--Moderately alkaline or strongly alkaline.

Bk horizons:
Value--6 or 7 dry, and 4 or 5 moist.
Chroma--3 or 4.
Effervescence--Slightly effervescent to violently effervescent.
Reaction--Moderately alkaline or strongly alkaline.

Tecomar Series

The Tecomar series consists of shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Tecomar soils are on hills and mountains. Slopes

are 8 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 45 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xerollic Calciorthids

Typical pedon: Tecomar extremely gravelly loam, located in an area of map unit 1430. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent pebbles, 5 percent cobbles, and 1 percent stones.

A--0 to 2 inches; light brownish gray (10YR 6/2) extremely gravelly loam, brown (10YR 4/3) moist strong very thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine, fine and medium vesicular pores; 55 percent pebbles, 5 percent cobbles, and 1 percent stones; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bk1--2 to 6 inches; very pale brown (10YR 7/3) very cobbly silt loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine interstitial pores; 10 percent pebbles, 40 percent cobbles, and 1 percent stones; thin lime pendants on undersides of rock fragments; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk2--6 to 14 inches; very pale brown (10YR 7/4) extremely cobbly silt loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine interstitial pores; 30 percent pebbles, 40 percent cobbles, and 1 percent stones; thick lime pendants on undersides of rock fragments; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

R--14 inches; hard limestone.

Type location: Elko County, Nevada; approximately 9 miles west of Wendover in the Toano Range; located in an unsectionized area about 400 feet south and 1,400 feet west of the projected northeast corner of section 18, T.33 N., R.69 ; (40 degrees, 44 minutes, 23 seconds north latitude and 114 degrees, 12 minutes, 44 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry June through October.

Soil temperature: 47 to 52 degrees F.
Depth to bedrock: 10 to 20 inches.
Depth to calcic horizon: 2 to 14 inches.
Reaction: Moderately alkaline or strongly alkaline.
Control section:
Clay content--20 to 27 percent.
Rock fragments--50 to 80 percent, mainly pebbles, cobbles and some stones.
Calcium carbonate equivalent--40 to 60 percent by weight of the less than 20 millimeters fraction.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

Bk horizons:
Value--6 through 8 dry, 4 through 7 moist.
Chroma--3 or 4.
Structure--Subangular block or it is massive.
Consistence--Soft or slightly hard dry, slightly sticky to sticky, moist; slightly plastic to plastic, wet.

Theriot Series

The Theriot series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from limestone. Theriot soils are on hills. Slopes are 8 to 50 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 cobbly fine sandy loam located in an area of map unit 1532. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 50 percent pebbles, 25 percent cobbles, and 1 percent stones.

A--0 to 3 inches; light gray (10YR 7/2) cobbly fine sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many interstitial and common very fine vesicular pores; common less then 1 millimeter thick lime coats on undersides of rock fragments; 15 percent pebbles and 15 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C1--3 to 8 inches; very pale brown (10YR 7/3) very gravelly fine sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and few medium roots; many interstitial and very fine

tubular pores; few thin lime coats and pendants on undersides of rock fragments; 35 percent pebbles and 15 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C2--8 to 15 inches; very pale brown (10YR 7/3) very cobbly fine sandy loam, brown (10YR 5/3) 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 interstitial and tubular pores; common 2 to 3 millimeter thick lime coats and pendants on undersides of rock fragments; 25 percent pebbles and 30 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); abrupt irregular boundary.

R--15 inches; limestone.

Type location: Elko County, Nevada; approximately 24 miles south of Wendover; about 300 feet south and 800 feet west of the northeast corner of section 8, T.29 N., R.70 E.; (40 degrees, 24 minutes, 20 seconds north latitude and 114 degrees, 05 minutes, 25 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days in the upper part in the summer due to convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to bedrock: 4 to 20 inches.

Control section:

Clay content--10 to 20 percent

Rock fragments--50 to 80 percent; dominantly stones or cobbles, but is mostly pebbles in some pedons.

Reaction--Moderately alkaline to very strongly alkaline.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

C horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Structure--Platy or subangular blocky or is massive.

Consistence--Soft or slightly hard, dry very friable or friable moist.

Texture--Loam, fine sandy loam, or sandy loam.

Carbonates--Thin to thick lime pendants on rock fragments are common in the lower part. Thin noncemented or cemented Bk horizons cap the bedrock in some pedons.

Calcium carbonate equivalent--40 to 60 percent

Threesee Series

Threesee series consists of very deep, well drained soils that formed in reworked mixed alluvium. Threesee soils are on beach plains and beach bars. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual air temperature is about 47 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Xerollic Calciorthids

Typical pedon: Threesee gravelly loam, in an area of map unit 1460. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) gravelly loam, dark brown (10YR 4/3) moist; moderately coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine interstitial pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw1--3 to 9 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; soft, very friable slightly sticky and slightly plastic; many very fine, fine and few medium roots; few very fine interstitial and few fine tubular pores; 10 percent calcium carbonate equivalent; 15 percent pebbles; few thin lime coats on rock fragments; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw2--9 to 14 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine to medium and few coarse roots; few very fine interstitial and tubular pores; 12 percent calcium carbonate equivalent; 15 percent pebbles; few thin lime coats on pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Bk--14 to 24 inches; light gray (10YR 7/2) very gravelly loamy sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine to medium roots; few very fine tubular and interstitial pores; continuous weak lime cementation; 20 percent calcium carbonate equivalent; 35 percent pebbles; many thin lime coats on pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Bkq1--24 to 46 inches; light gray (10YR 7/2) very gravelly loamy sand, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine to medium roots; 50 percent discontinuous weak lime and silica cementation, slightly hard and friable; 20 percent calcium carbonate equivalent; 50 percent pebbles; common thin lime coats on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

3Bkq2--46 to 54 inches; variegated stratified coarse sand to very gravelly coarse sand; massive; soft, very friable, nonsticky and nonplastic; 10 percent discontinuous weak lime and silica cementation; 30 percent calcium carbonate equivalent; 40 percent pebbles; common thin lime coats on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

3C--54 to 60 inches; variegated stratified coarse sand to very gravelly coarse sand; massive; soft, very friable, nonsticky and nonplastic; 5 percent discontinuous weak lime and silica cementation; 18 percent calcium carbonate equivalent; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 13 miles south of Highway 229 on the CCC Road in Ruby Valley, about 2,900 feet west and 475 feet north of the southeast corner of section 8, T.30 N., R.61 E.; (40 degrees, 29 minutes, 20 seconds north latitude and 115 degrees, 07 minutes, 06 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist late fall and early spring, dry late spring through mid fall.
Soil temperature: 47 to 52 degrees F.
Depth to calcic horizons: 14 to 20 inches.
Control section:
Clay content--Averages 4 to 10 percent.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Calcium carbonate equivalent--(Less than 2 millimeter fraction) 1 to 10 percent.

Bw horizons:
Value--6 or 7 dry, 3 or 4 moist.
Chroma--2 or 3.
Clay content--10 to 18 percent.
Texture--Loam or sandy loam.
Rock fragments--15 to 35 percent.
Consistence--Soft or slightly hard dry, slightly sticky to nonsticky wet.
Calcium carbonate equivalent--(Less than 2 millimeter fraction) 10 to 20 percent.

Bk horizons:
Value--6 or 7 dry, subhorizons are variegated.
Chroma--2 or 3.
Clay content--4 to 10 percent.
Texture--Loamy sand; subhorizons of coarse sand are in most pedons.
Rock fragments--35 to 55 percent.
Consistence--Soft or slightly hard dry.
Calcium carbonate equivalent--(Less than 2 millimeter fraction) 20 to 30 percent.
Other features--Subhorizons are continuously weakly lime cemented.

3C horizon:
Calcium carbonate equivalent--(Less than 2 millimeter fraction) 10 to 20 percent.

Timpie Series

The Timpie series consists of very deep, well drained, soils that formed in alluvium and lacustrine sediments derived dominantly from limestone and quartzite. Timpie soils are on lake plains, beach plains, and alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Timpie silt loam located in an area of map unit 845. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 4/3) moist; strong thick platy structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine vesicular and few very fine, fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

A2--2 to 8 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine, fine and medium tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bw1--8 to 19 inches; very pale brown (10YR 7/4) silt loam,

dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bw2--19 to 30 inches; very pale brown (10YR 7/3) silt loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

C--30 to 60 inches; very pale brown (10YR 7/4) silt loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Type location: Elko County, Nevada; approximately 10 miles southwest of White Horse Pass in the Antelope Valley; about 250 feet north and 100 feet west of the southeast corner of section 6, T.27 N., R.68 E.; (40 degrees, 14 minutes, 00 seconds north latitude and 114 degrees, 20 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry more than 75 percent of the time when the soil temperature is above 41 degrees F. They are moist for fewer than 10 days between July and October.

Soil temperature: 49 to 54 degrees F.

Control section:

Clay content--18 to 27 percent clay with less than 15 percent fine sand or coarser.

Calcium carbonate equivalent--15 to 40 percent.

A horizons:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Moderately alkaline to very strongly alkaline.

Electrical conductivity--Less than 8 millimhos/cm.

Bw and C horizons:

Value--6 or 7 dry, 4 to 6 moist.

Chroma--2 through 4.

Texture--Silt loam or very fine sandy loam.

Reaction--Strongly alkaline or very strongly alkaline.

Electrical conductivity--4 to greater than 16 millimhos/cm.

Toano Series

The Toano series consists of very deep, well drained soils that formed in silty alluvium with a component of loess and volcanic ash. Toano soils are on fan skirts, inset fans, and lagoons. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Toano very fine sandy loam, located in an area of map unit 171. (Colors are for dry soil unless otherwise noted.)

A1--0 to 3 inches; light gray (10YR 7/2) very fine sandy loam, brown (10YR 5/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine vesicular pores; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

A2--3 to 9 inches; very pale brown (10YR 7/3) very fine sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

Bw--9 to 19 inches; very pale brown (10YR 7/3) silt loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 3 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C1--19 to 27 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine interstitial pores; 3 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C2--27 to 38 inches; light gray (10YR 7/2) very fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few medium roots; common very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C3--38 to 60 inches; white (10YR 8/2) silt loam, light gray (2.5Y 7/2) moist; common medium distinct mottles of yellowish brown (10YR 5/6); moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.4).

Type location: Elko County, Nevada; approximately 7 miles northwest of Wendover; located in an unsectionized area about 1,500 feet south and 900 feet east of the projected northwest corner of section 26, T.34 N., R.69 E.; (40 degrees, 47 minutes, 41 seconds north latitude and 114 degrees, 08 minutes, 49 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry; moist for short periods in winter and spring, dry late May through November.
Soil temperature: 53 to 59 degrees F.
Control section:
Clay content--8 to 15 percent.
Rock fragments--Less than 5 percent in any subhorizon.
Reaction--Moderately alkaline or strongly alkaline.
Calcium carbonate equivalent--10 to 30 percent.

A horizons:
Hue--2.5Y or 10YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Effervescence--Strongly effervescent or violently effervescent.

Bw horizon:
Hue--2.5Y or 10YR.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 through 4.
Texture--Silt loam or very fine sandy loam.
Structure--Medium or coarse subangular blocky.
Consistence--Soft or slightly hard dry.

C horizons:
Hue--2.5Y or 10YR.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 or 3.
Structure--Massive or platy.
Consistence--Soft or slightly hard dry, nonsticky or slightly sticky and nonplastic or slightly plastic wet.
Other features--Some pedons have stratified extremely gravelly sandy loam to extremely gravelly sand below 40 inches. Some pedons have relict mottles in the lower C horizon.

Toba Series

The Toba series consists of very deep, poorly drained soils that formed in mixed loamy alluvium over lacustrine sands. Toba soils are on axial stream floodplains. Slopes are 0 to 2 percent. The mean annual precipitation is about 8 inches and the mean annual air temperature is about 47 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, mesic Aquic Calciorthids

Typical pedon: Toba loam, in an area of map unit 1380. (Colors are for dry soil unless otherwise noted.)

A--0 to 4 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; moderate medium and thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common fine tubular pores; strongly effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.
Bk1--4 to 14 inches; white (5Y 8/1) clay loam, light gray (5Y 7/2) moist; few to common dark gray (10YR 4/1) fine and medium organic stains in root channels and on faces of peds tonging from above; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium roots; common fine tubular and interstitial pores; violently effervescent; 5 percent fine and medium slightly hard lime and silica nodules; strongly alkaline (pH 8.8); clear smooth boundary.
2Bk2--14 to 23 inches; light gray (5Y 7/2) loamy fine sand, light olive gray (5Y 6/2) moist; few to common dark olive gray (5Y 3/2) organic stains; tonguing from above; few fine distinct olive yellow (2.5Y 6/6) iron mottles; massive; slightly hard, friable, nonsticky and nonplastic; common fine and medium roots; common fine interstitial pores; strongly effervescent; common fine and medium white (5Y 8/2) lime filaments and threads with few fine soft lime masses; strongly effervescent; strongly alkaline (pH 8.7); clear wavy boundary.
2Bk3--23 to 34 inches; light gray (5Y 7/2) fine sand, olive gray (5Y 5/2) moist; few fine distinct olive yellow (2.5Y 6/6) mottles and manganese stains; massive; soft; very friable, nonsticky and nonplastic; common fine and medium interstitial pores; 15 percent fine and medium lime and silica nodules; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
2Bk4--34 to 60 inches; light gray (5Y 7/2) sand, olive gray (5Y 5/3) moist; few fine distinct dark gray (5Y 4/1) mottles; single grain; loose, nonsticky and nonplastic; common fine and medium interstitial pores; slightly effervescent; few fine and medium lime and silica nodules; moderately alkaline (pH 8.0).

Type location: Elko County, Nevada; about 18 miles south of Wells in Clover Valley; in an unsectionized area; approximately 2,400 feet north of Bapt Reservoir; about 1,900 feet north and 200 feet west of the

projected southeast corner of section 21, T.34 N., R.63 E.; (40 degrees, 48 minutes, 45 seconds north latitude and 114 degrees, 51 minutes, 10 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated below depths of 18 to 24 inches for one month during most years mainly during late winter and early spring. The moisture control section is dry from late May through October in most years. Drained phases are recognized.
Soil temperature: 47 to 52 degrees F.
Depth to contrasting horizon: 12 to 25 inches.
Control section:
Clay content--20 to 40 percent in the upper part and less than 5 percent in the lower part.

A horizon:
Hue--10YR, 2.5Y or 5Y.
Value--2 through 4 dry.
Chroma--1 or 2.

Bk1 horizon:
Hue--2.5 Y, 5Y or 10YR.
Value--7 or 8 dry, 5 through 7 moist.
Chroma--1 through 3.
SAR--15 to 35.
Other features--Few to common organic stains along root channels tonguing from A horizon.

2Bk horizons:
Value--6 or 7 dry, 4 through 7 moist.
Structure--Massive or single grain.
Consistence--Loose to slightly hard dry, loose to friable moist.
Chroma--2 through 4.
Mottles--Few fine distinct redoximorphic concentrations from 14 to 60 inches.
Effervescence--Noneffervescent to strongly effervescent.
Other features--Lacustrine silts and clays may occur in some thin strata below 40 inches in some pedons. A few strata may have up to 30 percent pebbles in some pedons. Few to common lime and silica nodules are common. Few to common organic stains in upper subhorizons tonguing from A horizon.

Tooele Series

The Tooele series consists of very deep, well drained, moderately rapid permeable soils that formed in mixed alluvium and lacustrine sediments. Tooele soils are on fan skirts and lake plains. Slopes are 2 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Tooele sandy loam in an area of map unit 130. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 25 percent pebbles.

A--0 to 5 inches; light gray (10YR 7/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure parting to strong thin platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and few medium roots; many very fine interstitial and common fine vesicular pores; 5 percent pebbles; violently effervescent; very strongly alkaline (pH 9.3) clear smooth boundary.
C1--5 to 8 inches; very pale brown (10YR 7/3) fine sandy loam, dark brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; common very fine interstitial pores; 1 percent pebbles; violently effervescent; very strongly alkaline (pH 9.3); clear wavy boundary.
C2--8 to 19 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium and coarse roots; common very fine interstitial pores; 2 percent pebbles; violently effervescent; very strongly alkaline (pH 9.3); gradual wavy boundary.
C3--19 to 32 inches; light gray (2.5Y 7/2) fine sandy loam, grayish brown (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and medium roots; common very fine interstitial pores; 3 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.
C4--32 to 44 inches; light gray (2.5Y 7/2) fine sandy loam, grayish brown (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and medium roots; common very fine interstitial pores; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.
2C1--44 to 60 inches; light gray (2.5Y 7/2) stratified sandy loam to silt loam, dark grayish brown (2.5Y 4/2) moist;

moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and common fine interstitial pores; 5 percent pebbles; strongly alkaline (pH 8.5).

Type location: Elko County, Nevada; approximately 3 miles northwest of the Cummings Ranch; located in an unsectionized area 8,600 feet north and 1,300 feet east of the northwest corner of section 4, T.35 N., R.69 E.; (40 degrees, 58 minutes, 25 seconds north latitude and 114 degrees, 11 minutes, 04 seconds west longitude.)

Range in characteristics:

Soil temperature: 47 to 52 degrees F.
Soil moisture: Dry in all parts of the moisture control section more than 3/4 of the time that the soil temperature is above 41 degrees F.
Control section:
Texture--Fine sandy loam.
Calcium carbonate equivalent--10 to 40 percent.
Clay content--2 to 18 percent.
Exchangeable sodium--15 to 35 percent.
Rock fragments--0 to 15 percent throughout the profile.
Reaction--Moderately alkaline to very strongly alkaline throughout.

A horizon:
Value--6 or 7 dry, 4 to 6 moist.
Chroma--2 through 4.

C horizon:
Value--6 or 7 dry, 4 to 6 moist.
Chroma--2 to 4.
Texture--Loam, fine sandy loam, or sandy loam. Some pedons are loamy fine sand, fine sand, sand, medium or coarse sand in the lower part of the C horizon.
Clay content--2 to 18 percent.
Electrical conductivity--4 to 16 mmhos/cm.

Tosser Series

The Tosser series consists of very deep, well drained soils that formed in mixed alluvium. Tosser soils are on beach bars, offshore bars, barrier bars, and beach terraces. Slopes are 2 to 8 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Xerollic Calciorthids

Typical pedon: Tosser very gravelly sandy loam, in an area of map unit 1460. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 70 percent pebbles.

A1--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, brown (10YR 4/3) moist; moderate coarse platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine vesicular pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
A2--2 to 10 inches; pale brown (10YR 6/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist, moderate medium subangular blocky structure; slightly hard, very friable slightly sticky and slightly plastic; few very fine, fine and medium roots; common very fine and fine tubular pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
Bkq1--10 to 16 inches; pale brown (10YR 6/3) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; hard, firm, nonsticky and nonplastic; few very fine roots; many interstitial pores; many thick lime and silica pendants on undersides of pebbles; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.5); abrupt smooth boundary.
Bkq2--16 to 26 inches; pale brown (10YR 6/3) extremely gravelly sand, yellowish brown (10YR 5/4) moist; loose; nonsticky and nonplastic; few very fine and fine roots; many interstitial pores; coated with lime with thick lime and silica pendants on the undersides of pebbles; 70 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
Bkq3--26 to 60 inches; pale brown (10YR 6/3) very gravelly sand, yellowish brown (10YR 5/4) moist; loose, nonsticky and nonplastic; few very fine and fine roots; many interstitial pores; coated with lime with thick lime and silica pendants on undersides of pebbles; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 15 miles northwest of Odgers Ranch; about 1,100 feet north and 2,100 feet east of the southwest corner of section 8, T.30 N., R.61 E.; (40 degrees, 29 minutes, 26 seconds north latitude and 115 degrees, 07 minutes, 10 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in some parts 25 to 35 percent of the time. The soil temperature at 20 inches is above 41 degrees F. It is dry in all parts for 45 to 60 consecutive days following the summer solstice.

Soil temperature: 50 to 53 degrees F.
Rock fragments--35 to 75 percent
Clay content--2 to 8 percent in the particle-size control section.
Depth to calcic horizon--7 to 12 inches.

A horizons:
Value--6 or 7 dry, 4 to 5 moist.
Chroma--2 through 4.
Reaction--Moderately alkaline to strongly alkaline.

B horizons:
Hue--10YR or 2.5Y
Value--5 or 6 dry and 4 or 5 moist
Chroma--2 through 4.
Texture--Loamy sand or sand.
Reaction--Moderately alkaline to very strongly alkaline and slightly effervescent to violently effervescent.
Other features--Some pedons are stratified in the lower part of the particle-size control section. Some pedons have subhorizons of very gravelly loam.

Tulase Series

The Tulase series consists of very deep, well drained soils that formed in silty alluvium with a component of loess and volcanic ash. Tulase soils are on inset fans and fan skirts. Slopes are 2 to 8 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Durorthidic Xeric Torriorthents

Typical pedon: Tulase very fine sandy loam located in an area of map unit 700. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 5 percent pebbles.

A--0 to 2 inches; light brownish gray (10YR 6/2) very fine sandy loam, brown (10YR 4/3) moist; strong thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine, fine vesicular and few very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

C--2 to 6 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; strong coarse angular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine tubular and vesicular pores; 5 percent 2 to 5 millimeter pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Cq--6 to 14 inches; light gray (10YR 7/2) very fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine, fine, medium and few coarse roots; few very fine tubular pores; 20 percent irregular-shaped durinodes; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Ckq1--14 to 20 inches; very pale brown (10YR 7/3) very fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, nonsticky and slightly plastic; common very fine, fine and few medium roots; few very fine vesicular and tubular pores; 50 percent discontinuous weak silica cementation; few fine lime filaments; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Ckq2--20 to 60 inches; very pale brown (10YR 8/3) very fine sandy loam, light yellowish brown (10YR 6/4) moist; common medium distinct pink (7.5 YR 7/4) mottles, reddish yellow (7.5YR 6/6) moist; massive; hard, friable, nonsticky and nonplastic; few very fine, fine and medium roots; few very fine vesicular and tubular pores; 50 percent discontinuous weak silica cementation; few fine lime filaments; violently effervescent; moderately alkaline (pH 8.2).

Type location: Elko County, Nevada; approximately 21 miles northwest of Wendover, Nevada; in an unsectionized area 1 mile west and 1,200 feet south of the northwest corner of section 7, T.35 N., R.68 E.; (40 degrees, 55 minutes, 53 seconds north latitude and 114 degrees, 21 minutes, 42 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry late June through October.
Soil temperature: 47 to 52 degrees F.
Depth to Cq horizon: 11 to 35 inches.
Control section:
Rock fragments--0 to 5 percent pebbles.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

C horizon:
Value--6 or 7 dry, 4 or 5 moist.
Structure--Prismatic, massive, or angular blocky.
Consistence--Soft through hard, dry; very friable, nonsticky or slightly sticky, nonplastic or slightly plastic, wet.

Cq, Ckq horizons:
Value--7 or 8 dry, 5 or 6 moist.
Chroma--2 through 4.
Structure--Massive or subangular blocky.
Texture--Silt loam or very fine sandy loam.
Consistence--Soft through hard, dry; very friable or friable, moist; nonsticky or slightly sticky, nonplastic or slightly plastic, wet.
Silica cementation--20 to 50 percent durinodes or up to 50 percent discontinuous silica-lime cementation is common in most Ckq horizons.

Tusel Series

The Tusel series consists of deep and very deep well drained soils that formed in residuum and colluvium from quartzite. Tusel soils are on mountain side slopes. Slopes are 15 to 75 percent. The mean annual precipitation is about 17 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Loamy-skeletal, mixed Argic Pachic Cryoborolls

Typical pedon: Tusel gravelly loam is located in Elko County, Nevada, Central Part map unit 1729. (Colors are for dry soil unless otherwise noted.)

A1--0 to 10 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine interstitial pores; 15 percent pebbles and 5 percent cobbles; neutral (pH 6.8); gradual wavy boundary.
A2--10 to 19 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores and common fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral (pH 6.8); clear wavy boundary.
2Bt1--19 to 28 inches; pale brown (10YR 6/3) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular structure; slightly hard, friable, sticky and plastic; common very fine and few fine and medium roots; common very fine and few fine tubular pores; few thin clay films on faces of peds and lining pores; 40 percent pebbles and 10 percent cobbles; neutral (pH 6.7); clear wavy boundary.
2Bt2--28 to 45 inches; pale brown (10YR 6/3) very gravelly clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; common very fine tubular pores; common moderately thick clay films on faces of peds and lining pores; 40 percent pebbles and 15 percent cobbles; neutral (pH 6.7); abrupt irregular boundary.
2R--45 inches; quartzite bedrock.

Type location: Elko County, Nevada; approximately 26 miles southwest of Elko; about 2,000 feet north and 2,000 feet west of the southeast corner of section 26, T.30 N., R.53 E.; (40 degrees, 27 minutes, 08 seconds north latitude and 115 degrees, 58 minutes, 25 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist in the late fall through early summer, dry late July through September.
Soil temperature: 43 to 47 degrees F.
Summer soil temperature: 58 to 59 degrees F.
Depth to bedrock: 40 to over 80 inches.
Depth to base of Bt horizon: 36 to over 50 inches.
Mollic epipedon thickness: 16 to 22 inches, includes the upper argillic horizon of some pedons.
Control section:
Clay content--25 to 35 percent.
Rock fragments--50 to 75 percent, mainly pebbles.
Reaction--Slightly acid or neutral.

A horizon:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:
Hue--10YR or 7.5YR.
Value--4 through 6 dry, 3 or 4 moist.
Chroma--2 through 4.
Texture--Sandy clay loam or clay loam, with 40 to 60 percent sand.
Clay content--25 to 35 percent, when averaged.
Rock fragments--40 to 60 percent pebbles, 10 to 25 percent cobbles, and 0 to 10 percent stones
Consistence--Slightly sticky or sticky and slightly plastic or plastic
Structure--Weak to strong subangular blocky or angular blocky. Some pedons have lower subhorizons that are massive.

Umberland Series

The Umberland series consists of very deep, somewhat poorly drained soils that formed in lacustrine sediments. Umberland 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 49 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Aeric Halaquepts

Typical pedon: Umberland silty clay located in an area of map unit 761. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light gray (5Y 7/1) silty clay, gray (5Y 6/1) moist; strong medium prismatic structure parting to strong medium granular structure; hard, firm, sticky and plastic; few very fine roots; many very fine tubular and vesicular pores; violently effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

A2--2 to 5 inches; light gray (5Y 7/1) silty clay loam, olive gray (5Y 5/2) moist; weak medium prismatic structure parting to strong medium granular; slightly hard, very friable, sticky and plastic; common very fine roots; many very fine tubular and vesicular pores; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.

C1--5 to 15 inches; pale olive (5Y 6/3) silty clay, pale olive (5Y 6/3) moist; strong coarse prismatic structure; hard, firm, sticky and very plastic; common very fine and few fine roots; common very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

C2--15 to 24 inches; white (5Y 8/1) silty clay loam, light olive gray (5Y 6/2) moist; strong coarse prismatic structure; hard, firm, sticky and plastic; few very fine roots; many very fine tubular pores; few fine faint light olive brown (2.5Y 5/6) mottles; few lime nodules; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Ck1--24 to 43 inches; white (5Y 8/1) silty clay, light olive gray (5Y 6/2) moist; massive; hard, firm, sticky and very plastic; few very fine roots; common very fine tubular pores; common fine light olive brown (2.5Y 5/6) and few fine dark olive gray (5Y 3/2) mottles; few lime nodules; strongly effervescent; very strongly alkaline (pH 9.4); clear wavy boundary.

Ck2--43 to 60 inches; white (5Y 8/1) silty clay, light olive gray (5Y 6/2) moist; massive; hard, firm, sticky and plastic; common very fine tubular pores; common fine and medium light olive brown (2.5Y 5/6) mottles; strongly effervescent; strongly alkaline (pH 9.0).

Type location: Elko County, Nevada; approximately 10 miles northeast of the Ruby Lake National Wildlife Refuge Headquarters; about 1,200 feet north and 4,000 feet west of the southeast corner of sec 11, T.28 N., R.58 E.; (40 degrees, 19 minutes, 05 seconds north latitude and 115 degrees, 24 minutes, 29 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated in some horizons between depths of 20 to 40 inches for at least a month during most years and the capillary fringe moistens the soil to within 6 inches of the surface.

Soil temperature: 47 to 52 degrees F.

Depth to secondary carbonates: 15 to 35 inches. They occur as concretions or nodules.

Salt and sodium: These soils are strongly saline-alkali affected in the upper profile with concentrations usually decreasing with depth.

Control section:
Clay content--35 to 50 percent.

A horizons:
Hue--10YR, 2.5Y or 5Y.
Value--6 through 8 dry, 4 through 6 moist.
Chroma--1 through 4.

C and Ck horizons:
Hue--2.5Y or 5Y.
Value--6 through 8 dry, 4 through 6 moist.
Chroma--1 through 4
Texture--Silty clay loam or silty clay. Some pedons have strata of clay.
Structure--Granular, massive, subangular blocky, angular blocky or prismatic, slightly hard or hard, very friable to firm moist, sticky or very sticky and plastic or very plastic.
Reaction--Strongly alkaline or very strongly alkaline, usually decreasing with depth.

Upatad Series

The Upatad series consists of shallow, well drained soils that formed in residuum and colluvium from rhyolite. Upatad soils are on hills and mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Argixerolls

Typical pedon: Upatad very gravelly silt loam located in an area of map unit 1191. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent pebbles

A--0 to 2 inches; grayish brown (10YR 5/2) very gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; 35 percent pebbles; common very fine and fine roots; common fine vesicular pores; mildly alkaline (pH 7.8); abrupt smooth boundary.

Btq--2 to 8 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine, few medium roots; many very fine tubular pores; 35 percent pebbles and 10 percent cobbles; 10 percent hard and firm durinodes; few thin clay films on faces of peds and lining pores; mildly alkaline (pH 7.8); clear smooth boundary.

2Btqk--8 to 14 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine, fine and medium roots; many very fine tubular pores; few thin clay films on faces of peds and lining pores; common 2 millimeter lime and silica coats on undersides of rock fragments; 35 percent pebbles and 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

2R--14 inches; rhyolite.

Type location: Elko County, Nevada; approximately 8 miles northwest of Wildcat Peak in the Goshute Mountain Range; 2,600 feet north and 100 feet west of the southeast corner of section 26, T.32 N., R.68 E.; (40 degrees, 37 minutes, 03 seconds north latitude and 114 degrees, 14 minutes, 46 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall. (Aridic)

Soil temperature: 47 to 52 degrees F.

Depth to bedrock: 14 to 20 inches.

Mollic epipedon thickness: 8 to 16 inches, includes the upper part of the argillic horizon.

Reaction: Mildly alkaline to moderately alkaline.

Control section:

Clay content--27 to 35 percent.

Rock fragments--35 to 60 percent, of which 20 to 50 percent are pebbles and 10 to 40 percent are cobbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Btq horizon:

Structure--Weak to moderate, fine to medium angular or subangular blocky.

Concretions--5 to 15 percent fine to coarse, irregular silica concretions.

2Btqk horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Structure--Weak to moderate, fine to medium subangular blocky.

Other features--Many thin to thick lime and silica pendants on undersides of rock fragments. Few to common, fine to medium, soft masses of lime on undersides of rock fragments.

Urmafot Series

The Urmafot series consists of well drained soils that are shallow to a duripan that formed in mixed alluvium. Urmafot soils are on fan piedmont remnants. Slopes are 2 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Orthidic Durixerolls

Typical pedon: Urmafot gravelly loam, located in an area of map unit 550. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with approximately 40 percent pebbles.

A1--0 to 2 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine vesicular pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2--2 to 4 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A3--4 to 7 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 15 percent pebbles; violently

effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk--7 to 11 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; common thin lime pendants on undersides of rock fragments; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bqk--11 to 16 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 20 percent discontinuous strong silica cementation that is very hard and very firm; common thin lime pendants on undersides of pebbles; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
2Bqkm--16 to 29 inches; white (10YR 8/1) fractured duripan, very pale brown (10YR 7/3) moist; massive; extremely hard, extremely firm; few very fine roots; common very fine tubular pores; violently effervescent; clear wavy boundary.
3Bqk--29 to 60 inches; extremely gravelly coarse sandy loam light brown (7.5YR 6/4) and brown (7.5YR 5/4 moist; pink (7.5YR 7/4) and light brown (7.5YR 6/4) and 30 percent light brown (7.5YR 6/4), brown (7.5YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; 70 percent discontinuous strong silica cementation; 55 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Type location: Elko County, Nevada; approximately 20 miles southwest of Currie in Butte Valley, about 800 feet east and 1,000 feet north of the projected southwest corner of section 29, T.27 N., R.61 E.; (40 degrees, 11 minutes, 03 seconds north latitude and 115 degrees, 07 minutes, 38 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry summer through mid fall.
Soil temperature: 47 to 52 degrees F.
Depth to duripan: 9 to 20 inches.
Mollic epipedon thickness: 7 to 12 inches.
Control section:
Clay content--18 to 27 percent.
Rock fragments--15 to 35 percent.
Other features--Some pedons have thin subhorizons that have up to 20 percent strong silica cementation above the pan.

A horizons:
Value--5 or 6 dry, 3 or 4 moist. Averages after mixing values less than 5.5 dry and 3.5 moist.
Chroma--2 or 3.

Bk horizon:
Chroma--3 or 4.

3Bqk horizon:
Hue--10YR or 7.5YR.
Value--6 or 7 dry, 5 or 6 moist.
Chroma--3 or 4.
Clay content--5 to 15 percent.
Consistence--Hard or very hard, firm or very firm moist.
Rock fragments--55 to 80 percent pebbles and 5 to 25 percent cobbles with less than 5 percent stones.
Other features--50 to 70 percent discontinuous silica and lime cementation.

Uvada Series

The Uvada series consists of very deep, well or moderately well drained soils that formed in lacustrine sediments. Uvada soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Typic Natrargids

Typical pedon: Uvada silty clay loam located in an area of map unit 1271. (Colors are for dry soil unless otherwise noted.)

A1--0 to 3 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate medium platy structure parting to very thin platy; slightly hard, very friable, sticky and plastic; few very fine roots; many very fine and fine vesicular pores; violently effervescent (5 percent calcium carbonate equivalent); SAR 5; strongly alkaline (pH 8.6); clear smooth boundary.
A2--3 to 5 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate medium platy structure; soft, very friable, sticky and plastic; few very fine roots; many very fine and fine vesicular pores; violently effervescent (7 percent calcium carbonate

equivalent); SAR 5; strongly alkaline (pH 8.8); clear smooth boundary.

Btn1--5 to 8 inches; very pale brown (10YR 7/3) silty clay, yellowish brown (10YR 5/4) moist; moderate very fine angular blocky structure; slightly hard, very friable, very sticky and very plastic; many very fine and few fine and medium roots; many very fine tubular pores; light reddish brown (5YR 6/4) common moderately thick clay films on faces of peds and lining pores, reddish brown (5YR 5/4) moist; violently effervescent (20 percent calcium carbonate equivalent); SAR 23; very strongly alkaline (pH 9.2); clear smooth boundary.

Btn2--8 to 17 inches; pinkish gray (7.5YR 7/2) silty clay, brown (7.5YR 5/4) moist; moderate coarse prismatic structure parting to strong fine angular blocky structure; hard, friable, very sticky and very plastic; many very fine and common fine and medium roots; common very fine tubular pores; light reddish brown (5YR 6/4) common moderately thick clay films on faces of peds and lining pores, reddish brown (5YR 5/4) moist; violently effervescent (40 percent calcium carbonate equivalent); SAR 161; very strongly alkaline (pH 9.4); clear smooth boundary.

C1--17 to 34 inches; white (10YR 8/2) silty clay, light gray (2.5Y 7/2) moist; moderate coarse prismatic structure; slightly hard, very friable, very sticky and very plastic; few fine through very coarse roots; many very fine and fine and few medium and coarse tubular pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

C2--34 to 60 inches; white (2.5Y 8/2) stratified silty clay loam to silty clay, light brownish gray (2.5Y 6/2) moist; moderate coarse prismatic structure, parting to very fine angular blocky; slightly hard, very friable, very sticky and very plastic; common very fine and fine tubular pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Type location: Elko County, Nevada; approximately 5 miles southwest of Hogan Tunnel in the southern end of Independence Valley, about 1,000 feet west and 2,550 feet north of the southeast corner of section 25, T.33 N., R.64 E.; (40 degrees, 42 minutes, 34 seconds north latitude and 114 degrees, 41 minutes, 05 seconds west longitude.)

Range in characteristics:

Soil moisture: Dry in all parts of the moisture control section for 75 to 80 percent of the time the soil temperature is above 41 F.

Soil temperature: 49 to 56 F.

Control section:

Clay content--35 to 60 percent.
Depth to base of natric horizon--13 to 29 inches.
Salt content--0.3 to more than 2 percent in the profile.

A horizons:

Hue--10YR or 7.5YR.
Value--6 through 8 dry, and 4 through 6 moist,
Chroma--2 through 4.
Reaction--Strongly alkaline or very strongly alkaline.
SAR--5 to 40.

Btn horizons:

Hue--10YR or 7.5YR.
Value--5 through 7 dry, and 4 through 6 moist.
Chroma--2 through 6.
Texture--Silty clay loam or silty clay.
Structure--Moderate or strong, medium or coarse columnar or weak through strong prismatic or is angular blocky.
Reaction--Strongly alkaline or very strongly alkaline.
SAR--13 to 90.
Calcium carbonate equivalent--15 to 40 percent.

C horizons:

Hue--7.5YR through 2.5Y.
Value--6 through 8 dry, and 5 through 7 moist.
Chroma--2 through 4.
Texture--Statified silt loam, silty clay loam, or clay loam.
Structure--Massive or is weak to moderate prismatic parting to angular blocky.
Reaction--Moderately alkaline through very strongly alkaline.
SAR--30 to 90.
Calcium carbonate equivalent--10 to 40 percent.
Other features--Some pedons have stratified silty clay loam and silty clay. Sand and gravelly materials occur below 40 inches in some pedons.

Valmy Series

The Valmy series consists of very deep, well drained soils that formed in mixed alluvium with a loess mantle. Valmy soils are on fan skirts. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Torriorthents

Typical pedon: Valmy silt loam located in an area of map unit 211. (Colors are for dry soil unless otherwise noted.)

A--0 to 2 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine interstitial pores; violently effervescent; 5 percent pebbles; strongly alkaline (pH 8.6); abrupt smooth boundary.

C--2 to 9 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; many very fine and fine and few medium roots; many very fine interstitial pores; violently effervescent; 5 percent pebbles; very strongly alkaline (pH 9.6); clear smooth boundary.

Cqk1--9 to 21 inches; light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist; weak medium platy structure; hard, friable, nonsticky and nonplastic; common very fine, fine, and few medium roots; common very fine interstitial pores; 50 percent brittle durinodes; violently effervescent; 10 percent pebbles; very strongly alkaline (pH 9.6); clear smooth boundary.

Cqk2--21 to 30 inches; light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial pores; 25 percent brittle durinodes; violently effervescent; 10 percent pebbles; very strongly alkaline (pH 9.4); clear wavy boundary.

Cqk3--30 to 40 inches; light gray (10YR 7/2) gravelly fine sandy loam, grayish brown (10YR 5/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 15 percent brittle durinodes; violently effervescent; 30 percent pebbles; very strongly alkaline (pH 9.2); clear wavy boundary.

2C--40 to 60 inches; light gray (10YR 7/2) stratified very fine sandy loam to gravelly silt loam, grayish brown (10YR 5/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 5 percent brittle durinodes; violently effervescent; 15 percent pebbles; very strongly alkaline (pH 9.2)

Type location: Elko County, Nevada; approximately 1/2 mile southeast of Wells about 800 feet east and 260 feet south of the northwest corner of section 15 T.37 N., R.62 E.; (41 degrees, 05 minutes, 47 seconds north latitude and 114 degrees, 57 minutes, 40 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry from May through November. Aridic moisture regime.

Soil temperature: 47 to 53 degrees F.

Depth to Cq horizon: 6 to 20 inches. Durinodes range from 5 to 85 percent by volume in any one horizon but one or more horizons more than 6 inches thick contains more than 25 percent.

Depth to unconformity: 30 to 50 inches, with some pedons deeper than 50 inches to sandy material. Some pedons have a stratified substratum.

Control section:

Clay content--5 to 15 percent.

Rock fragments--0 to 30 percent, mainly pebbles.

A horizon:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 3 through 5 moist.

Reaction--Moderately alkaline or strongly alkaline.

C and Cqk horizons:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Mainly fine sandy loam or sandy loam, but includes strata of very fine sandy loam or coarse sandy loam in some pedons.

Durinodes--Hard to extremely hard, very friable to very firm and brittle, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Reaction--Strongly alkaline or very strongly alkaline.

Effervescence--Slightly effervescent to violently effervescent.

2C horizon:

Texture--Sand; substratum phases have textures of silty clay loam below 40 inches, or are stratified very fine sandy loam to gravelly silt loam.

Clay content--1 to 18 percent.

Structure--Single grain, massive or platy.

Consistence--Loose or slightly hard or hard dry, nonsticky or sticky wet.

Rock fragments--5 to 55 percent.

Reaction--Strongly alkaline or very strongly alkaline.

Wardbay Series

The Wardbay series consists of deep, well drained soils that formed in residuum and colluvium from limestone. Wardbay soils are on mountains. Slopes are 15 to 75

percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 40 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, frigid Pachic Calcixerolls

Typical pedon: Wardbay very gravelly loam located in an area of map unit 530. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 40 percent pebbles.

A1--0 to 6 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine to coarse roots; common very fine tubular pores; 35 percent pebbles; slightly effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

A2--6 to 14 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine to coarse roots; common very fine tubular pores; 35 percent pebbles and 10 percent cobbles; slightly effervescent; mildly alkaline (pH 7.4); clear smooth boundary.

Bk1--14 to 35 inches; brown (10YR 5/3) extremely cobbly silt loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine tubular pores; many thin lime pendants on undersides of rock fragments; 40 percent pebbles, 15 percent cobbles, and 10 percent stones; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk2--35 to 49 inches; pale brown (10YR 6/3) extremely cobbly silt loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; common thin lime pendants on undersides of rock fragments; many very fine and fine soft masses and filaments of lime; 40 percent pebbles, 20 percent cobbles, and 15 percent stones; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk3--49 to 55 inches; light yellowish brown (10YR 6/4) extremely cobbly silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine tubular pores; many thin lime pendants on undersides of rock fragments; many very fine soft masses and filaments of lime; 40 percent pebbles, 20 percent cobbles, and 15 percent stones; violently effervescent; mildly alkaline (pH 7.9).

2R--55 inches; limestone.

Type location: Elko County, Nevada; approximately 13 miles southwest of Currie, Nevada; 1,000 feet north and 2,600 feet east of the southwest corner of section 8, T.26 N., R.63 E.; (40 degrees, 08 minutes, 20 seconds north latitude and 114 degrees, 53 minutes, 32 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually moist, moist in winter and spring, dry summer and early fall.
Soil temperature: 42 to 47 degrees F.
Depth to bedrock: 40 to 60 inches.
Mollic epipedon: 35 to 60 inches thick.
Control section:
Clay content--18 to 27 percent.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 through 3.
Calcium carbonate equivalent--(less than 2 millimeter fraction) 40 to 60 percent.

Bk horizons:
Value--5 or 6 dry, 3 through 5 moist.
Calcium carbonate equivalent--(less than 2 millimeter fraction) 40 to 60 percent.
Texture--Loam or silt loam.
Structure--Massive or subangular blocky.
Consistence--Soft or slightly hard dry.
Rock fragments--60 to 85 percent, of which 35 to 60 percent are pebbles and 25 to 40 percent are cobbles and stones, dominantly cobbles.
Carbonates--Many thin to moderately thick lime pendants, or many thin to thick lime coats on undersides of rock fragments.

Welch Series

The Welch series consists of very deep, very poorly drained soils that formed in mixed alluvium with a component of pyroclastic materials. Welch soils are on fan skirts, flood plains, stream terraces, and inset fans. Slopes are 0 to 4 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 42 degrees F.

Taxonomic class: Fine-loamy, mixed, frigid Cumulic Endoaquolls

Typical pedon: Welch loam located in an area of map unit 1780. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 5 percent pebbles.

A1--0 to 3 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; weak very thick platy structure parting to strong fine platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, medium and few coarse roots; few very fine and fine interstitial pores; 5 percent pebbles; neutral (pH 6.8); clear wavy boundary.

A2--3 to 8 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; medium very coarse prismatic structure; hard, friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine and fine tubular and interstitial pores; 5 percent pebbles; neutral (pH 7.0); gradual smooth boundary.

A3--8 to 26 inches; very dark gray (10YR 3/1) clay loam, black (10YR 2/1) moist; strong very coarse prismatic structure parting to fine and medium prismatic structure; hard, friable, sticky and plastic; common very fine, fine and medium roots; common very fine and few fine interstitial and tubular pores; 5 percent pebbles; neutral (pH 7.3); gradual smooth boundary.

Cg1--26 to 33 inches; gray (5Y 6/1) loam, gray (5Y 5/1) moist; moderate medium prismatic structure; hard, friable, slightly sticky and slightly plastic; few fine, medium and very fine roots; many very fine, common fine and medium interstitial and tubular pores; 5 percent pebbles; mildly alkaline (pH 7.4); clear wavy boundary.

Cg2--33 to 45 inches; gray (10YR 6/1) gravelly loam, dark gray (10YR 4/1) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine interstitial pores; 25 percent pebbles; mildly alkaline (pH 7.6); clear wavy boundary.

Cg3--45 to 60 inches; light gray (5Y 7/1) very fine sandy loam, gray (5Y 5/1) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many fine, few fine and medium interstitial and tubular pores; common fine and medium distinct reddish yellow (5YR 6/6) iron mottles; mildly alkaline (pH 7.4).

Type location: Elko County, Nevada; approximately 2 1/4 miles southeast of the Ruby Valley Forest Service Station; about 800 feet north and 2,600 feet east of the southwest corner of section 22, T.33 N., R.60 E.; (40 degrees, 43 minutes, 18 seconds north latitude and 115 degrees, 11 minutes, 20 seconds west longitude.)

Range in characteristics:

Soil moisture: Welch soils are saturated and have aquic conditions at or near the surface for at least one month during most years, mainly during the late winter and early spring months, water table drops to a depth of 18 to 36 inches from early spring through September. Drained phases are recognized.

Soil temperature: 41 to 46 degrees F.

Mollic epipedon thickness: 26 to over 60 inches, organic matter decreases irregularly with depth.

Control section:

Clay content--27 to 35 percent, when mixed.

Mineralogy--Mixed, but the parent material has a large component of vitric pyroclastic materials.

Other features--Buried A horizons are common. Some pedons have gravelly strata or strata of silty clay loam, silt loam, clay, loam, very fine sandy loam or sandy loam.

A horizons:

Hue--10YR through 5Y or neutral.

Value--3 through 5 dry, 2 or 3 moist.

Chroma--0 through 3 in the upper part and 0 through 2 in the lower part.

Reaction--Slightly acid or neutral.

Other features--Some pedons have redoximorphic concentrations.

C horizons:

Hue--10YR through 5Y or neutral.

Value--5 through 8 dry, 3 through 5 moist.

Chroma--0 through 2.

Structure--Massive or prismatic.

Texture--Stratified dominantly sandy clay loam or clay loam.

Consistence--Slightly hard or hard dry, very friable or friable moist. Slightly sticky or sticky and slightly plastic or plastic.

Reaction--Slightly acid to mildly alkaline.

Mottles--Redoximorphic concentrations are common in many pedons.

Welsum Series

The Welsum series consists of very deep, very poorly drained soils that formed in mixed alluvium. Welsum soils are on fan skirts and areas of flood plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed (calcareous), frigid Cumulic Endoaquolls

Typical pedon: Welsum silt loam located in an area of map unit 1820. (Colors are for dry soil unless otherwise noted.)

A1--0 to 4 inches; gray (10YR 5/1) silt loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly hard, friable, sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
A2--4 to 11 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; strong thick platy structure; slightly hard, friable, sticky and slightly plastic; many very fine and fine roots; many very fine tubular pores; common fine distinct,brown (7.5YR 5/4) moist iron mottles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
A3--11 to 25 inches; grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; many very fine tubular pores; few fine distinct brown (7.5YR 5/4) moist iron mottles; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
2C--25 to 60 inches; pale brown (10YR 6/3) extremely gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; few thin lime coats on rock fragments; 55 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Type location: Elko County, Nevada; approximately 1 mile northwest of Welcome, Nevada; 800 feet south and 100 feet east of the northwest corner of section 8, T.37 N., R.61 E.; (41 degrees, 06 minutes, 42 seconds north latitude and 115 degrees, 07 minutes, 05 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated and aquic conditions at or near the surface for at least one month during most years, mainly during February though June.
Soil temperature: 43 to 47 degrees F.
Mollic epipedon thickness: 25 to 40 inches.
Reaction: Mildly alkaline or moderately alkaline.
Depth to contrasting textures: 25 to 40 inches.
Control section:
Clay content--Upper part averages 27 to 35 percent, the lower part averages 0 to 5 percent.
Texture--Upper part is silty clay loam or clay loam; the lower part is either extremely cobbly loamy sand, very cobbly sand or extremely gravelly sand.
Rock fragments--Upper part is 0 to 10 percent mainly pebbles, the lower part is 35 to 70 percent, mainly pebbles and cobbles.

A horizons:
Value--4 or 5 dry, 2 or 3 moist.
Chroma--1 or 2.
Other features--Strongly effervescent or violently effervescent in the upper subhorizons and slightly effervescent or noneffervescent in the lower subhorizons.

Wendane Series

The Wendane series consists of very deep, somewhat poorly drained soils that formed in mixed silty alluvium. Wendane soils are on lake plain terraces, stream terraces, and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Aeric Halaquepts

Typical pedon: Wendane silty clay loam located in an area of map unit 781. (Colors are for dry soils unless otherwise noted.)

A1--0 to 1 inch; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; strong very coarse platy structure parting to strong fine platy; slightly hard, very friable, very sticky and plastic; few very fine roots; many very fine vesicular and interstitial and common fine vesicular pores; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.
A2--1 to 3 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate coarse platy structure parting to moderate fine platy; slightly hard, very friable, very sticky and plastic; common very fine roots; many very fine and fine vesicular and interstitial pores; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.
A3--3 to 5 inches; very pale brown (10YR 7/3) silty clay loam, yellowish brown (10YR 5/4) moist; moderate coarse platy structure parting to moderate fine platy; hard, very friable, very sticky and plastic; many very fine and few fine roots; many very fine and fine vesicular and interstitial pores; violently effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.
A4--5 to 8 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; weak coarse platy

structure parting to moderate fine platy; hard, very friable, very sticky and plastic; many very fine, common fine and few medium roots; many very fine and fine vesicular and interstitial pores; violently effervescent; very strongly alkaline (pH 9.4); abrupt wavy boundary.

Cqk1--8 to 25 inches; very pale brown (10YR 7/3) silt loam; pale brown (10YR 6/3) moist; many medium faint yellow (10YR 7/6) mottles; weak medium prismatic structure parting to moderate medium angular blocky; hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; many very fine and fine vesicular and interstitial pores; 10 percent hard, firm 10 to 20 millimeter diameter durinodes; violently effervescent; very strongly alkaline (pH 9.4); clear wavy boundary.

Cqk2--25 to 42 inches; white (10YR 8/2) silt loam, grayish brown (10YR 5/2) moist; common medium faint yellow (10YR 7/6) mottles; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine, common fine and few medium vesicular and tubular pores; 30 percent discontinuous weak silica cementation, 30 percent hard, very firm 10 to 20 millimeter diameter durinodes; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Cqk3--42 to 50 inches; white (10YR 8/2) silt clay loam, brown (10YR 5/3) moist; common medium faint yellow (10YR 7/6) mottles; massive; slightly hard, very friable, sticky and plastic; few very fine, fine and medium roots; many very fine, common fine and few medium vesicular and tubular pores; 30 percent discontinuous weak silica cementation; 40 percent hard, firm 10 to 20 millimeter diameter durinodes; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Cqk4--50 to 61 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; common medium faint light brownish gray (2.5Y 6/2) mottles; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine, fine and medium vesicular and tubular pores; 40 percent hard, very firm 10 to 20 millimeter diameter durinodes; common fine lime filaments; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Elko county, Nevada; approximately 1/2 miles southwest of Currie, about 1,200 feet north and 800 feet west of the southeast corner of section 33, T.28 N., R.64 E.; (40 degrees, 15 minutes, 23 seconds north latitude, 114 degrees, 45 minutes, 10 seconds west longitude.)

Range in characteristics:

Soil moisture: Saturated within depths of 28 to 40 inches during the spring of most years. Dry mid-summer through mid-winter moist in mid-winter, spring, and early summer. Apparent seasonal water table is between 2.5 and 4 feet between February and July. Drained phases are recognized.

Soil temperature: 47 to 52 degrees F.

Mineralogy: Mixed, but has a strong influence from volcanic ash and other pyroclastic materials.

Depth to Cqk horizon: 8 to 20 inches.

Depth to redoximorphic concentrations: 8 to 27 inches.

Salts: These soils are normally strongly saline affected in their upper profile, and slightly to strongly affected in the lower profile.

Exchangeable sodium: 15 to 70 percent in half or more of the upper 20 inches and decreases with depth.

Reaction: Moderately alkaline through very strongly alkaline.

Other features: Unconformable stratified gravelly sand or very gravelly sand are common in some pedons below 40 inches. Some pedons have Cq horizons that are noneffervescent below 40 inches.

Control section:
Clay content--20 to 30 percent, when mixed.

A horizons:
Value--6 or 7 dry, 4 through 6 moist.
Chroma--1 through 4.
SAR--30 to 55.

Cqk horizons:
Hue--10YR or 2.5Y.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--1 through 4.
Texture--Stratified very fine sandy loam, silt loam, silty clay loam, and clay loam.
Structure--Thin platy or is massive. Prismatic parting to angular blocky in some subhorizons.
SAR--10 to 20.
Other features--Strata of volcanic ash that are 4 to 10 inches thick are common at some depth between 13 and 36 inches.
Thickness--13 to over 30 inches, when combined.
Cementation--10 to 40 percent weakly or strongly cemented durinodes in a friable matrix and up to 30 percent discontinuous weak silica cementation in any one horizon.

Wesfil Series

The Wesfil series consists of very shallow, well drained soils that formed in residuum and colluvium from andesite. Wesfil soils are on hills. Slopes are 2 to 50 inches. The

mean annual precipitation is bout 9 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Xeric Torriorthents

Typical pedon: Wesfil very channery loam located in an area of map unit 98. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent channers and 10 percent flagstones.

A--0 to 2 inches; very pale brown (10YR 7/3) very channery loam, brown (10YR 5/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine vesicular and interstitial pores; 35 percent channers; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk--2 to 6 inches; pale brown (10YR 6/3) very channery loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, few medium and coarse roots; many very fine interstitial pores; 45 percent channers; common thin lime coats on channers; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

R--6 inches; hard fractured bedrock.

Type location: Elko County, Nevada; approximately 8 miles southeast of White Horse Mountain; 1,450 feet north and 200 feet east of the southwest corner of section 16, T.26 N., R.69 E.; (40 degrees, 07 minutes, 15 seconds north latitude and 114 degrees, 12 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry from June through early November.

Soil temperature: 53 to 57 degrees F.

Depth to the lithic contact: 4 to 10 inches.

Control section:

Clay content--12 to 18 percent.

Texture--Loam or silt loam.

Rock fragments--40 to 60 percent, mainly channers.

Reaction--Mildly alkaline or strongly alkaline.

Calcium carbonate equivalent--1 to 10 percent.

A horizon:

Hue--2.5Y or 10YR.
Value--6 or 7 dry, 4 or 5 moist.
Calcium carbonate equivalent--1 to 5 percent.

Bk horizon:

Hue--2.5Y or 10YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Structure--Massive or subangular blocky.
Calcium carbonate equivalent--5 to 10 percent.

Wintermute Series

The Wintermute series consists of very deep, well drained soils that formed in mixed alluvium from limestone, dolomite and slate. Wintermute soils are on summits and side slopes of fan piedmont remnants, fan skirts, and beach plains. Slopes are 0 to 15 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Duric Calciorthids

Typical pedon: Wintermute gravelly silt loam, in an area of map unit 504. (Colors are for dry soils unless otherwise noted.)

A1--0 to 3 inches; pale brown (10YR 6/3) gravelly silt loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, few fine through coarse roots; many very fine vesicular pores; few fine lime pendants on undersides of pebbles; 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

A2--3 to 8 inches; pale brown (10YR 6/3) gravelly silt loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine through coarse roots; common very fine tubular pores; few fine lime pendants on undersides of pebbles; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A3--8 to 15 inches; pale brown (10YR 6/3) gravelly silt loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine, few fine through coarse roots; common very fine tubular pores; common thin to moderately thick lime pendants on undersides of pebbles; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

2Bqk1--15 to 31 inches; very pale brown (10YR 7/3) very gravelly sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm, and brittle, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; common krotovinas that are from 2 to 6 inches in diameter, pale brown (10YR 6/3) gravelly silt

loam, brown (10YR 4/3) moist, with few fine and many very fine roots; 15 percent discontinuous strong silica cementation in horizontal bands; common thin to moderately thick lime pendants on undersides of pebbles; 55 percent pebbles; violently effervescent; continuous brittle matrix; strongly alkaline (pH 8.8); abrupt wavy boundary.

2Bqk2--31 to 53 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores and many very fine interstitial pores; 25 percent discontinuous weak lime cementation; common thin to moderately thick lime pendants on undersides of rock fragments; 65 percent pebbles, 10 percent cobbles, and 10 percent stones; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

3C--53 to 60 inches; light yellowish brown (10YR 6/4) and pale brown (10YR 6/3) gravelly silty clay loam light yellowish brown (10YR 6/4) and dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, sticky and plastic; common very fine tubular pores; common fine manganese stains; common thin to moderately thick lime pendants on undersides of pebbles; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Elko County, Nevada; approximately 10 miles southwest of Currie, about 2,800 feet south and 2,100 feet west of the northeast corner of section 16, T.26 N., R.64 E.; (40 degrees, 07 minutes, 42 seconds north latitude and 114 degrees, 45 minutes, 30 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter through mid spring, dry late spring through fall.

Soil temperature: 47 to 52 degrees F.

Depth to calcic and discontinuous weak lime cementation: 8 to 20 inches.

Reaction: Moderately alkaline to strongly alkaline

Control section:

Clay content--8 to 18 percent.

Rock fragments--Average 35 to 60 percent. The upper part of the particle-size control section averages 15 to 35 percent, dominantly pebbles. The lower part averages 45 to 85 percent, of which 35 to 60 percent are pebbles and 10 to 30 percent are cobbles and stones.

A horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3 dry, 3 or 4 moist.

Bqk horizons:

Value--6 through 8 dry, 4 through 6 moist.

Chroma--3 or 4.

Texture--Stratified sandy loam and loamy sand.

Other features--Some pedons have up to 35 percent discontinuous one to three inch thick indurated or strongly silica and lime cemented layers in the lower Bqk horizons.

C horizon:

Value--6 or 7 dry, 5 or 6 moist.

Chroma--3 or 4.

Texture--Clay loam or silty clay loam.

Clay content--27 to 35 percent.

Rock fragments--15 to 35 percent, dominantly pebbles.

Xeric Torriorthents

The Xeric Torriorthents consists of very deep, well drained soils that formed in mixed alluvium on fan piedmont remnants. Slopes are 8 to 30 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Xeric Torriorthents, mesic

Typical pedon: Xeric Torriorthents gravelly sandy loam located in an area of map unit 1570. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 45 percent pebbles and 10 percent cobbles.

A--0 to 5 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; weak very thick platy structure parting to moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

C1--5 to 11 inches; light gray (10YR 7/2) very gravelly coarse sand, brown (10YR 5/3) moist; massive, soft, very friable, nonsticky and nonplastic; common very fine, fine and few medium and coarse roots; many very fine interstitial pores; 45 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C2--11 to 29 inches; light gray (10YR 7/2) very gravelly coarse sand, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common

very fine and few fine, medium, and coarse roots; many very fine and fine interstitial pores; 45 percent pebbles; strongly alkaline (pH 8.6); violently effervescent; clear smooth boundary.

C3--29 to 60 inches; light gray (10YR 7/2) stratified very gravelly coarse sand to extremely gravelly coarse sand brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many fine interstitial pores; 45 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 12 miles southeast of White Horse Mountain; 1,500 feet north and 2,000 feet west of the southeast corner of section 12, T.26 N., R.69 E.; (40 degrees, 08 minutes, 14 seconds north latitude and 114 degrees, 08 minutes, 00 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall.
Soil temperature: 47 to 52 degrees F.
Control section:
Clay content--2 to 8 percent.
Carbonates--Strongly effervescent or violently effervescent throughout.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

C horizons:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Structure--Massive or single grain.
Consistence--Soft, slightly hard, or loose.
Rock fragments--45 to 75 percent mainly pebbles.

Zafod Series

The Zafod series consists of moderately deep to a duripan, well drained soils that formed in alluvium from granite. Zafod soils are on fan piedmont remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Haploxerollic Durorthids

Typical pedon: Zafod gravelly coarse sandy loam in an area of map unit 1070. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 15 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) gravelly coarse sandy loam, dark brown (10YR 3/3) moist; strong thick platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine interstitial and vesicular and few medium vesicular pores; 20 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk--3 to 7 inches; light brownish gray (10YR 6/2) gravelly coarse sandy loam, brown (10YR 4/3) moist; moderate very coarse subangular blocky structure parting to moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; common very fine and fine tubular pores; 15 percent pebbles; common thin lime coats on undersides of coarse fragments; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Bqk1--7 to 13 inches; pale brown (10YR 6/3) very cobbly coarse sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; common very fine and fine and few medium and coarse roots; few very fine and fine tubular and many very fine interstitial pores; 10 percent durinodes; 15 percent pebbles, 15 percent cobbles, and 5 percent stones; common moderately thick lime coats on undersides of coarse fragments; violently effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.

2Bqk2--13 to 28 inches; light gray (10YR 7/2) very cobbly coarse sandy loam, light brownish gray (10YR 6/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine interstitial and few very fine tubular pores; 50 percent discontinuous strong silica and lime cementation with discontinuous 1 millimeter thick laminar cap; common moderately thick lime coats on undersides of coarse fragments; 15 percent pebbles, 20 percent cobbles, and 5 percent stones; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

3Bqkm--28 to 38 inches; light gray (10YR 7/2) strongly cemented duripan, light brownish gray (10YR 6/2) moist; massive; very hard, very firm; roots matted in places on pan surface; violently effervescent; abrupt wavy boundary.

4C--38 to 60 inches; light gray (10YR 7/2) very gravelly coarse sand, light brownish gray (10YR 6/2) moist;

massive; hard, firm, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial pores; 10 percent discontinuous weak silica cementation; 25 percent pebbles, 5 percent cobbles, and 5 percent stones; few thin lime coats on undersides of coarse fragments; violently effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; about 3 1/4 miles southeast of Highway 93A in the south end of Antelope Valley; approximately 1,000 feet east and 1,800 feet north of the southwest corner of section 28, T.28 N., R.68 E.; (40 degrees, 16 minutes, 00 seconds north latitude and 114 degrees, 18 minutes, 37 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist late fall through early summer, dry late July through October except for 10 to 20 days cumulative between July and October due to convection storms.
Soil temperature: 47 to 52 degrees F.
Depth to duripan: 20 to 40 inches.
Control section:
Clay content--5 to 15 percent.
Rock fragments--Averages 35 to 70 percent.

A horizon:
Value--5 or 6 dry, 3 through 5 moist.
Chroma--2 through 4.
Other features--Slightly effervescent to strongly effervescent.

Bk horizon:
Value--5 through 7 dry, 4 or 5 moist.
Chroma--2 through 5 dry, 3 through 6 moist.
Texture--Sandy loam, coarse sandy loam.
Consistence--Nonplastic to slightly plastic.
Clay content--5 to 15 percent.
Rock fragments--15 to 35 percent.
Other features--Strongly effervescent or violently effervescent. Some pedons contain 0 to 10 percent durinodes.

2Bqk horizons:
Value--6 through 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Rock fragments--35 to 70 percent, mainly detached pan fragments.
Structure--Subangular, angular blocky or massive.
Consistence--Firm to friable moist, nonsticky to slightly sticky and nonplastic to slightly plastic wet.

3Bqkm horizon:
Value--7 or 8 dry, 4 through 7 moist.
Chroma--2 through 4.

4C horizon:
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 through 4.
Texture--Coarse sandy loam, sandy loam or coarse sand.
Consistence--Hard or very hard dry, and firm or very firm moist.
Clay content--2 to 15 percent.
Rock fragments--15 to 35 percent, mainly pebbles.
Reaction--Moderately alkaline or strongly alkaline.
Other features--Strongly effervescent or violently effervescent.

Zerk Series

The Zerk series consists of very deep, well drained soils that formed in mixed alluvium. Zerk soils are on offshore bars, fan piedmont remnants, inset fans, and beach plains. Slopes are 0 to 8 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Duric Calciorthids

Typical pedon: Zerk gravelly loam located in an area of map unit 614. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 20 percent pebbles.

A--0 to 2 inches; light gray (10YR 7/2) gravelly loam, dark brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, and few medium roots; many very fine and fine interstitial pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
Bk--2 to 16 inches; very pale brown (10YR 7/3) gravelly loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; many very fine and fine interstitial pores; 15 percent pebbles; violently effervescent (10 percent calcium carbonate equivalent of the less than 2 millimeter fraction); strongly alkaline (pH 8.6); abrupt wavy boundary.
Bqk1--16 to 28 inches; white (10YR 8/2) extremely gravelly loamy sand, very pale brown (10YR 7/4) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 70 percent discontinuous weak lime and silica

cementation; 60 percent pebbles; violently effervescent (35 percent calcium carbonate equivalent of the less than 2 millimeter fraction); moderately alkaline (pH 8.4); clear smooth boundary.

Bqk2--28 to 60 inches; white (10YR 8/2) extremely gravelly coarse sand, yellow (10YR 7/6) moist; few pockets of very pale brown (10YR 7/3) coarse sand, dark yellowish brown (10YR 4/6) moist; massive; hard, friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 60 percent discontinuous weak lime cementation and 10 percent 1 to 2 millimeter lime and silica coats and pendants on undersides of rock fragments; 70 percent pebbles and 10 percent cobbles; strongly effervescent (20 percent calcium carbonate equivalent of the less than 2 millimeter fraction); moderately alkaline (pH 7.9).

Type location: Elko County, Nevada; approximately 10 miles northeast of Currie; located in unsectionized area about 950 feet east and 700 feet south of the northeast corner of section 12, T.29 N., R.64 E.; (40 degrees, 24 minutes, 43 seconds north latitude and 114 degrees, 41 minutes, 24 seconds west longitude.)

Range in characteristics:

Soil moisture: Moist in winter and spring, dry in summer and fall.
Soil temperature: 47 to 51 degrees F.
Depth to calcic horizon: 2 to 8 inches.
Depth to brittle horizon: 10 to 18 inches.
Control section:
Clay content—Averages 1 to 12 percent.
Rock fragments—Averages 60 to 80 percent.
Reaction--Moderately alkaline or strongly alkaline.

A horizon:
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3, dry or moist.

Bk horizon:
Value--5 through 8 dry, 4 through 6 moist.
Chroma--3 through 6, dry or moist.
Texture—Gravelly loam or very gravelly loam, with more than 50 percent fine sand or coarse sand.
Clay content—12 to 17 percent.
Rock fragments—15 to 50 percent.
Consistence--Soft to hard dry, friable to very friable moist, and nonplastic to plastic wet.
Calcium carbonate equivalent—10 to 20 percent.

Bqk1 horizon:
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 6, dry or moist.
Texture—Stratified extremely gravelly loamy sand to extremely gravelly coarse sand.
Clay content—0 to 10 percent.
Rock fragments—60 to 80 percent.
Cementation--20 to 70 percent discontinuous weakly to strongly silica and carbonate cemented strata. Strata are firm and brittle when moist.
Calcium carbonate equivalent—15 to 35 percent.

Bqk2 horizon:
Value--5 through 8 dry, 4 or 7 moist.
Chroma--3 or 6, dry or moist.
Texture—Stratified extremely gravelly loamy sand to extremely gravelly coarse sand.
Clay content—0 to 10 percent.
Rock fragments—60 to 80 percent.
Cementation—10 to 60 percent discontinuous weakly to strongly silica and carbonate cemented strata.
Calcium carbonate equivalent—15 to 35 percent.

Zimbob Series

The Zimbob series consists of very shallow or shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. Zimbob soils are on hills. Slopes are 8 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, mesic Lithic Xeric Torriorthents

Typical pedon: Zimbob very gravelly loam located in an area of map unit 975. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered by approximately 60 percent pebbles, 5 percent cobbles, and 1 percent stones.

A--0 to 2 inches; light gray (10YR 7/2) very gravelly loam, brown (10YR 5/3) moist; moderate thin platy parting to weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; few very fine roots; many very fine and few fine pores; 50 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--2 to 7 inches; very pale brown (10YR 7/3) very gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; common very fine

pores; 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
Bk--7 to 11 inches; very pale brown (10YR 7/4) very gravelly loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine, medium and coarse roots; few very thin lime coats on undersides of pebbles; 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.
R--11 inches; limestone.

Type location: Elko County, Nevada; approximately 16 miles northeast of Currie in the Pequop Mountains; located in an unsectionized area about 4.5 miles north and 1.9 miles east of the northeast corner of section 1, T.29 N., R.64 E.; (40 degrees, 29 minutes, 38 seconds north latitude and 114 degrees, 39 minutes, 25 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall.
Soil temperature: 47 to 52 degrees F.
Depth to bedrock: 4 to 14 inches.
Reaction: Moderately alkaline or strongly alkaline.
Control section:
Clay content--10 to 18 percent.
Rock fragments--Averages 35 to 50 percent, mainly pebbles.
Calcium carbonate equivalent--50 to 70 percent.

A horizon:
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 through 4 moist or dry.

Bw horizon:
Value--6 or 7 dry, 4 or 5 moist
Chroma--2 through 4.
Texture--Sandy loam.
Consistence--Soft or slightly hard dry, very friable or friable moist.

Bk horizon:
Value--5 through 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Texture--Loam or sandy loam.
Secondary carbonates--Few or common very thin coats on the undersides of rock fragments.
Other features--Up to a 2 inch thick subhorizon above the bedrock with few, thin patchy lime-silica coats on undersides of rock fragments is common in some pedons.

Zorravista Series

The Zorravista series consists of very deep, excessively drained soils that formed in mixed aeolian material. Zorravista soils are on dunes, barrier bars, and sand sheets. Slopes are 2 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Mixed, mesic Xeric Torripsamments

Typical pedon: Zorravista loamy fine sand located in an area of map unit 1215. (Colors are for dry soil unless otherwise noted.)

A--0 to 6 inches; light gray (10YR 7/1) loamy fine sand, light brownish gray (10YR 6/2) moist; weak medium platy structure parting to weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
C1--6 to 26 inches; light gray (10YR 7/1) fine sand, light brownish gray (10YR 6/2) moist; single grain; loose; common very fine, few fine and medium roots; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
C2--26 to 60 inches; light gray (10YR 7/1) fine sand, light brownish gray (10YR 6/2) moist; single grain; loose; few fine roots; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Elko County, Nevada; approximately 14 miles southeast of Oasis; located in an unsectionized area about 1 1/4 miles east and 2,000 feet south of Shafter, T.34 N., R.67 E.; (40 degrees, 51 minutes, 00 seconds north latitude and 114 degrees, 25 minutes, 04 seconds west longitude.)

Range in characteristics:

Soil moisture: Usually dry, dry mid spring through fall, moist winter and early spring.
Soil temperature: 47 to 52 degrees F.
Control section:
Clay content--Less than 5 percent.
Other features--Effervescent to at least 20 inches.

A horizon:
Hue--10YR, 2.5Y.
Value--6 or 7 dry, 3 through 6 moist.
Chroma--1 through 4.
Reaction--Moderately alkaline or strongly alkaline.
Structure--Single grain or platy.

Effervescence--Slightly effervescent or strongly effervescent.

C horizons:

Value--5 through 8 dry, 3 through 6 moist.
Chroma--1 through 4.
Hue--10YR or 2.5Y.
Consistence--Soft to slightly hard or loose dry, very friable or loose moist.
Texture--Fine sand, sand, or loamy fine sand.
Clay content--Less than 5 percent in the upper part.
Structure--Single grain or massive.
Reaction--Mildly alkaline through strongly alkaline.
Effervescence--Noneffervescent to strongly effervescent.
Other features--Some pedons contain lacustrine lake sediments below 44 inches.

Formation of the Soils

Soil is a natural three dimensional body on the earth's surface which is capable of supporting plants. It is a dynamic mixture of mineral material, organic matter, water, and air. 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 soils exist in the soil survey area within relatively short distances. These differences are the result of the interaction of biological forces; climate; relief; parent material; and time. These factors form the ecosystem of soil genesis *(13).*

The soil-forming factors interrelate to develop soil horizons that have specific properties. The age and strength of expression of the horizons is determined by the amount of weathering of the parent material. Weathering is the result of the interaction of moisture, temperature, and biological activity as influenced by time. The kinds and combinations of horizons and other diagnostic properties and their strength of expression provide clues as to the age of the soils in the area *(28, 29).* Diagnostic horizons present in the soils include mollic epipedons; cambic, argillic, and silica-cemented horizons.

Mollic epipedons are thick, dark surface horizons that have high base saturation. They form in areas where organic matter accumulates faster than it is oxidized. The organic matter is added to the soil in the form of decomposed roots and organic residue from the surface. When conditions are favorable, mollic epipedons can form in 100 to 1,000 years. They are the only diagnostic horizons in younger soils, but they occur in combination with other diagnostic horizons in older soils.

Cambic horizons in this survey area are identified by a redistribution of soluble salts and carbonates to a lower position in the soil profile, oxidation of the B horizon, and alteration of the original parent material to platy or blocky structure. Cambic horizons in northeastern Nevada generally are thought to be about 5,000 to 10,000 years old. This age has been determined mostly from soil mapping in areas near Lake Lahontan and other Pleistocene lakes *(12, 14, 16, 17).* Cambic horizons also are present in soils that have a thin layer of Mount Mazama ash in the profile.

Argillic horizons are subsurface horizons that consist of illuvial clay accumulations. Prominent argillic horizons in this area commonly are in soils that formed on surfaces of Wisconsin and pre-Wisconsin age and in parent materials other than limestone and other similar rocks *(5, 10, 11, 12, 15, 29).* Generally, as argillic horizons age they become finer in texture and somewhat thicker and tend to develop an abrupt upper boundary.

Volcanic glass in deposits derived from pyroclastic material and in eolian deposits is a source of silica that results in the formation of durinodes and duripans in many of the soils in the survey area. Duripans are massive horizons that are cemented with silica and in this area usually with accessory calcium carbonate. Soils of the Holocene that developed in deposits that have a high content of volcanic ash commonly have weakly to moderately cemented horizons that contain a large amount of amorphous siliceous material. This silica cementation can form in a relatively short period of time and is probably less than 7,000 years old. Platy or laminated duripans and thin discontinuous laminar duripans tend to develop in loamy material. Duripans capped with silica-cemented laminar layers probably are the oldest ones in the area and are of early Wisconsin and pre-Wisconsin age, as evidenced by their association with prominent argillic horizons in some areas.

The overall landscape of the area, which is mainly mountains and valleys, is the result of geologic, stratigraphic, and structural control. The present topography and landforms, however, are primarily the result of events that occurred during the Quaternary. The kind of soils that formed are indicative of the stability and age of the surface of the landforms on which they occur. The degree of development of diagnostic horizons in the soils indicates a range in age from Holocene to pre-Wisconsin. The many kinds of soils in the area are a direct result of this range in age.

Living Organisms

Plants, animals, insects, and microflora are important biological forces that affect soil formation in the survey area. Although mammals, such as badgers and ground squirrels, and insects, such as cicadas and ants, have had some affect on soil development, plants appear to have had the major biological influence on the soils in this survey area.

Vegetation is particularly important as it affects soil erosion. Where vegetation is sparse there is little cover and a higher rate of geological erosion occurs.

Because of climatic differences, plants vary considerably in kinds and amounts as elevation increases. On the flood plains and lake plains, where drainage is restricted, the dense meadow vegetation has supplied the organic matter necessary for the development of Cumulic Endoaquolls (Welch series), on flood plains and Typic Endoaquolls (Kolda series) on lake plains, both of which have a dark A horizon.

On fan piedmonts, fan skirts, alluvial flats, and lake plains at the lower elevations, the dominant plants are drought and salt-tolerant shrubs *(24).* Because of the scarcity of available moisture, the plant cover in these areas is sparse. As a result, little organic matter is added to the soils and little protection from the wind and sun is provided. Salts have been moved from the lower layers to the upper layer by the salt-tolerant shrubs. An example of soils that formed in these areas are Typic Torriorthents (Benin series) on lake plains.

Fan piedmonts, fan skirts, and foothills at the higher elevations support a plant cover of shrubs and grasses. The density of these plants is somewhat greater; therefore, moderate amounts of organic matter have accumulated in the A horizon. Soluble salts are present at a greater depth in the profile. Examples of soils that formed in these areas are Haploxerollic Durorthids (Shabliss series) on fan piedmonts and Lithic Xerollic Calciorthids (Tecomar series) on hills.

The mountainous areas generally support a denser stand of shrubs, grasses, and in some places, trees. Because of the more abundant vegetation, the A horizons of the soils in these areas are thicker, higher in organic matter, and darker in color. An example of soils formed in this vegetation type are Calcic Pachic Cryoborolls (Hardol series) and Typic Calcixerolls (Cavehill series).

Climate

The major climatic forces that influence soil formation are precipitation and temperature. Recent soils developed under the present climate, but soils that developed before the Holocene were subject to different climatic conditions. Morrison and Frye *(16, 17, 18, 19)* suggest that accelerated soil formation occurs during unique climatic periods, but the climatic conditions between these periods is not conducive to soil formation.

The present desert climate began at the start of the Pleistocene *(4),* but both precipitation and temperature have fluctuated greatly. The present climate is characterized by warm, dry summers and cool, moist winters. Precipitation is strongly influenced by the north-south trending mountain ranges, and increases as elevation increases. The average annual precipitation ranges from about 4 inches at the lowest elevations in the Wendover area to about 25 inches or more at the highest elevations in the Cherry Creek, Pequop, and Goshute ranges. Most of the precipitation falls in winter and spring, except in Pilot Creek Valley and the Wendover area where precipitation is distributed fairly evenly throughout the year.

The average annual air temperature ranges from 53 degrees F. at lower elevations in the Wendover area to 41 degrees F. or less in some of the higher mountain ranges. In winter, freezing and thawing generally occur throughout the survey area, except in those areas that are insulated by snow cover. This frost action causes heaving of plants, development of miniature rings and rock stripes, and erosion as a result of solifluction. At some of the higher elevations, bedrock has been fractured and displaced as a result of freezing and thawing.

Major climatic variations are a result of the effects of topography and relief. Temperature decreases and precipitation increases as elevation increases. The soils in the survey area generally are divided into climatic zones according to elevation and longitudinal location. As the precipitation increases, the removal of soluble salts and the production of native vegetation increase, which results in a cycling of bases and an increase in organic matter. Fluctuations in temperature and moisture affect the rates of organic matter accumulation and decomposition and the rate of weathering of minerals *(6).*

At elevations of 4,300 to 5,700 feet, the average annual precipitation is about 5 to 8 inches and the average annual air temperature is about 48 to 52 degrees. In these warm, arid areas, no surplus moisture is available to percolate. Chemical weathering of parent material is slow, soluble salts remain in the upper part of the soil profile, and eluviation and illuviation occur very slowly. The plant cover is sparse and consists mainly of drought-and salt-tolerant shrubs. Typically, the soils are low in organic matter content and have a thin, light-

colored A horizon. Soluble salts and calcium carbonate accumulate in the soil profile at a relatively shallow depth. Typic Calciorthids (Gravier series) and Typic Torriorthents (Katelana series) are examples of soils that formed in this climatic zone.

At elevations of 5,700 to 7,000 feet, the average annual precipitation is about 10 inches and the average annual air temperature is about 47 degrees. In these warm, semiarid areas, the plant cover is thicker than at the lower elevations and consists mainly of drought-tolerant shrubs and grasses. Chemical weathering of parent material occurs slowly. Calcium carbonate and silica accumulate somewhat lower in the profile. Typically, the soils are moderately low in organic matter content. They have a thin, relatively dark A horizon or a thicker, light-colored A horizon and a thicker calcic or cambic horizon over accumulations of silica and/or carbonates. Durixerollic Calciorthids (Automal series) and Lithic Xerollic Calciorthids (Tecomar series) on foothills are examples of soils that formed in this climatic zone.

At elevations of 7,000 to 8,000 feet, the average annual precipitation is about 12 to 14 inches and the average annual air temperature is about 43 to 46 degrees. In these cool, semiarid areas the increased precipitation and decreased evapotranspiration rate result in stands of singleleaf pinyon and Utah juniper with localized areas of shrubs and perennial grasses. Because of the lower temperatures, organic matter decomposes at a slower rate and accumulates in the A horizon. Chemical weathering is moderate in the climatic zone. Typically, the soils have a dark mollic epipedon and a strongly developed calcic horizon in the subsoil. Typic Calcixerolls (Cavehill series) and Lithic Calcixerolls (Onkeyo series) are examples of soils that formed in this climatic zone.

At elevations of as much as 10,200 feet, the average annual precipitation is about 16 to more than 20 inches and the average annual air temperature is about 41 to 43 degrees. These cold areas include windswept crests and steep side slopes of mountains where drifted snow accumulates. Most calcium carbonate and some exchangeable cations have been removed to the lower subsoil resulting in a base saturation that generally is lower than in other climatic zones. Organic matter decomposes slowly, and a thick, dark A horizon forms. Areas where drifted snow accumulates support thick mountain shrubs and grasses. Windwept areas receive less effective precipitation, which is reflected in lower plant production. Soils on stable, north-facing, concave side slopes in areas where snow accumulates may be older than their degree of development indicates because they remain cold for most of the year, which inhibits development. During glacial periods these soils may have remained frozen or under snow cover throughout the year. Pachic Calcixerolls (Wardbay series) on side slopes of mountains and Lithic Cryoborolls (Adobe series) on windswept crests of mountains are examples of soils that formed in this climatic zone.

Relief

Relief is the shape of the landscape. It is determined by the position of the water table, percent of slope, length of slope, shape of slope (convex or concave), and exposure to wind and sun. Any activity on a slope that affects the soil, including erosion and deposition, affects soil formation *(13)*.

The landscapes in this area are dominated by nearly parallel mountain ranges rising abruptly from broad alluvium-filled valleys. Fan piedmonts and fan skirts slope downward from the mountains until they merge with alluvial flats and lake plains *(24)*.

The mountain ranges mainly are characterized by excessive relief. The soils in these positions are well drained. Runoff is rapid or very rapid, and the hazard of erosion is severe. Mountain slopes that are only partially stabilized are subject to a high rate of geologic erosion, and soil development on these slopes primarily is limited to an accumulation of organic matter that forms a mollic epipedon. Cryic Lithic Rendolls (Haunchee series) and Lithic Haploxerolls (Hendap series) are examples of soils on these slopes. Soil formation has been unable to act on parent material long enough for cambic, calcic, or argillic horizon to form in these soils. Mountain slopes that are more stable are subject to a slower rate of geologic erosion, and a calcic or argillic horizon has formed in the soils on these slopes. Pachic Calcixerolls (Wardbay series) and Aridic Argixerolls (Sumine series) are examples.

Most of the foothills and mountains exhibit pronounced aspect-related differences in microclimate. Some soils on north-facing slopes at the lower elevations are similar to soils on south aspects at the higher elevations *(6, 13)*.

Fan piedmonts flank the mountain ranges. The soils in these positions are well drained. Runoff is slow or medium and the hazard of erosion is slight or moderate. The fan piedmonts typically are dissected because the stream channel has been altered as a result of changes in climate or local faulting. This dissection has resulted in the formation of smooth areas of the summits of fan piedmont remnants, younger side slopes of fan piedmont remnants, and very young inset fans along drainageways. Xerollic Durorthids (Palinor series) and Haploxerollic Durorthids (Shabliss series) are examples of soils on the summits of fan piedmont remnants.

Durixerollic Calciorthids (Automal series) are examples of soils on the side slopes of fan piedmont remnants, and Xeric Torriorthents (Linoyer series) are examples of soils on inset fans.

Fan skirts are extensive in this area. They border the fan piedmonts and extend to the alluvial flats. The soils in these positions are well drained. Runoff is slow or medium, and the hazard of erosion is slight or moderate. These surfaces are relatively smooth and are not dissected. Xeric Torriorthents (Linoyer series) and Durixerollic Calciorthids (Kunzler series) are examples of soils on fan skirts.

The soils on the nearly level axial-stream flood plains along the Franklin River and in the Franklin and Ruby Lake areas are poorly drained or very poorly drained. Runoff is very slow or ponded. Areas of these soils are subject to flooding, and some areas are subject to deposition. The soils in these areas support dense stands of meadow vegetation that contributes large amounts of organic matter; thus, these soils have a thin to thick, dark A horizon. Some of these soils have excess soluble salts in the upper horizons. Typic Endoaquolls (Kolda series) and Typic Calciaquolls (Logan series) are examples of soils in these positions.

Parent Material

Parent material is the weathered rock or unconsolidated material from which soils form. The hardness, grain size, and porosity of the parent material and its mineralogic and chemical composition greatly influence soil formation. The parent material in this survey area is mainly material derived from sedimentary rock and associated metamorphic rock, material derived from intrusive and extrusive volcanic rock, and colluvium, alluvium, lacustrine sediment, and eolian material.

Calcareous sedimentary rock is the dominant rock type in the mountains of the survey area. In most areas of the mountains the soils have only been stable long enough to form a calcic horizon and in some areas a dark A horizon. Lithic Xerollic Calciorthids (Pookaloo series) and Pachic Calcixerolls (Wardbay series) are examples of these soils.

Late Tertiary sedimentary rock occurs scattered throughout the survey area. This material consists of older alluvium and lakebed deposits derived from interbedded tuffaceous shale, diatomaceous shale, siltstone, sandstone, and conglomerate. The lakebed deposits are severely dissected and resemble low, rolling hills. The summits have been actively eroding and are too unstable for an argillic horizon to form. Xeric Torriorthents (Hundraw and Holborn series) are examples of soils on these areas.

Volcanic rock which is not extensive in the area includes andesite, rhyolite, ashflow tuff, basalt, and small, localized areas of granite. This rock contains large amounts of minerals that weather to clay; therefore, most of the soils that formed in this material on stable landforms have an argillic horizon. Lithic Argixerolls (Chen series) and Aridic Argixerolls (Sumine series) are examples.

The colluvium, alluvium, and basin fill material in adjacent valleys are derived mainly from calcareous sedimentary rock. The soils in the valleys throughout the area are strongly influenced by pyroclastic material from loess.

Colluvium has accumulated on steep mountain slopes as a result of gravitational forces and mass wasting. The colluvium generally is poorly sorted and contains many rock fragments. Many of these areas have not been stable long enough for an argillic horizon to form. Calcic Pachic Cryoborolls (Hardol series) is an example of soils that formed in colluvium on steep mountain slopes.

Alluvium derived from various kinds of rock and deposited as fan piedmonts is mostly loamy and contains pebbles, cobbles, and stones. It is porous, and may contain minerals that weather to clay, and contains soluble silica and calcium carbonate that results in the cementation of horizons. Xerollic Durorthids (Palinor series) and Xerollic Durargids (Hunnton series) are examples of soils that formed on stable fan piedmonts.

Alluvium deposited as fan skirts below the fan piedmonts consists of loamy and silty material mixed with loess that is high in content of volcanic ash. Some of these soils may have horizons that are weakly cemented with silica and calcium carbonate. Some localized areas along drainageways contain pebbles, cobbles, and stones. Examples of soils that formed on fan skirts are Durixerollic Calciorthids (Kunzler series) and Durorthidic Xeric Torriorthents (Okan series).

Sandy eolian material is of limited extent in this survey area. Typic Torripsamments (Kawich series) which formed in wind-active areas on semistabilized dunes and on dunes superimposed over beach plains and lake plains, are examples of soils that formed in this material.

Lacustrine sediments deposited in pluvial lakes that occupied most of the valley floors consists of silty and clayey material. Soluble salts are common in most of these soils. These soils are young and exhibit limited soil development. Typic Torriorthents (Katelana series) and Xeric Torriorthents (Sheffit series) are examples.

Areas of reworked sand and gravel deposited on pluvial beaches occur throughout the survey area prominently marking the pluvial high lake stands. These

deposits are relatively unchanged except for a thin mantle of eolian dust and in some areas a weakly developed calcic horizon. Examples of these soils are Typic Torriorthents (Izamatch series) and Xerollic Calciorthids (Threesee series).

Time

Time is required for the weathering of rocks and minerals and the formation of soil horizons. The interaction of time and other soil-forming factors is not well understood by soil scientists and geologists working in this field. Some suggest that the weathering of parent material and the development of soil profiles essentially have been continuous and at a constant rate throughout the Quaternary *(21, 22, 26, 29).* Recently, however, geologists concerned with differentiating Quaternary deposits have suggested that soil development has not proceeded continuously at the same rate but has taken place intermittently at rapid rates *(16, 17, 18, 25).*

The present desert climate began at the start of the Pleistocene *(4),* but precipitation and temperature have fluctuated greatly. During cooler and wetter glacial periods, or pluvial, the rate of runoff increased, resulting in increased erosion, mass wasting, and deposition. These conditions reduced the rate of evaporation in the basins, and permanent lakes developed on the bolson floors. A change to a cool, drier climate at the beginning of the interglacial periods commonly was marked by maximum eolian activity. Following this was a warm, dry period and then a warm, wet period, which was most conducive to soil development *(3, 5, 17).* These periods of peak soil development occurred worldwide; therefore, the profiles of soils that formed in different regions during these periods can be correlated and are similar in age.

The peak soil-forming periods generally followed periods of increased erosion and deposition. During these periods, the land surfaces stabilized and the climate was favorable for a greatly accelerated rate of chemical weathering. Geologists have developed a technique of mapping soils called soil stratigraphy that uses weathering profiles to differentiate and correlate Quaternary deposits. Researchers have found soils in other parts of Nevada that are similar in age to those that formed on stratigraphic surfaces identified by Morrison *(5, 12, 15).* Comparing soils in this survey area with similar soils in other areas has helped to identify local soils that area similar in age. Although soils developed during each peak soil-forming period, representative profiles have eroded away or have been covered by subsequent depositions in some areas. Because of this, gaps occur in the time-soil profile sequence. In the following paragraphs, some of the time-stratigraphic ages as set forth by Birkeland are discussed *(6).* These include the Holocene, Wisconsin, and pre-Wisconsin ages.

Holocene--Volcanic ash and eolian material, presumed to be from Mount Mazama ashfalls, are the main sources of soluble silica that forms durinodes and weakly developed duripans in the soils of the survey area. Thin stratas of this material are in some of the soils on fan skirts, alluvial flats, flood plains, and lake plains *(27).*

Hawley and Wilson *(12)* proposed that a distinct Mount Mazama volcanic ash bed *(7)* along the Humboldt River overlies late Wisconsin deposits and is the boundary between the Pleistocene and Recent soils in the Winnemucca area. This widely spread volcanic ash bed extends into Elko County and is interbedded with floodplain deposits along the Humboldt River and with young alluvium and lacustrine sediments in valleys of this survey area.

The youngest soils in the area are those that formed in recently aggraded material or in material recently exposed by erosion. These soils have no diagnostic horizons, and they resemble the original parent material. Among these are Xeric Torriorthents (Linoyer series) that formed in recent alluvium, Typic Torripsamments (Kawich series) that are subject to eolian activity and are on semistabilized sand dunes and superimposed over beach plains, and Lithic Xeric Torriorthents (Izar series) and shallow Xeric Torriorthents (Hundraw series) that formed in material weathered from Tertiary sediment on low, rolling hills where geologic erosion has been active.

Stable Holocene land surfaces that are 2,000 to 8,000 years old are extensive in the survey area *(9, 11).* The soils that formed on these surfaces have a calcic or a cambic horizon and are cemented with silica in some areas. These soils are on inset fans, beach plains, and hills. Examples are Xerollic Calciorthids (Threesee series) on beach plains, Durixerollic Camborthids (Kelk series) on inset fans, and Lithic Xerollic Calciorthids (Pookaloo series) on hills and mountains.

The landscape in some areas is less stable and was stripped by erosion during the late Wisconsin period exposing a relict duripan. Following redeposition during the mid to early Holocene, thin layers of loess and loamy alluvium from surrounding areas covered these relict subsurface horizons. Soil development in this material is minimal. Xerollic Durorthids (Chiara series) and Haploxerollic Durorthids (Shabliss series) on fan piedmonts are examples of soils that developed in this material.

Wisconsin.--Deposits of Wisconsin age are widely distributed in the survey area. Early Wisconsin deposits

on fan and stream terraces generally are more extensive and coarser than those of the late Wisconsin and early Holocene. A widespread veneer of loess covered these coarse deposits during the mid-Wisconsin. Typically, these deposits are on the higher geomorphic surfaces and are dissected. Morrison *(18)* proposed that a weathering profile, the Churchill soils in the Lake Lahontan area, be used to differentiate early Wisconsin from late Wisconsin deposits. Hawley and Wilson *(12)* tentatively correlated a soil of similar age in the Winnemucca area. Soils in the survey area that consist of loess-influenced alluvium over coarse alluvium have characteristics similar to those of the soils correlated in the Winnemucca area. Examples of these soils are Durixerollic Calciorthids (Automal series) and Duric Calciorthids (Wintermute series). They are considered to be mid-Wisconsin age.

Stable mid-Wisconsin land surfaces that formed in volcanic, igneous or non-calcareous sedimentary rocks are very limited in this survey area. The soils on these surfaces have a dominantly fine-loamy or loamy-skeletal argillic horizon. Examples of these soils are Durixerollic Haplargids (Nevador series) on fan piedmonts, Lithic Argixerolls (Upatad series) on hills and Aridic Argixerolls (Sumine series) on mountains.

Stable mid-Wisconsin to early Wisconsin land surfaces that formed in alluvium from calcareous sedimentary rocks are extensive in this area. They have strongly developed calcic horizons and indurated duripans cemented with accessory calcium carbonate. Xerollic Durorthids (Palinor series) is an example of these soils on fan piedmonts.

Stable early Wisconsin land surfaces are very limited in this area. These soils have a well developed argillic horizon and a indurated duripan. They are on the older land surfaces where the original subsurface horizons have not been eroded or deeply buried by sediment. Aridic Durixerolls (Stampede series) and Xerollic Durargids (Hunnton series) are examples of these soils on fan piedmonts. Lithic Argixerolls (Chen series), which have a clayey-skeletal argillic horizon and formed in residuum, are examples of these soils on mountains.

Stable pre-Wisconsin land surfaces occur only in the north end of Ruby Valley and on the west side of Clover Valley. These surfaces have been deeply dissected and are on fan piedmont remnants and partial ballenas bordering mountain slopes. Because these surfaces have been relatively stable since they were dissected, the soils that developed on them are considered to be the oldest in the survey area. Abruptic Aridic Durixerolls (Donna series) and Typic Palexerolls (Secrepass series) are examples of soils on fan piedmont remnants and partial ballenas.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

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.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a narrow valley upon a plain, or of a tributary stream near or at its junction with its main stream.

Alluvial flat. A nearly level, graded, alluvial surface in bolsons and semi-bolsons. Commonly, an alluvial flat does not manifest terraces or floodplain levels.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Argillite. Weakly metamorphosed mudstone or shale.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

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. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3.5
Low	3.5 to 5
Moderate	5 to 7.5
High	more than 7.5

Avalanche chute. The track or path formed by an avalanche.

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Backswamp. A floodplain landform of extensive, marshy, or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

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.

Ballena. A fan remnant having a distinctively-rounded surface of fan alluvium. The ballena's broadly rounded shoulders meet from either side to form a narrow summit and merge smoothly with concave, short pediments which form smoothly-rounded drainageways between adjacent ballenas. A partial ballena is a fan remnant large enough to retain some relict fan surface on a remnant summit.

Barrier beach. A wide gently sloping portion of a bolson floor comprising numerous, parallel, relict longshore-bars and lagoons built by a receding pluvial lake.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

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 floor. A general term for the nearly level, lower-most part of intermontane basins (i.e., bolson, semi-bolsons). The basin floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.

Beach terrace. The relict shorelines from pluvial lakes, generally restricted to valley sides.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts, the water table is exposed.

Board foot. A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.

Bolson. A landscape term for an internally drained intermontane basin into which drainages from surrounding mountains converge inward toward a central depression.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caldera. A large, more or less circular depression, formed by explosion and/or collapse, which surrounds a volcanic vent or vents, and whose diameter is much greater than that of the included vent, or vents.

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channeled. Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.

Channery soil material. Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

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 depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clayey soil. Silty clay, sandy clay, or clay.

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.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Clearcut. A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse fragments. Mineral or rock particles larger than 2 millimeters in diameter.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded, partly rounded, or angular 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 (7.6 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

Codominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

Colluvium. Unconsolidated, unsorted earth material moved and deposited by mass movement on sideslopes and at the base of slopes.

Commercial forest. Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

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.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane that typically takes the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

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 textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the soil-depleting crops and practices. 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.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

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.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

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.

Cropping system. Growing crops according to a planned system of rotation and management practices.

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.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

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

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deep soil. A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped, deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement

of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Duff. 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.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Ecological Site. A distinctive kind of rangeland or grazed forestland that has a unique historic potential native plant community. Ecological sites are the products of all the environmental factors that affect their development. An ecological site is capable of supporting a native plant community that has a unique kind and/or proportion of species or total vegetative production. Ecological sites in grazed forestland include both overstory and understory vegetation.

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.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

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.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

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 human or animal activities or of a catastrophe in nature, such as a 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 resulting from erosion or faulting. Synonym: scarp.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

Excess alkali (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess sulfur (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan apron. A sheet-like mantle of relatively young alluvium covering part of an older fan piedmont surface. It somewhere buries a soil that can be traced to the edge of the fan apron.

Fan piedmont. The most extensive landform on piedmont slopes, formed by the coalescence of alluvial fans or accretions of fan aprons into one generally smooth slope.

Fan remnant. A general term for landforms that are remaining parts of older fan-landforms, that either have been dissected or partially buried.

Fan skirt. The zone of smooth, laterally-coalescing, small alluvial fans that issue from gullies cut into the fan piedmont or that are the coalescing extensions of inset fans of the fan piedmont, and that merge with the basin floor.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of fire fighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

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 inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

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.

Gilgai. The microrelief of clayey soils that shrink and swell considerably with changes in moisture content. Usually manifested as a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as

protection against erosion. Conducts surface water away from cropland.

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 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum. A mineral consisting of hydrous calcium sulfate.

Hard bedrock. Bedrock 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 iron oxide, silica, calcium carbonate, or other substance.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

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.

Holocene. The epoch of the Quaternary Period of geologic time, extending from the end of the Pleistocene Epoch (about 10 to 12 thousand years ago) to the present.

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 uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. 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.

E horizon.--The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

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.

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, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.--Soft, consolidated bedrock beneath the soil.

R layer.--Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

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.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and less palatable to livestock.

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.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Inset fan. A special case of the flood plain of an ephemeral stream that is confined between fan remnants, basin-floor remnants, ballenas, or closely opposed fan toeslopes.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intermontane basin. A generic term for wide structural depressions between mountain ranges that are partly filled with alluvium. They may be drained internally (bolsons) or externally (semi-bolsons).

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.--Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.--Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes or borders.

Controlled flooding.--Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.--Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).--Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.--Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.--Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.--Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.--Water, released at high points, is allowed to flow onto an area without controlled distribution.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lagoon. The nearly level, filled depression behind the longshore bar on a barrier beach.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Lake terrace. The narrow shelf produced along a lake shore and later exposed when the water recedes.

Lamella. A thin, generally horizontal layer of fine material illuviated within a very much thicker, coarser, eluviated layer.

Landform. Any recognizable form or feature on the earth's surface, having a characteristic shape, and produced by natural causes that provide an empirical description of similar portions of the earth's surface.

Landscape. A collection of related, natural landforms.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

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.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Longshore bar. A narrow, elongate, coarse-textured ridge, built by the wave action of a pluvial lake, that extends parallel to the shore and separated it from a lagoon; both the bar and lagoon are now relict features.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mean annual increment (MAI). The average annual increase in volume of a tree during the entire life of the tree.

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.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

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.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

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, or fine sandy loam.

Moderately deep soil. A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

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. 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. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables--hue, value, and chroma. For

example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

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.

Overstory. The trees in a forest that form the upper crown cover.

Oxbow. The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsolidated organic and mineral material in which soil forms.

Parna dune. An eolian dune built of sand size aggregates of clayey material that commonly occurs leeward of a playa.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pediment. A gently sloping erosional surface developed at the foot of a receding hill or mountain slope.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

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.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.00 to 0.01 inch
Very slow	0.01 to 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	2.0 to 6.0 inches
Rapid	6.0 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, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piedmont slope. The dominant slope at the foot of a mountain. Main components of the piedmont slope include pediments, alluvial fans, fan piedmonts, fan skirts and inset fans.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

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.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Pleistocene. The epoch of the Quaternary Period of geologic time preceding the Holocene (from approximately 10 thousand to 2 million years ago).

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Pluvial. Relating to former periods of abundant rains.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

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.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Potential native plant community. See Climax plant community.

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. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

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 practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Quartzite, metamorphic. Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

Quaternary. The period of geologic time, extending from about 2 million years ago to the present and comprising two epochs, the Pleistocene (Ice Age) and Holocene (Recent).

Quartzite, sedimentary. Very hard but unmetamorphosed sandstone consisting chiefly of quartz grains.

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.

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 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 degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline (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

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous

wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regeneration. The new growth of a natural plant community, developing from seed.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Rubble land. Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

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 groundwater runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

Salinity. The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline	0 to 2
Very slightly saline	2 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	More than 16

Salty water (in tables). Water that is too salty for consumption by livestock.

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 sheet. A large, irregularly shaped, surficial mantle of eolian sand.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

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.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Semi-bolson. An intermontane basin that is drained externally by an intermittent stream.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. 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.

Shallow soil. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder slope. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune. A small dune that forms around shrubs or small trees.

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.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site class. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant or dominant and co-dominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and co-dominant trees that are 50 years old or are 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that shows the average height of dominant or dominant and co-dominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and co-dominant trees that are 100 years old or are 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and co-dominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skid trails. Pathways along which logs are dragged to a common site for loading onto a logging truck.

Slash. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

Slickens. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

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:

Nearly level	0 to 2 percent
Gently sloping	2 to 4 percent
Moderately sloping	4 to 8 percent

Strongly sloping	8 to 15 percent
Moderately steep	15 to 30 percent
Steep	30 to 50 percent
Very steep	50 to 75 percent
Extremely steep	75 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

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 and their respective ratios are:

Very slight	5-12:1
Slight	13-30:1
Moderate	31-45:1
Strong	46-90:1
Very strong	more than 90:1

Soft bedrock. Bedrock 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, in millimeters, of separates recognized in the United States are as follows:

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 material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Species. A single, distinct kind of plant or animal having certain distinguishing characteristics.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A surface cut formed by the erosion of hard or semi-consolidated bedrock and thinly mantled with stream deposits.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

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 grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer" or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Tailwater. The water directly downstream of a structure.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

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. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). A step-like surface, ordinarily flat or undulating, bordering a river, a lake, or the sea representing a former flood plain.

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."

Thin layer (in tables). Otherwise suitable soil material too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

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

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Toxicity (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Trafficability. The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

Tread. The relatively flat terrace surface that was cut or built by stream or wave action.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Understory. Any plants in a forest community that grow to a height of less than 5 feet.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley. An elongated depressional area primarily developed by stream action.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Very deep soil. A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Very shallow soil. A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity

of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Waterspreading. Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

Water supplying capacity. The total amount of water available in the soil for plant growth in a normal year from precipitation and from runon from higher areas. Runoff and water lost to deep percolation are not included.

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.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically, a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.