United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Regents of the University of California (Agricultural Experiment Station); United States Department of the Interior, Bureau of Land Management; United States Department of Agriculture, Forest Service; California Department of Forestry and Fire Protection

Soil Survey of Susanville Area, Parts of Lassen and Plumas Counties, California

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 multi-county 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 California, is available at the local office of the Natural Resources Conservation Service.

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 Thus, as older published interpretive information becomes outdated, new interpretive data must be generated and tailored to local conditions.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 Survey Information System (NASIS)** database as needed. Map Unit Records are the soil survey specific data and interpretations in the National Soil Survey Information System 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 (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1987. Soil names and descriptions were approved in 2000. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2000. This survey was made cooperatively by the Natural Resources Conservation Service and the Regents of the University of California, (Agricultural Experiment Station); United States Department of Interior, Bureau of Land Management; United States Department of Agriculture, Forest Service; California Department of Forestry and Fire Protection. The survey is part of the technical assistance furnished to the Honey Lake Valley Resource Conservation District.

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

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Cover: A typical view of the salt-desert shrub vegetation in Honey Lake Valley. Bobert sandy loam, 0 to 2 percent slopes with Saline-sodic loam 6 to 12 rangeland ecological site is in the foreground.

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Foreword

This soil survey has been developed by the Natural Resources Conservation Service, America's Private Lands Conservation Agency. The soil survey contains information that affects land use planning and other aspects of natural resources conservation in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, 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.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

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 Cooperative Extension Service.

Chuck Bell
State Conservationist
Natural Resources Conservation Service

Soil Survey of Susanville Area, Parts of Lassen and Plumas Counties, California

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United States Department of Agriculture, Natural Resources Conservation Service
in cooperation with
Regents of the University of California, (Agricultural Experiment Station); United States Department of the Interior, Bureau of Land Management; United States Department of Agriculture, Forest Service; California Department of Forestry and Fire Protection

General Nature of the Survey Area

The survey area is located in the eastern part of Lassen County and the northeastern part of Plumas County. It has an area of 1,961,794 acres, or about 3,065 square miles. The eastern boundary of the survey area is the state line between Modoc County and the Modoc National Forest, on the west by the Lassen National Forest and the Plumas National Forest, and on the south by the Sierra Valley Survey Area. The main body of the survey area is about 85 miles north to south and about 40 miles east to west. The area in Plumas County joins Lassen County on the west side of the survey area. This part of the survey area, about 144,000 acres in and surrounding the Almanor Basin, is separated from the remainder of the area by a six-mile wide portion of the Lassen National Forest.

Soils in the Honey Lake Valley are used for irrigated agriculture, livestock grazing and wildlife habitat. Some areas are used for urban development. Most areas on the hills, mountains, and basins north and south of the Honey Lake Valley are used for livestock grazing with small areas of irrigated agriculture. The mountains west of the Honey Lake Valley and in the Almanor Basin are used for timber production, livestock grazing and urban development. Elevation ranges from 3,980 feet at Honey Lake to 7,964 feet on Observation Peak.

Two earlier soil surveys that include part of the area have been published. The oldest is the Soil Survey of the Honey Lake Area, published in 1917. Soils of the Sierra Army Depot was published in 1968. A reconnaissance survey of Lassen County was published in 1967. The present survey updates all earlier surveys and provides additional information and larger maps that show the soils in greater detail.

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.

This section gives general information about the survey area. It briefly discusses history; water supply; natural vegetation; physiography, relief, and drainage; and climate.

History and Development

A few miners and trappers entered the Honey Lake Valley prior to 1849. By the early 1850's there was a permanent settlement in the valley. These settlers pastured stock on the bottom lands, cut native bunchgrass hay, and mined. Flood irrigation of grasslands began in 1854 and crops included potatoes, small orchards, and gardens. In 1864, Lassen County was created from parts of Plumas and Shasta Counties.

Further agricultural development depended on the provision of irrigation and transportation. Numerous reservoirs were built in the 1880's and 1890's, including Ward Lake, Round Valley Reservoir, McCoy Reservoir, Hog Flat Reservoir, and Buckhorn Reservoir. In particular, Leavitt Lake Reservoir was built in the 1880's to irrigate alfalfa on the higher terraces around Standish. These reservoirs stored water to increase the extent and productivity of agriculture.

Prior to 1891, the Nevada, California, and Oregon Railway (narrow gauge) was the only means of shipping from the Honey Lake Valley. Between 1891 and 1913 a road was completed from Amedee to Lakeview, Oregon, the Western Pacific Railway built through the valley to provide transcontinental service, and the Southern Pacific Railroad extended the main line of the Ogden Route from Fernley, Nevada to Susanville.

By 1910 the population in the Honey Lake Valley was about 2,000. Crops grown within the valley included native grass, alfalfa, wheat, barley, rye, potatoes, strawberries, melons, sugar beets, and fruit trees. Most of these were consumed within the valley.

Up to the present, beef production has dominated agriculture. Cattle graze on range land, native, and irrigated pasture, and consume most of the irrigated alfalfa. Strawberry plant production has increased in the last ten years to nearly equal revenues produced by cattle ranching.

The first lumbering activities were in Honey Lake Valley in the 1890's where lumber was barged across Honey Lake from Janesville and Milford to the Nevada, California, and Oregon (NCO) railroad at Amedee. Just after the turn of the century, there was a sawmill operating above Dry Valley. In 1912, a sawmill was constructed a quarter of a mile above Bayley Reservoir. Two years later, in 1914, the Red River Lumber Company started its first mill at Westwood, although the first log had been felled in 1912. Red River Lumber Company produced boxes, wooden Venetian blinds, plywood, windows, and doors. These products were shipped all over the United States and the rest of the world. The electric generating facility at Westwood supplied electricity for the company's mills and railroad, the town of Westwood, and had a surplus which the company sold to Susanville. When in peak production, the power plant used 600 cords of wood a day. In 1942, the Westwood mill sawed 212 million board feet which was a record at the time. In 1936, Red River opened a mill in Susanville. Red River Lumber Company sold out in 1944 to Fruit Growers Supply.

The three largest towns in the area are Susanville, the Lassen County seat, Westwood, and Chester. According to the 1980 census, Susanville has a population of 6,654; Westwood has a population of 2,898; and Chester has a population of 3,524. Other small communities include Doyle, Herlong, Janesville, Milford, Standish, Litchfield, Wendel, Ravendale, Termo, Madeline, and the Sierra Army Depot. The population of Lassen County is 21,675.

Fifty-three percent of the area is privately owned. Federal and State of California agencies administer the rest. The Bureau of Land Management administers 43 percent, the Department of Defense administers two percent, the National Forests administer one percent, and the California Department of Fish and Game administers one percent.

Recreational opportunities attract hunters, campers, fishermen, and boaters. Mule and black tail deer, pronghorn, waterfowl, and upland game birds are the chief game species. Eagle Lake and Lake Almanor provide marinas, water skiing, and fishing.

Major highways provide access to and through the area. These include U.S. Highway 395 and California State Highways 36, 44, and 139. Numerous county roads provide access to all communities. Most shipping is by truck, although there is rail service to Chester, Susanville, Wendel, Herlong, and Doyle.

Physiography, Relief, and Drainage

The survey area consists mainly of mountains and structural basins of the Great Basin. The principal mountains are various basaltic and andesitic mountains and flows which comprise the southern end of a series of tertiary and quaternary flows of the Cascade Mountain Range, and the extreme northern end of the Sierra Nevada Range, here appearing as the up-throw side of a tilted block. There are two large basins in the survey area, the Honey Lake Valley, at an elevation of 4,000 feet, in the southeast portion and Madeline Plains in the north, with an elevation of about 5,300 feet. These basins are filled with lacustrine sediments. The majority of the hillslopes are gently sloping to moderately steep and the surfaces are very stony.

The survey area has two distinct drainage patterns. The west side of the area, in the Lake Almanor basin, drains west to the Sacramento Valley and the Pacific Ocean. The east side drains flow east and terminate in enclosed basins. The major water bodies in the survey area include large natural lakes and manmade reservoirs. Honey Lake, a remnant of ancient Lake Lahontan, receives runoff from the Susan River and Long Valley Creek and is located southeast of Susanville. Neither Honey Lake nor Eagle Lake, located north of Susanville, have outlets. Lake Almanor is a manmade reservoir on the Feather River near Chester.

Water Supply

Water in this soil survey area is available from streams, reservoirs, springs, and wells. Quality of water is fair to good. Runoff from rainfall and snowfall is the main source of water. The Susan River and Willow Creek, Goodyear Creek, McCoy Flat and Hog Flat reservoirs provide most of the surface water used for irrigation. Numerous smaller reservoirs provide surface water for irrigation in localized areas. Three water districts provide water to a portion of the Honey Lake Valley. The largest, Leavitt Lake district provides water from McCoy Flat Reservoir.

Ground water provides a large part of the water used for irrigation and domestic use in the area. The ground water is replenished by the deep percolation of direct precipitation, seepage from streams, and excess irrigation water in the area.

There are several problems with the water supply in the area. Surface water is dependent on rainfall. In dry years, surface water can be gone by June 1st. Ground water is expensive because of the high pumping costs. Development of new deep wells in the past 10 years has resulted in a lowering of the water table.

Natural Vegetation

The natural vegetation depends primarily on precipitation which increases from a low in the eastern Honey Lake Valley to a high in the Almanor Basin.

Dry range land occurs in the eastern part of the survey area. They support shrub and grass plant communities. On remnant lakebeds affected by salt or alkali, the vegetation consists of shadscale, bud sagebrush, spiny hopsage, black greasewood, and salt grass. Upland soils on volcanic rock support Thurber needlegrass, bluebunch wheatgrass, Idaho fescue, and low or big sagebrush. Upland soils on granitic rock or alluvium support Indian ricegrass, needlegrasses, big sagebrush, bitterbrush, and desert peach.

Woodlands extend from the desert plateaus near the Nevada state line to the Almanor Basin. The driest woodland plant communities consist of western juniper and curlleaf mountainmahogany. Black oak and yellow pine woodlands with an understory of bitterbrush are on the foothills west of Susanville. All low elevations to the west are covered with mixed coniferous forest. The overstory may include Jeffrey or ponderosa pine, sugar pine, white fir, incense cedar, and lodgepole pine. The understory may include greenleaf manzanita, mountain whitethorn, snowbrush ceanothus, and squawcarpet. High elevations support a pure stand of white fir or California red fir. Aspen groves may occur wherever there is additional moisture from springs or seeps.

Meadows occur on floodplains on poorly drained soils throughout the survey area, but the largest ones are northwest of Honey Lake, in Elysian Valley, east of Westwood and northwest of Lake Almanor. They consist of perennial grasses and forbs, sedges, and rushes.

The perennial grass component of most plant communities has been reduced by overgrazing. Introduced annuals and shrubs have replaced many of these bunchgrasses. Among the most aggressive invaders are cheat grass, big sagebrush, and medusahead.

Other native and introduced species invade croplands. These weeds include Russian thistle, cereal rye, lambsquarter, pigweed, cheat grass, filaree, shepherd's purse and other mustards, sour dock, chicory, fiddleneck, cheeseweed, foxtail barley, dodder, and poverty weed.

Climate

The following climate narrative was prepared by the Natural Resource Conservation Service Water and Climate Center, Portland, Oregon.

Climate tables are created from climate station Susanville Airport, California.

Thunderstorm days, relative humidity, percent sunshine, and wind information, are estimated from First Order station Reno, Nevada.

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

In winter, the average temperature is 32.3 degrees F. and the average daily minimum temperature is 22.0 degrees F. The lowest temperature on record, which occurred at Susanville Airport on February 1, 1956 is -23 degrees. In summer, the average temperature is 66.9 degrees F. and the average daily maximum temperature is 86.0 degrees F. The highest temperature, which occurred at Susanville Airport on July 19, 1931 is 106 degrees.

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

The total annual precipitation is about 14.43 inches. Of this, about 0.43 inches, or 3 percent, usually falls in June

through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 4.70 inches at Susanville Airport on October 13, 1962. Thunderstorms occur on about 14 days each year, and most occur in July.

The average seasonal snowfall is 24.2 inches. The greatest snow depth at any one time during the period of record was 32 inches recorded on February 14, 1938. On an average, 14 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 18 inches recorded on March 12, 1967.

The average relative humidity in mid-afternoon is about 36 percent. Humidity is higher at night, and the average dawn is about 71 percent. The sun shines 96 percent of the time in summer and 76 percent of the time in winter. The prevailing wind is from the west northwest. Average wind speed is highest, 8.2 miles per hour, in April.

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 of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil 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 assign 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 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.

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined. Map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. The detail of mapping was selected to meet the anticipated long-term use of the survey, and the map units were designed to meet the needs for that use.

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 area.

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, Bonta coarse sandy loam, 0 to 2 percent slopes is a phase of the Bonta 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. Modoc-Truax complex, 0 to 2 percent slopes 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. Petescreek-Searles association, 9 to 30 percent slopes is an example.

This survey includes *miscellaneous* areas. Such areas have little or no soil material and support little or no vegetation. Dune land 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 Phrases

In the map unit descriptions that follow, a semi-tabular 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, *landform*) 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.

Map Unit Setting is given for the entire map unit. The MLRA, or major land resource area, is listed first. The MLRA is a broad ecological area with characteristic climate, topography, vegetation, water resources, soils and land use (3). This section identifies the landscape in which the map unit is located. The landscape positions given for the entire map unit generally are broader than those given for each component.

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 inextensive components that differ 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.

Component Description lists the characteristics of the major components. These include landform, parent material, typical vegetation, a brief profile description, slope, runoff, available water capacity, drainage class, and other important properties of the soil. Also provided are important interpretive groups including land capability classification and ecological site numbers.

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 managing these sites is provided under the heading "Rangeland" and "Forest Productivity and Management" in Part II of this publication. Further information also can be obtained from the local office of the Natural Resources Conservation Service.

Contrasting Inclusions lists additional information about the soils of minor extent in the map unit. The slope, landform, typical vegetation, and ecological site number are listed for each soil or miscellaneous area as appropriate.

101--Almanor-Whorled-Inville complex, 0 to 15 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Plateaus
Elevation: 5,400 to 5,600
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Almanor very gravelly sandy loam, 2 to 15 percent slopes--40 percent
Whorled very gravelly sandy loam, 2 to 15 percent slopes--35 percent
Inville very gravelly loam, 0 to 4 percent slopes--20 percent
Tahand gravelly sandy loam, 2 to 15 percent slopes--5 percent

Component Description

Almanor and similar soils
Landform: Backslopes of plateaus
Slope: 2 to 15 percent
Parent material: Volcanic ash and colluvium derived from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--serviceberry, greenleaf manzanita, sedge, swamp carex, whitethorn ceanothus, squawcarpet, pipsissewa, snowberry
Site index: Jeffrey pine--83 at an age base of 100 years
Site index: White fir--61 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 66

Typical profile:
Layer 1--0 to 5 inches; very gravelly sandy loam
Layer 2--5 to 17 inches; very gravelly sandy loam
Layer 3--17 to 40 inches; extremely gravelly sandy loam
Layer 4--40 to 50 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Component Description

Whorled and similar soils
Landform: Backslopes of plateaus
Slope: 2 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir; Forest understory--serviceberry, sedge, whitethorn ceanothus, squawcarpet, wildrye, needlegrass, snowberry
Site index: White fir--60 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 67

Typical profile:
Layer 1--0 to 5 inches; very gravelly sandy loam
Layer 2--5 to 27 inches; extremely gravelly sandy loam
Layer 3--27 to 31 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 1.4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Component Description

Inville and similar soils
Landform: Alluvial fans
Slope: 0 to 4 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--whitethorn ceanothus, needlegrass, manzanita, snowbrush ceanothus, mountain brome
Site index: Jeffrey pine--90 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 60

Typical profile:
Layer 1--0 to 10 inches; very gravelly loam
Layer 2--10 to 44 inches; very gravelly loam
Layer 3--44 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 40 to 59 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Tahand and similar soils
Composition: 0 to 5 percent
Slope: 2 to 15 percent
Landform: Mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

102--Alomax-Glean-Rock outcrop association, 9 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,800 to 7,300
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Alomax very stony sandy loam, 30 to 50 percent slopes--40 percent
Glean gravelly sandy loam, 9 to 30 percent slopes--25 percent
Rock outcrop, 9 to 50 percent slopes--25 percent
Longcreek very stony loam, 9 to 15 percent slopes--5 percent
Devada very stony loam, 9 to 15 percent slopes--3 percent
Keddie loam, 0 to 2 percent slopes--2 percent

Component Description

Alomax very stony sandy loam and similar soils
Landform: Backslopes of mountains, ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from basalt and andesite
Typical vegetation: Needlegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush

Typical profile:
Surface rock fragments: About 30 percent stones, 10 percent cobbles
Layer 1--0 to 3 inches; very stony sandy loam
Layer 2--3 to 15 inches; extremely stony sandy loam
Layer 3--15 to 25 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 0.8 inch
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Glean and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock
Typical vegetation: Needlegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush

Typical profile:
Layer 1--0 to 14 inches; gravelly sandy loam
Layer 2--14 to 44 inches; very gravelly sandy loam
Layer 3--44 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e

Ecological site: R021XE176CA--Loam 12-16

Component Description

Rock outcrop
Landform: Mountains
Slope: 9 to 50 percent

Component Properties and Qualities
Runoff: Very high

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Longcreek and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, antelope bitterbrush, mountain big sagebrush, basin wildrye
Ecological site: R023XF082CA

Devada and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, bluegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R023XF081CA

Keddie and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

103--Anawalt-Ninemile association, 5 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains, plateau
Elevation: 5,600 to 6,200
Precipitation: 10 to 13 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Anawalt very stony loam, 5 to 15 percent slopes--50 percent
Ninemile very stony loam, 5 to 15 percent slopes--30 percent
Puls very stony loam, 5 to 9 percent slopes--5 percent
Madeline very stony loam, 5 to 15 percent slopes--5 percent
Tunnison very cobbly clay, 5 to 9 percent slopes--4 percent
Indiano very stony loam, 9 to 15 percent slopes--3 percent
Rock outcrop, 9 to 15 percent slopes--2 percent
Rubble land, 9 to 15 percent slopes--1 percent

Component Description

Anawalt and similar soils
Landform: Backslopes of plateaus, summits of plateaus
Slope: 5 to 15 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Low sagebrush, antelope bitterbrush, Thurber needlegrass, Sandberg bluegrass, Idaho fescue, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 15 percent stones, 20 percent cobbles
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 16 inches; gravelly clay
Layer 3--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA—Shallow stony loam 12-16

Component Description

Ninemile and similar soils
Landform: Backslopes of plateaus, summits of plateaus
Slope: 5 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, bottlebrush squirreltail, antelope bitterbrush, bluegrass, low sagebrush, bluebunch wheatgrass, Idaho fescue, balsamroot

Typical profile:
Layer 1--0 to 2 inches; very stony loam
Layer 2--2 to 11 inches; clay
Layer 3--11 to 18 inches; gravelly clay
Layer 4--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Very slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA—Shallow stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Puls and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, low sagebrush, antelope bitterbrush, Thurber needlegrass, Idaho fescue, bluegrass
Ecological site: R021XE173CA—Shallow stony loam 12-16

Madeline and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Idaho fescue, Thurber needlegrass
Ecological site: R021XE174CA—Stony loam 12-16

Tunnison and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Big sagebrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush, rubber rabbitbrush, western wheatgrass
Ecological site: R023XF093CA

Indiano and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, basin wildrye, bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush
Ecological site: R021XE179CA--Warm stony loam 12-16

Rock outcrop
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Landform: Plateaus
Ecological site: None assigned

Rubble land
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Landform: Plateaus
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

104--Ardep sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,030 to 4,120
Precipitation: 6 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit

Frost-free period: 100 to 130 days

Composition

Ardep sandy loam, 0 to 2 percent slopes--85 percent
Epot very fine sandy loam, 0 to 2 percent slopes--6 percent
Zorravista loamy sand, 0 to 5 percent slopes--5 percent
Ardep very fine sand, 0 to 2 percent slopes--4 percent

Component Description

Ardep and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Littleleaf horsebrush, needleandthread, Indian ricegrass, basin big sagebrush, basin wildrye, fourwing saltbush

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 34 inches; loam
Layer 3--34 to 60 inches; stratified sand to fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3s-6
Nonirrigated land capability: 6s
Ecological site: R023XG054CA—Sandy terrace 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Epot and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bud sagebrush, black greasewood, shadscale, bottlebrush squirreltail
Ecological site: R023XG046CA—Sodic flat 6-9

Zorravista and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Dunes
Typical vegetation: Littleleaf horsebrush, black greasewood, rubber rabbitbrush, basin wildrye, spiny hopsage, Indian ricegrass, fourwing saltbush, basin big sagebrush, needleandthread
Ecological site: R023XG049CA—Sand dunes 6-9

Ardep and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bud sagebrush, Indian ricegrass, winterfat
Ecological site: R023XG055CA—Limy terrace 6-9

Management

Major uses: Livestock grazing, irrigated crops, alfalfa hay, pasture, and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

105--Ardep loam, 0 to 4 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,010 to 4,120
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Ardep loam, 0 to 4 percent slopes--85 percent
Chappuis silt loam, 0 to 2 percent slopes--10 percent
Ardep fine sandy loam, saline-sodic, 0 to 2 percent slopes--5 percent

Component Description

Ardep and similar soils
Landform: Lake terraces
Slope: 0 to 4 percent
Parent material: Lacustrine deposits

Typical profile:
Layer 1--0 to 6 inches; loam
Layer 2--6 to 34 inches; loam
Layer 3--34 to 60 inches; stratified sand to fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 4 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 3w-2
Nonirrigated land capability: 4w-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Chappuis and similar soils
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, basin wildrye, inland saltgrass, rabbitbrush, basin big sagebrush
Ecological site: R023XG059CA—Saline sodic loam 6-12

Ardep saline-sodic and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, black greasewood, bud sagebrush, shadscale
Ecological site: R023XG046CA—Sodic flat 6-9

Management

Major uses: Irrigated crops, alfalfa hay and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

106--Ardep fine sandy loam, saline-sodic, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,010 to 4,030
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Ardep fine sandy loam, 0 to 2 percent slopes--85 percent
Zorravista loamy sand, 0 to 5 percent slopes--5 percent
Wespac sand, 0 to 2 percent slopes--5 percent
Epot very fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Ardep and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 6 inches; fine sandy loam
Layer 2--6 to 20 inches; loam
Layer 3--20 to 60 inches; stratified sand to fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA—Sodic flat 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Zorravista and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Dunes
Typical vegetation: Rubber rabbitbrush, fourwing saltbush, basin big sagebrush, black greasewood, spiny hopsage, Indian ricegrass, basin wildrye, needleandthread, littleleaf horsebrush

Ecological site: R023XG049CA—Sand dunes 6-9

Wespac and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin wildrye, Indian ricegrass, bottlebrush squirreltail, needleandthread, basin big sagebrush
Ecological site: R023XG052CA—Sodic shallow sand 6-9

Epot and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, bud sagebrush, shadscale, black greasewood
Ecological site: R023XG046CA--Sodic flat 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

107--Ardep very fine sand, saline-sodic, 0 to 5 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,030 to 4,060
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Ardep very fine sand, 0 to 5 percent slopes--85 percent
Zorravista loamy sand, 0 to 5 percent slopes--5 percent
Mottsville loamy coarse sand, 0 to 2 percent slopes--5 percent
Ardep fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Ardep and similar soils
Landform: Lake terraces
Slope: 0 to 5 percent
Parent material: Lacustrine deposits
Typical vegetation: Indian ricegrass, bud sagebrush, winterfat

Typical profile:
Layer 1--0 to 3 inches; very fine sand
Layer 2--3 to 59 inches; stratified sand to fine sandy loam
Layer 3--59 to 60 inches; stratified sand to fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XG055CA—Limy terrace 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Zorravista and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Dunes
Typical vegetation: Black greasewood, Indian ricegrass, basin big sagebrush, spiny hopsage, basin wildrye, rubber rabbitbrush, littleleaf horsebrush, fourwing saltbush, needleandthread
Ecological site: R023XG049CA—Sand dunes 6-9

Mottsville and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnant
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, other shrubs, other perennial grasses, bottlebrush squirreltail, other perennial forbs
Ecological site: R021XE181CA

Ardep and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, black greasewood, shadscale, bud sagebrush
Ecological site: R023XG046CA—Sodic flat 6-9

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

108--Ardep-Wespac-Zorravista complex, 0 to 5 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,030 to 4,120
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Ardep sandy loam, 0 to 2 percent slopes--40 percent
Wespac sand, 0 to 2 percent slopes--35 percent
Zorravista fine sand, 2 to 5 percent slopes--15 percent
Playas silty clay, 0 to 1 percent slopes--5 percent
Highrock fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Ardep and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Fourwing saltbush, basin big sagebrush, basin wildrye, Indian ricegrass, needleandthread, littleleaf horsebrush

Typical profile:
Layer 1--0 to 5 inches; sandy loam
Layer 2--5 to 36 inches; loam
Layer 3--36 to 60 inches; stratified sand to fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG054CA—Sandy terrace 6-9

Component Description

Wespac and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Needleandthread, basin big sagebrush, basin wildrye, Indian ricegrass, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 5 inches; sand
Layer 2--5 to 12 inches; sandy clay loam
Layer 3--12 to 60 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG052CA—Sodic shallow sand 6-9

Component Description

Zorravista and similar soils
Landform: Dunes
Slope: 2 to 5 percent
Parent material: Eolian sands
Typical vegetation: Spiny hopsage, basin big sagebrush, fourwing saltbush, rubber rabbitbrush, littleleaf horsebrush, needleandthread, black greasewood, basin wildrye, Indian ricegrass

Typical profile:
Layer 1--0 to 4 inches; fine sand
Layer 2--4 to 60 inches; stratified fine sand to sand to loamy fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Negligible

Permeability class (root zone): Very rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG049CA—Sand dunes 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Playas silty clay
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Playas
Ecological site: None assigned

Highrock and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, black greasewood, bottlebrush squirreltail, basin wildrye, spiny hopsage
Ecological site: R023XG047CA—Sodic terrace 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

109--Artray sandy loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Fan piedmont
Elevation: 4,200 to 5,000
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Artray sandy loam, 2 to 9 percent slopes--85 percent
Aquolls gravelly sandy loam, 2 to 9 percent slopes--5 percent
Mottsville gravelly loamy coarse sand, 2 to 9 percent slopes--5 percent
Calpine sandy loam, 2 to 9 percent slopes--5 percent

Component Description

Artray and similar soils
Landform: Alluvial fans
Slope: 2 to 9 percent
Parent material: Alluvium derived from granite

Typical profile:
Layer 1--0 to 9 inches; sandy loam
Layer 2--9 to 48 inches; coarse sandy loam
Layer 3--48 to 60 inches; coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 4w-2
Nonirrigated land capability: 4w-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Aquolls and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Lakeshores
Ecological site: None assigned

Mottsville and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, needleandthread, basin big sagebrush, desert peach, desert needlegrass
Ecological site: R026XF051CA—Granitic fan 9-12

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Alluvial fans
Typical vegetation: Beardless wildrye, mountain big sagebrush, Indian ricegrass, needleandthread, western needlegrass, antelope bitterbrush
Ecological site: R021XE181CA—Granitic fan 12-16

Management

Major uses: Irrigated grass hay and pasture and livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

110--Badenaugh stony sandy loam, 5 to 15 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,200 to 4,600
Precipitation: 10 to 12 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Badenaugh stony sandy loam, 5 to 15 percent slopes--80 percent
Mottsville gravelly loamy coarse sand, 5 to 15 percent slopes--6 percent
Graufels gravelly loamy coarse sand, 5 to 15 percent slopes--6 percent
Barnard stony sandy loam, 5 to 15 percent slopes--4 percent
Springmeyer sandy loam, 5 to 15 percent slopes--4 percent

Component Description

Badenaugh and similar soils
Landform: Fan remnants
Slope: 5 to 15 percent
Parent material: Alluvium derived from mixed
Typical vegetation: Bluebunch wheatgrass, big sagebrush, green ephedra, Anderson peachbrush, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 5 percent stones, 5 percent cobbles
Layer 1--0 to 13 inches; stony sandy loam
Layer 2--13 to 29 inches; very gravelly sandy clay loam
Layer 3--29 to 60 inches; stratified very cobbly sandy loam to extremely cobbly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R026XF052CA—Granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville and similar soils
Composition: 0 to 6 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, antelope bitterbrush, desert needlegrass, basin big sagebrush, bottlebrush squirreltail, Indian ricegrass, desert peach
Ecological site: R026XF051CA—Granitic fan 9-12

Graufels and similar soils
Composition: 0 to 6 percent
Slope: 5 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Wyoming big sagebrush, green ephedra, Anderson peachbrush, antelope bitterbrush, needlegrass, bluebunch wheatgrass
Ecological site: R026XF052CA—Granitic upland 9-12

Barnard and similar soils
Composition: 0 to 4 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Wyoming big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R023XF082CA—Stony loam 9-12

Springmeyer and similar soils
Composition: 0 to 4 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Thurber needlegrass, yellow rabbitbrush, big sagebrush, other annual forbs, other shrubs, antelope bitterbrush, other perennial grasses, other perennial forbs, basin wildrye, bottlebrush squirreltail

Ecological site: R021XE186CA—Loamy terrace 12-16

Management

Major uses: Livestock grazing, urban development, and wildlife habitat

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

111--Baileycreek-Weste complex, 5 to 15 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,600 to 4,900
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Baileycreek very gravelly loam, 5 to 15 percent slopes--45 percent
Weste very gravelly sandy loam, 5 to 15 percent slopes--35 percent
Inville very gravelly sandy loam, 5 to 15 percent slopes--10 percent
Weste very gravelly sandy loam, 5 to 15 percent slopes, extremely stony--5 percent
Baileycreek very gravelly loam, 5 to 15 percent slopes, extremely stony--5 percent

Component Description

Baileycreek and similar soils
Landform: Mountains
Slope: 5 to 15 percent, south aspect
Parent material: Volcanic ash and colluvium derived from basalt and andesite and residuum weathered from basalt or andesite
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--snowbrush ceanothus, manzanita, needlegrass, mountain brome, whitethorn ceanothus
Site index: Jeffrey pine--112 at an age base of 100 years
Additional forest note: Dunning site class: I
Additional forest note: Cactos site index: 78

Typical profile:
Layer 1--0 to 9 inches; very gravelly loam
Layer 2--9 to 30 inches; very gravelly loam
Layer 3--30 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Mountains
Slope: 5 to 15 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, sugar pine, white fir; Forest understory--squawcarpet, whitethorn ceanothus, greenleaf manzanita
Site index: Jeffrey pine--101 at an age base of 100 years
Site index: White fir--53 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 70

Typical profile:
Layer 1--0 to 12 inches; very gravelly sandy loam
Layer 2--12 to 26 inches; very gravelly loam
Layer 3--26 to 30 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Inville and similar soils
Composition: 0 to 10 percent
Slope: 5 to 15 percent
Landform: Alluvial fans
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--snowbrush ceanothus, whitethorn ceanothus, manzanita
Ecological site: None assigned

Weste and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent, south aspect
Landform: Mountains
Typical vegetation: Forest canopy--Jeffrey pine, sugar pine, white fir; Forest understory--whitethorn ceanothus, greenleaf manzanita, squawcarpet
Ecological site: None assigned

Baileycreek and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent, south aspect
Landform: Mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--mountain brome, snowbrush ceanothus, manzanita, needlegrass, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

112--Baileycreek-Weste complex, 15 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,700 to 5,000
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Baileycreek very stony loam, 15 to 30 percent slopes--50 percent
Weste very stony sandy loam, 15 to 30 percent slopes--35 percent
Swainow very gravelly sandy loam, 15 to 30 percent slopes--5 percent
Rock outcrop--5 percent
Weste very stony sandy loam, 15 to 30 percent slopes, extremely bouldery--3 percent
Baileycreek very stony loam, 15 to 30 percent slopes, extremely stony--2 percent

Component Description

Baileycreek and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, south aspect
Parent material: Volcanic ash and colluvium derived from basalt and andesite and residuum weathered from basalt or andesite
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--snowbrush ceanothus, mountain brome, whitethorn ceanothus, needlegrass, manzanita
Site index: Jeffrey pine--112 at an age base of 100 years
Additional forest note: Dunning site class: I
Additional forest note: Cactos site index: 78

Typical profile:
Surface rock fragments: About 20 percent stones, 5 percent cobbles
Layer 1--0 to 9 inches; very stony loam
Layer 2--9 to 23 inches; very gravelly loam
Layer 3--23 to 27 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock

Typical vegetation: Forest canopy--Jeffrey pine, sugar pine, white fir; Forest understory--squawcarpet, greenleaf manzanita, whitethorn ceanothus
Site index: Jeffrey pine--101 at an age base of 100 years
Site index: White fir--53 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 70

Typical profile:
Surface rock fragments: About 20 percent stones, 5 percent cobbles
Layer 1--0 to 12 inches; very stony sandy loam
Layer 2--12 to 34 inches; very gravelly loam
Layer 3--34 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Swainow and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--mountain brome, whitethorn ceanothus, manzanita, needlegrass, snowbrush ceanothus
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Landform: Ridges
Ecological site: None assigned

Weste and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, sugar pine, white fir; Forest understory--squawcarpet, whitethorn ceanothus, greenleaf manzanita
Ecological site: None assigned

Baileycreek and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--manzanita, snowbrush ceanothus, mountain brome, needlegrass, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

113--Baileycreek-Weste complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,700 to 5,400
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Baileycreek very gravelly loam, 30 to 50 percent slopes--50 percent
Weste very stony sandy loam, 30 to 50 percent slopes--35 percent
Rubble land, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Swainow very gravelly sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Baileycreek and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Volcanic ash and colluvium derived from basalt and andesite and residuum weathered from basalt or andesite

Typical vegetation: Forest canopy--Jeffrey pine, white fir; Forest understory--mountain brome, snowbrush ceanothus, manzanita, needlegrass, whitethorn ceanothus
Site index: Jeffrey pine--112 at an age base of 100 years
Additional forest note: Dunning site class: I
Additional forest note: Cactos site index: 78

Typical profile:
Surface rock fragments: About 20 percent stones, 5 percent cobbles
Layer 1--0 to 10 inches; very gravelly loam
Layer 2--10 to 21 inches; very gravelly loam
Layer 3--21 to 25 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, sugar pine, white fir; Forest understory--greenleaf manzanita, squawcarpet, whitethorn ceanothus
Site index: Jeffrey pine--101 at an age base of 100 years
Site index: White fir--53 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 70

Typical profile:
Layer 1--0 to 14 inches; very stony sandy loam
Layer 2--14 to 29 inches; very gravelly loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Swainow and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Plateaus
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus, needlegrass, mountain brome
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

114--Barnard stony sandy loam, 2 to 15 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,400 to 4,600
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Barnard stony sandy loam, 2 to 15 percent slopes--70 percent
Galeppi sandy loam, 2 to 15 percent slopes--10 percent
Hunnton cobbly sandy loam, 2 to 9 percent slopes--10 percent
Calpine sandy loam, 2 to 15 percent slopes--10 percent

Component Description

Barnard and similar soils
Landform: Fan remnant
Slope: 2 to 15 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, antelope bitterbrush, Thurber needlegrass, basin wildrye

Typical profile:
Surface rock fragments: About 10 percent stones, 5 percent cobbles
Layer 1--0 to 3 inches; stony sandy loam
Layer 2--3 to 7 inches; sandy loam
Layer 3--7 to 11 inches; sandy clay loam
Layer 4--11 to 20 inches; clay
Layer 5--20 to 26 inches; indurated
Layer 6--26 to 60 inches; very gravelly loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R023XF082CA—Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Galeppi and similar soils
Composition: 0 to 10 percent
Slope: 2 to 15 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, needlegrass, antelope bitterbrush, Anderson peachbrush, Wyoming big sagebrush, green ephedra
Ecological site: R026XF052CA—Granitic upland 9-12

Hunnton and similar soils
Composition: 0 to 10 percent
Slope: 2 to 9 percent
Landform: Fan remnant
Typical vegetation: Basin wildrye, Wyoming big sagebrush, bluebunch wheatgrass, other perennial grasses, antelope bitterbrush, other shrubs, Thurber needlegrass, other perennial forbs
Ecological site: R023XF082CA—Stony loam 9-12

Calpine and similar soils
Composition: 0 to 10 percent
Slope: 2 to 15 percent
Landform: Alluvial fans
Typical vegetation: Antelope bitterbrush, needleandthread, beardless wildrye, western needlegrass, mountain big sagebrush, Indian ricegrass
Ecological site: R021XE181CA—Granitic fan 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

115--Beckwourth-Fordney complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,300 to 5,350
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Beckwourth loamy sand, 0 to 2 percent slopes--50 percent
Fordney loamy sand, 0 to 2 percent slopes--35 percent
Incy fine sand, 0 to 2 percent slopes--8 percent
Herjun loamy sand, 0 to 2 percent slopes--7 percent

Component Description

Beckwourth and similar soils
Landform: Stream terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 12 inches; loamy sand
Layer 2--12 to 23 inches; sandy loam
Layer 3--23 to 60 inches; stratified sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderate
Available water capacity: About 4 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Somewhat poorly drained

Interpretive Groups
Irrigated land capability: 4w-1
Nonirrigated land capability: 4w-1
Ecological site: None assigned

Component Description

Fordney and similar soils
Landform: Stream terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits derived from tuff
Typical vegetation: Mountain big sagebrush, beardless wildrye, Idaho fescue, antelope bitterbrush, needleandthread

Typical profile:
Layer 1--0 to 10 inches; loamy sand
Layer 2--10 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 4e-1
Ecological site: R021XE180CA—Sandy loam fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Incy and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Dunes
Typical vegetation: Indian ricegrass, antelope bitterbrush, arrowleaf balsamroot, western wheatgrass, sand dropseed, needleandthread, Wyoming big sagebrush
Ecological site: R026XF022CA—Granitic fan 9-12

Herjun and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Western wheatgrass, inland saltgrass, basin wildrye, rush, bluegrass, alkaligrass, black greasewood
Ecological site: R023XG058CA—Saline-sodic subirrigated 6-16

Management

Major uses: Livestock grazing, irrigated crops, and alfalfa hay
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

116--Bieber cobbly loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,500 to 5,200
Precipitation: 12 to 16 inches
Air temperature: 47 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Bieber cobbly loam, 2 to 9 percent slopes--80 percent
Modoc sandy loam, 2 to 9 percent slopes--10 percent

Barnard stony sandy loam, 2 to 9 percent slopes--10 percent

Component Description

Bieber and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Bluebunch wheatgrass, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass, low sagebrush

Typical profile:
Surface rock fragments: About 15 percent cobbles
Layer 1--0 to 6 inches; cobbly loam
Layer 2--6 to 11 inches; clay loam
Layer 3--11 to 18 inches; clay
Layer 4--18 to 60 inches; indurated

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 12 to 20 inches
Permeability class (root zone): Very slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4e-8
Nonirrigated land capability: 6s
Ecological site: R021XE173CA—Shallow stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Modoc and similar soils
Composition: 0 to 10 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Idaho fescue, basin wildrye, basin big sagebrush, bluebunch wheatgrass
Ecological site: R021XE186CA—Loamy terrace 12-16

Barnard and similar soils
Composition: 0 to 10 percent
Slope: 2 to 9 percent
Landform: Fan remnant
Typical vegetation: Basin wildrye, bluebunch wheatgrass, antelope bitterbrush, Thurber needlegrass, Wyoming big sagebrush
Ecological site: R023XF082CA—Stony loam 9-12

Management

Major uses: Livestock grazing and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

117--Biscaro clay loam, 0 to 2 percent slopes, ponded

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 5,340 to 5,340
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Biscaro clay loam, 0 to 2 percent slopes--85 percent
Beckwourth loamy sand, 0 to 2 percent slopes--8 percent
Pit clay, 0 to 2 percent slopes--7 percent

Component Description

Biscaro and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from sandstone and siltstone

Typical profile:
Layer 1--0 to 10 inches; clay loam
Layer 2--10 to 21 inches; silty clay
Layer 3--21 to 38 inches; loam
Layer 4--38 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 24 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 6 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4s-3
Nonirrigated land capability: 4s-3
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Beckwourth and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Ecological site: None assigned

Pit and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Flood plains
Typical vegetation: Nevada bluegrass, beardless wildrye, silver sagebrush, western wheatgrass
Ecological site: R023XF092CA—Clay floodplain 9-16

Management

Major uses: Irrigated grass hay and pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

118--Biscaro-Calnat complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 5,330 to 5,350
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Biscaro sandy loam, 0 to 2 percent slopes--50 percent
Calnat loamy sand, 0 to 2 percent slopes--35 percent
Beckwourth loamy sand, 0 to 2 percent slopes--5 percent
Truax sandy loam, 0 to 2 percent slopes--6 percent
Corral sandy loam, 0 to 2 percent slopes--2 percent
Modoc sandy loam, 0 to 2 percent slopes--2 percent

Component Description

Biscaro and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from sandstone and siltstone

Typical profile:
Layer 1--0 to 10 inches; sandy loam
Layer 2--10 to 21 inches; silty clay
Layer 3--21 to 38 inches; loam
Layer 4--38 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 24 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4s-3
Nonirrigated land capability: 4s-3
Ecological site: None assigned

Component Description

Calnat and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits

Typical profile:
Layer 1--0 to 8 inches; loamy sand
Layer 2--8 to 25 inches; sandy clay loam
Layer 3--25 to 38 inches; loam
Layer 4--38 to 42 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches

Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4s-3
Nonirrigated land capability: 4s-3
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Truax and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, basin wildrye, antelope bitterbrush, bottlebrush squirreltail, needleandthread, Thurber needlegrass
Ecological site: R021XE186CA—Loamy terrace 12-16

Beckwourth and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Ecological site: None assigned

Corral and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Rock pediment
Typical vegetation: Big sagebrush, basin wildrye, needleandthread
Ecological site: R021XE195CA—Sandy loam terrace 12-16

Modoc drained and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, basin big sagebrush, basin wildrye, Idaho fescue
Ecological site: R021XE186CA—Loamy terrace 12-16

Management

Major uses: Irrigated grass hay and pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

119--Biscaro-Playas complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 5,250 to 5,350
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Biscaro silt loam, 0 to 2 percent slopes--65 percent
Playas silty clay, 0 to 1 percent slopes--20 percent
Pit clay, 0 to 2 percent slopes--4 percent
Cleghorn sandy loam, 0 to 2 percent slopes--4 percent
Biscaro sandy loam, 0 to 2 percent slopes--3 percent
Ravendale silty clay, 0 to 2 percent slopes--4 percent

Component Description

Biscaro and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from sandstone and siltstone
Typical vegetation: Black greasewood, Nevada bluegrass, spiny hopsage, basin wildrye, rubber rabbitbrush, big sagebrush

Typical profile:
Layer 1--0 to 2 inches; silt loam
Layer 2--2 to 27 inches; silty clay
Layer 3--27 to 37 inches; extremely gravelly loam
Layer 4--37 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 24 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4s-3
Ecological site: R021XE192CA—Silty sodic flat 12-16

Component Description

Playas silty clay
Landform: Playas

Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Pit and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Flood plains
Typical vegetation: Silver sagebrush, Nevada bluegrass, beardless wildrye, western wheatgrass
Ecological site: R023XF092CA—Clay floodplain 9-16

Cleghorn and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Fan remnant
Typical vegetation: Basin wildrye, Wyoming big sagebrush, needleandthread, Thurber needlegrass
Ecological site: R023XF091CA—Loamy upland 9-12

Ravendale ponded and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Basin floors
Ecological site: None assigned

Biscaro and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

120--Blickenstaff sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,000 to 4,100
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Blickenstaff sandy loam, 0 to 2 percent slopes--85 percent
Honeylake clay loam, 0 to 1 percent slopes--8 percent
Truckee loam, 0 to 2 percent slopes--7 percent

Component Description

Blickenstaff and similar soils
Landform: Stream terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite

Typical profile:
Layer 1--0 to 15 inches; sandy loam
Layer 2--15 to 34 inches; gravelly sandy loam
Layer 3--34 to 60 inches; gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 2e-1
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Honeylake and similar soils
Composition: 0 to 8 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Typical vegetation: Basin wildrye, inland saltgrass, western wheatgrass, rush, bluegrass, alkaligrass, black greasewood

Ecological site: R023XG058CA—Saline sodic subirrigated 6-16

Truckee and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

121--Honeylake clay loam, 0 to 1 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,300
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Honeylake clay loam, 0 to 1 percent slopes--95 percent
Blickenstaff sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Honeylake and similar soils
Landform: Lake terraces
Slope: 0 to 1 percent
Parent material: Alluvium derived from granite over lacustrine deposits
Typical vegetation: Black greasewood, alkaligrass, bluegrass, rush, basin wildrye, western wheatgrass, inland saltgrass

Typical profile:
Layer 1--0 to 16 inches; clay loam
Layer 2--16 to 26 inches; sandy loam
Layer 3--26 to 41 inches; sandy loam
Layer 4--41 to 56 inches; coarse sandy loam
Layer 5--56 to 67 inches; stratified coarse sandy loam to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Moderately slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: Rare
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 4w-6
Nonirrigated land capability: 7w
Ecological site: R023XG058CA—Saline-sodic subirrigated 6-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Blickenstaff and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Ecological site: None assigned

Management

Major uses: Livestock grazing and irrigated grass hay and pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

122--Bobert sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,000 to 4,100
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Bobert sandy loam, 0 to 2 percent slopes--90 percent
Bobert loamy sand, 0 to 2 percent slopes--5 percent

Standish fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Bobert and similar soils
Landform: Stream terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Basin big sagebrush, rabbitbrush, inland saltgrass, basin wildrye, black greasewood

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 14 inches; sandy clay loam
Layer 3--14 to 26 inches; loam
Layer 4--26 to 60 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 4s-6
Nonirrigated land capability: 7s
Ecological site: R023XG059CA—Saline-sodic loam 6-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bobert and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Western wheatgrass, inland saltgrass, seepweed, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XG050CA—Saline-sodic flat 6-9

Standish and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Rabbitbrush, inland saltgrass, basin wildrye, black greasewood, basin big sagebrush
Ecological site: R023XG059CA—Saline-sodic loam 6-12

Management

Major uses: Irrigated grass hay and pasture and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

123--Bobert sandy loam, lake terrace, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,010
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Bobert sandy loam, 0 to 2 percent slopes--85 percent
Calneva silt loam, 0 to 1 percent slopes--5 percent
Honlak loam, 0 to 2 percent slopes--5 percent
Mazuma fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Bobert and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Seepweed, bottlebrush squirreltail, western wheatgrass, inland saltgrass, spiny hopsage, black greasewood

Typical profile:
Layer 1--0 to 4 inches; sandy loam
Layer 2--4 to 20 inches; sandy clay loam
Layer 3--20 to 28 inches; loam
Layer 4--28 to 60 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4s-6
Nonirrigated land capability: 7s
Ecological site: R023XG050CA—Saline-sodic flat 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calneva and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Basin floors
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail
Ecological site: R023XG046CA

Honlak and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Bluegrass, inland saltgrass, western wheatgrass, basin wildrye, beardless wildrye, alkaligrass, black greasewood, rush
Ecological site: R023XG058CA—Saline-sodic subirrigated 6-16

Mazuma and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, basin wildrye, shadscale, seepweed, bottlebrush squirreltail
Ecological site: R023XG050CA--Saline-sodic flat 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

124--Bonta coarse sandy loam, 9 to 15 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,100 to 4,300
Precipitation: 16 to 20 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Bonta coarse sandy loam, 9 to 15 percent slopes--80 percent
Janile bouldery loamy coarse sand, 9 to 15 percent slopes--10 percent
Lasco gravelly sandy loam, 9 to 15 percent slopes--10 percent

Component Description

Bonta and similar soils
Landform: Toeslopes of mountains
Slope: 9 to 15 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--California black oak, Douglas fir, Jeffrey pine, white fir; Forest understory--whitethorn ceanothus, western needlegrass, big sagebrush, greenleaf manzanita, other perennial grasses, antelope bitterbrush
Site index: Jeffrey pine--64 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 43

Typical profile:
Layer 1--0 to 12 inches; coarse sandy loam
Layer 2--12 to 36 inches; coarse sandy loam
Layer 3--36 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Janile and similar soils
Composition: 0 to 10 percent
Slope: 9 to 15 percent, south aspect

Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--Idaho fescue, Columbia needlegrass, bottlebrush squirreltail, antelope bitterbrush, mountain big sagebrush
Ecological site: None assigned

Lasco and similar soils
Composition: 0 to 10 percent
Slope: 9 to 15 percent
Landform: Mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--big sagebrush, antelope bitterbrush, Idaho fescue
Ecological site: None assigned

Management

Major uses: Timber production, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

125--Bonta coarse sandy loam, 15 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Hills
Elevation: 4,200 to 4,500
Precipitation: 16 to 20 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Bonta coarse sandy loam, 15 to 30 percent slopes--80 percent
Lasco gravelly sandy loam, 15 to 30 percent slopes--10 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Bonta coarse sandy loam, 15 to 30 percent slopes, very bouldery--5 percent

Component Description

Bonta and similar soils
Landform: Toeslopes of hills
Slope: 15 to 30 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--California black oak, Douglas fir, Jeffrey pine, white fir; Forest understory--other perennial grasses, antelope bitterbrush, whitethorn ceanothus, big sagebrush, greenleaf manzanita, western needlegrass
Site index: Jeffrey pine--64 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 43

Typical profile:
Layer 1--0 to 12 inches; coarse sandy loam
Layer 2--12 to 36 inches; coarse sandy loam
Layer 3--36 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lasco and similar soils
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Landform: Mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--big sagebrush, antelope bitterbrush, Idaho fescue
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Hills
Ecological site: None assigned

Bonta and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent

Landform: Toeslopes of hills
Typical vegetation: Forest canopy--California black oak, Douglas fir, Jeffrey pine, white fir; Forest understory--other perennial grasses, greenleaf manzanita, big sagebrush, whitethorn ceanothus, antelope bitterbrush, western needlegrass
Ecological site: None assigned

Management

Major uses: Timber production, urban development and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

126--Bonta gravelly sandy loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,800 to 5,600
Precipitation: 25 to 30 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Bonta gravelly sandy loam, 30 to 50 percent slopes--75 percent
Bonta gravelly sandy loam, 30 to 50 percent slopes, very bouldery--5 percent
Lasco gravelly sandy loam, 30 to 50 percent slopes--5 percent
Waterman gravelly loamy coarse sand, 30 to 50 percent slopes, very bouldery--5 percent
Gerle sandy loam, 30 to 50 percent slopes--5 percent
Chimney gravelly loamy coarse sand, 30 to 50 percent slopes--5 percent

Component Description

Bonta and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine, white fir; Forest understory--mountain big sagebrush, needlegrass, mountain brome, whitethorn ceanothus, snowbrush ceanothus, antelope bitterbrush
Site index: Jeffrey pine--88 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 62

Typical profile:
Layer 1--0 to 12 inches; gravelly sandy loam
Layer 2--12 to 34 inches; gravelly sandy loam
Layer 3--34 to 38 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bonta and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine, white fir; Forest understory--snowbrush ceanothus, whitethorn ceanothus, mountain brome, mountain big sagebrush, needlegrass, antelope bitterbrush
Ecological site: None assigned

Lasco and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus, needlegrass, mountain brome
Ecological site: None assigned

Waterman and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges

Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--squawcarpet, Columbia needlegrass, bottlebrush squirreltail, mountain big sagebrush, antelope bitterbrush, Idaho fescue
Ecological site: None assigned

Gerle and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of moraines
Typical vegetation: Forest canopy--white fir, Forest understory--huckleberry oak, whitethorn ceanothus, currant, chinkapin, western brackenfern
Ecological site: None assigned

Chimney and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--antelope bitterbrush, Columbia needlegrass, bottlebrush squirreltail, Idaho fescue, squawcarpet, mountain big sagebrush
Ecological site: None assigned

Management

Major uses: Timber production and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

127--Boulder Lake silty clay, 0 to 1 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 5,600 to 5,650
Precipitation: 10 to 12 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Boulder Lake silty clay, 0 to 2 percent slopes--90 percent
Truax sandy loam, 0 to 2 percent slopes--3 percent
Lakeview loam, 0 to 2 percent slopes--3 percent
Boulder Lake silty clay, 0 to 2 percent slopes--4 percent

Component Description

Boulder Lake and similar soils
Landform: Basin floors
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Sedge, western wheatgrass, silver sagebrush, bottlebrush squirreltail, beardless wildrye, rush, mat muhly, Nevada bluegrass

Typical profile:
Layer 1--0 to 12 inches; silty clay
Layer 2--12 to 43 inches; clay
Layer 3--43 to 60 inches; silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Negligible
Permeability class (root zone): Very slow
Available water capacity: About 10 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Very poorly drained

Interpretive Groups
Nonirrigated land capability: 5w
Ecological site: R023XF092CA—Clay floodplain 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Boulder Lake and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Silver sagebrush, lesser spikemoss, Nevada bluegrass, western wheatgrass, mat muhly, beardless wildrye, rush, clubmoss, lake quillwort
Ecological site: R021XE194CA—Wet clay basin 12-16

Truax and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, antelope bitterbrush, Thurber needlegrass, needleandthread, bottlebrush squirreltail, basin wildrye
Ecological site: R021XE186CA—Loamy terrace 12-16

Lakeview and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Livestock grazing and wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

128--Boulder Lake silty clay, wet, 0 to 1 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Bolson
Elevation: 5,600 to 5,650
Precipitation: 10 to 12 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Boulder Lake silty clay, wet 0 to 1 percent slopes--95 percent
Boulder Lake silty clay, 0 to 1 percent slopes--5 percent

Component Description

Boulder Lake and similar soils
Landform: Basin floors
Slope: 0 to 1 percent
Parent material: Lacustrine deposits
Typical vegetation: Lake quillwort, western wheatgrass, silver sagebrush, beardless wildrye, Nevada bluegrass, rush, clubmoss, mat muhly, lesser spikemoss

Typical profile:
Layer 1--0 to 12 inches; silty clay
Layer 2--12 to 43 inches; clay
Layer 3--43 to 60 inches; silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Very slow
Available water capacity: About 10 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Very poorly drained

Interpretive Groups
Nonirrigated land capability: 6w
Ecological site: R021XE194CA—Wet clay basin 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Boulder Lake and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Basin floors
Typical vegetation: Western wheatgrass, beardless wildrye, bottlebrush squirreltail, Nevada bluegrass, mat muhly, silver sagebrush, sedge, rush
Ecological site: R023XF092CA—Clay floodplain 9-16

Management

Major uses: Livestock grazing and wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

129--Brubeck very cobbly clay, 2 to 5 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,500 to 4,800
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Brubeck very cobbly clay, 2 to 5 percent slopes--85 percent
Rock outcrop, 5 to 9 percent slopes--5 percent
Loomis very cobbly loam, 5 to 9 percent slopes--5 percent
Horsecamp very cobbly silty clay, 2 to 5 percent slopes--5 percent

Component Description

Brubeck and similar soils
Landform: Plateaus
Slope: 2 to 5 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Littleleaf horsebrush, western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent stones, 30 percent cobbles

Layer 1--0 to 2 inches; very cobbly clay
Layer 2--2 to 32 inches; clay
Layer 3--32 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA—Clay upland 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Escarpments
Ecological site: None assigned

Loomis and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Backslopes of plateaus
Typical vegetation: Thurber needlegrass, bottlebrush squirreltail, Sandberg bluegrass, black sagebrush, bluebunch wheatgrass
Ecological site: R023XF087CA

Horsecamp and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Plateaus
Typical vegetation: Beardless wildrye, rubber rabbitbrush, big sagebrush, western wheatgrass, littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail
Ecological site: R023XF084CA—Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

130--Brubeck very cobbly clay, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,500 to 5,000
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Brubeck very cobbly clay, 5 to 30 percent slopes--80 percent
Shinnpeak very cobbly sandy loam, 5 to 15 percent slopes--4 percent
Horsecamp very cobbly silty clay, 5 to 9 percent slopes--4 percent
Hunnton cobbly sandy loam, 5 to 9 percent slopes--4 percent
Cleghorn sandy loam, 2 to 5 percent slopes--4 percent
Rock outcrop, 15 to 30 percent slopes--4 percent

Component Description

Brubeck and similar soils
Landform: Plateaus
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Beardless wildrye, western wheatgrass, big sagebrush, rubber rabbitbrush, littleleaf horsebrush, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly clay
Layer 2--2 to 32 inches; clay
Layer 3--32 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None

Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA—Clay upland 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Shinnpeak and similar soils
Composition: 0 to 4 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Black sagebrush, other perennial forbs, other perennial grasses, bottlebrush squirreltail, other shrubs, Thurber needlegrass, Sandberg bluegrass, bluebunch wheatgrass
Ecological site: R023XF087CA—Very shallow stony loam 9-12

Horsecamp and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, littleleaf horsebrush, western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail
Ecological site: R023XF084CA—Clay upland 9-16

Hunnton and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Fan remnant
Typical vegetation: Bluebunch wheatgrass, antelope bitterbrush, Thurber needlegrass, other shrubs, Wyoming big sagebrush, basin wildrye, other perennial forbs, other perennial grasses
Ecological site: R023XF082CA—Stony loam 9-12

Cleghorn and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Fan remnant
Typical vegetation: Thurber needlegrass, needleandthread, basin wildrye, Wyoming big sagebrush
Ecological site: R023XF091CA

Rock outcrop
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

131--Brubeck-Diaz association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,500 to 5,500
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Brubeck very cobbly clay, 2 to 30 percent slopes--50 percent
Diaz very cobbly silt loam, 2 to 30 percent slopes--35 percent
Loomis very cobbly loam, 5 to 30 percent slopes--5 percent
Corral loam, 2 to 30 percent slopes--5 percent
Verdico cobbly sandy loam, 2 to 30 percent slopes--3 percent
Devada very cobbly loam, 15 to 30 percent slopes--2 percent

Component Description

Brubeck and similar soils
Landform: Toeslopes of plateaus
Slope: 2 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Rubber rabbitbrush, western wheatgrass, big sagebrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush

Typical profile:
Surface rock fragments: About 30 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly clay
Layer 2--2 to 32 inches; clay
Layer 3--32 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA—Clay upland 9-16

Component Description

Diaz and similar soils
Landform: Plateaus
Slope: 2 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, big sagebrush, basin wildrye, antelope bitterbrush

Typical profile:
Surface rock fragments: About 20 percent cobbles
Layer 1--0 to 3 inches; very cobbly silt loam
Layer 2--3 to 7 inches; silty clay loam
Layer 3--7 to 25 inches; silty clay
Layer 4--25 to 32 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA—Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Loomis and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Backslopes of plateaus
Typical vegetation: Bluebunch wheatgrass, black sagebrush, Thurber needlegrass, bottlebrush squirreltail, Sandberg bluegrass
Ecological site: R023XF087CA—Very shallow stony loam 9-12

Corral and similar soils
Composition: 0 to 5 percent
Slope: 2 to 30 percent
Landform: Escarpments
Typical vegetation: Needleandthread, basin wildrye, Thurber needlegrass, big sagebrush
Ecological site: R023XF091CA—Loamy upland 9-12

Verdico and similar soils
Composition: 0 to 3 percent
Slope: 2 to 30 percent
Landform: Backslopes of rock pediments
Typical vegetation: Spiny hopsage, Webber needlegrass, Indian ricegrass, Thurber needlegrass, Lahontan sagebrush
Ecological site: None assigned

Devada and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Thurber needlegrass, bluegrass
Ecological site: R023XF081CA—Shallow stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

132--Brubeck-Loomis association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,600 to 5,200
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Brubeck very cobbly clay, 2 to 9 percent slopes--50 percent

Loomis very cobbly loam, 5 to 30 percent slopes--35 percent
Tunnison very cobbly clay, 2 to 9 percent slopes--5 percent
Fulstone very cobbly loam, 2 to 9 percent slopes--5 percent
Cochran gravelly loam, 2 to 9 percent slopes--5 percent

Component Description

Brubeck and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Beardless wildrye, western wheatgrass, littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail, rubber rabbitbrush, big sagebrush

Typical profile:
Surface rock fragments: About 30 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly clay
Layer 2--2 to 32 inches; clay
Layer 3--32 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R023XF084CA—Clay upland 9-16

Component Description

Loomis and similar soils
Landform: Backslopes of plateaus
Slope: 5 to 30 percent
Parent material: Colluvium derived from basalt over residuum weathered from basalt
Typical vegetation: Bluebunch wheatgrass, black sagebrush, Thurber needlegrass, Sandberg bluegrass, bottlebrush squirreltail

Typical profile:
Surface rock fragments: About 25 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly loam
Layer 2--2 to 6 inches; very gravelly clay loam
Layer 3--6 to 11 inches; very gravelly clay
Layer 4--11 to 15 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 8 to 14 inches
Permeability class (root zone): Slow
Available water capacity: About 1.1 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF087CA—Very shallow stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Tunnison and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF093CA—Shallow clay 9-16

Fulstone and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Fan remnant
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, Lahontan sagebrush
Ecological site: R023XF083CA—Shallow stony clay loam 9-12

Cochran and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Lake terraces
Typical vegetation: Needlegrass, mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush
Ecological site: R021XE044CA—Cool loam 12-16

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

133--Buckbay-Orhood-Devada association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,400 to 6,200
Precipitation: 12 to 14 inches
Air temperature: 45 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Buckbay gravelly loam, 9 to 30 percent slopes--35 percent
Orhood very stony loam, 9 to 30 percent slopes--25 percent
Devada very cobbly loam, 2 to 9 percent slopes--20 percent
Fredonyer very stony loam, 9 to 30 percent slopes--4 percent
Longcreek very stony loam, 9 to 30 percent slopes--4 percent
Ninemile very stony loam, 5 to 15 percent slopes--4 percent
Petescreek gravelly loam, 9 to 30 percent slopes--4 percent
Puls very cobbly loam, 2 to 9 percent slopes--4 percent

Component Description

Buckbay and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from andesite and residuum weathered from andesite
Typical vegetation: Forest canopy--western juniper; Forest understory--antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, needlegrass
Site index: Western juniper--24 at an age base of 50 years

Typical profile:
Surface rock fragments: About 2 percent cobbles, 1 percent stones, 10 percent gravel
Layer 1--0 to 12 inches; gravelly loam
Layer 2--12 to 22 inches; gravelly loam
Layer 3--22 to 29 inches; cobbly loam
Layer 4--29 to 39 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Orhood and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper; Forest understory--arrowleaf balsamroot, mountain big sagebrush, rabbitbrush, antelope bitterbrush, Idaho fescue, Sandberg bluegrass, Lemmon needlegrass, bluebunch wheatgrass, Thurber needlegrass
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA—Stony loam 12-16

Component Description

Devada and similar soils
Landform: Backslopes of mountains
Slope: 2 to 9 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Antelope bitterbrush, Thurber needlegrass, bluegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 40 percent cobbles, 5 percent stones
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA—Shallow stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fredonyer and similar soils
Composition: 0 to 4 percent
Slope: 9 to 30 percent
Landform: Ridges
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush
Ecological site: R021XE178CA—Very stony loam 12-16

Longcreek and similar soils
Composition: 0 to 4 percent
Slope: 9 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass, antelope bitterbrush, basin wildrye
Ecological site: R023XF082CA—Stony loam 9-12

Ninemile and similar soils
Composition: 0 to 4 percent
Slope: 5 to 15 percent
Landform: Backslopes of plateaus, summits of plateaus
Typical vegetation: Balsamroot, Idaho fescue, Thurber needlegrass, bluegrass, antelope bitterbrush, bottlebrush squirreltail, bluebunch wheatgrass, low sagebrush
Ecological site: R021XE173CA—Shallow stony loam 12-16

Petescreek and similar soils
Composition: 0 to 4 percent
Slope: 9 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Ecological site: R021XE176CA--Loam 12-16

Puls and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Antelope bitterbrush, Thurber needlegrass, bluegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass
Ecological site: R021XE173CA

Management

Major uses: Livestock grazing and juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

134--Buckbay-Orhood-Fredonyer association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,400 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 44 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Buckbay gravelly loam, 5 to 30 percent slopes--40 percent
Orhood very stony loam, 5 to 30 percent slopes--25 percent

Fredonyer very stony loam, 5 to 30 percent slopes--20 percent
Searles very stony loam, 5 to 30 percent slopes--8 percent
Jauriga gravelly loam, 5 to 15 percent slopes--7 percent

Component Description

Buckbay and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, south aspect
Parent material: Colluvium derived from andesite and residuum weathered from andesite
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, Idaho fescue, mountain big sagebrush, needlegrass, antelope bitterbrush
Site index: Western juniper--24 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent gravel, 2 percent cobbles, 1 percent stones
Layer 1--0 to 11 inches; gravelly loam
Layer 2--11 to 19 inches; gravelly loam
Layer 3--19 to 29 inches; cobbly loam
Layer 4--29 to 33 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA

Component Description

Orhood and similar soils
Landform: Backslopes of mountains, ridges
Slope: 5 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, Lemmon needlegrass, Sandberg bluegrass, arrowleaf balsamroot, rabbitbrush, Thurber needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA—Stony loam 12-16

Component Description

Fredonyer and similar soils
Landform: Ridges
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush

Typical profile:
Surface rock fragments: About 15 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s

Ecological site: R021XE178CA—Very stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Searles and similar soils
Composition: 0 to 8 percent
Slope: 5 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass
Ecological site: R021XE179CA—Warm stony loam 12-16

Jauriga and similar soils
Composition: 0 to 7 percent
Slope: 5 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, antelope bitterbrush, needlegrass
Ecological site: R021XE176CA--Loam 12-16

Management

Major uses: Livestock grazing and juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

135--Bucklake-Corral-Rubble land association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 4,500 to 5,000
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Bucklake very stony loam, 30 to 50 percent slopes--30 percent
Corral very stony loam, 30 to 50 percent slopes--30 percent
Rubble land fragmental material, 30 to 50 percent slopes--25 percent
Cochran very cobbly loam, 9 to 15 percent slopes--5 percent
Devada very stony loam, 30 to 50 percent slopes--3 percent
Indiano stony fine sandy loam, 30 to 50 percent slopes--3 percent
Brubeck very cobbly clay, 15 to 30 percent slopes--2 percent
Rock outcrop, 30 to 50 percent slopes--2 percent

Component Description

Bucklake and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Basin wildrye, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, rabbitbrush

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 12 inches; gravelly clay loam
Layer 3--12 to 24 inches; gravelly clay
Layer 4--24 to 34 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA—Stony loam 9-12

Component Description

Corral and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Bluebunch wheatgrass, Thurber needlegrass, basin wildrye, big sagebrush

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; sandy clay loam

Layer 3--12 to 22 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 12 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 1.1 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA—Stony loam 9-12

Component Description

Rubble land
Landform: Mountains
Slope: 30 to 50 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Cochran and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent
Landform: Lake terraces
Typical vegetation: Idaho fescue, antelope bitterbrush, needlegrass, bluebunch wheatgrass, mountain big sagebrush
Ecological site: R021XE174CA—Stony loam 12-16

Devada and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Mountains
Typical vegetation: Bluegrass, Thurber needlegrass, bluebunch wheatgrass, low sagebrush
Ecological site: R023XF081CA—Shallow stony loam 9-12

Indiano and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Other perennial forbs, other perennial grasses, antelope bitterbrush, other shrubs, Thurber needlegrass, basin wildrye, Wyoming big sagebrush, bluebunch wheatgrass
Ecological site: R023XF082CA—Stony loam 9-12

Brubeck and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, littleleaf horsebrush, beardless wildrye, big sagebrush, rubber rabbitbrush, bottlebrush squirreltail, western wheatgrass
Ecological site: R023XF084CA—Clay upland 9-16

Rock outcrop
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

136--Bunanch very gravelly loam, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Hills
Elevation: 4,700 to 5,000
Precipitation: 20 to 30 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Bunanch very gravelly loam, 9 to 30 percent slopes--90 percent
Ulhalf very gravelly sandy loam, 15 to 30 percent slopes--5 percent
Jauriga gravelly loam, 9 to 15 percent slopes--4 percent
Keddie loam, 0 to 2 percent slopes--1 percent

Component Description

Bunanch and similar soils
Landform: Backslopes of hills

Slope: 9 to 30 percent
Parent material: Alluvium derived from conglomerate
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush
Site index: Jeffrey pine--62 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 47

Typical profile:
Layer 1--0 to 7 inches; very gravelly loam
Layer 2--7 to 22 inches; very gravelly clay loam
Layer 3--22 to 63 inches; very gravelly clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ulhalf and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Toeslopes of plateaus
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, ponderosa pine; Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush
Ecological site: None assigned

Jauriga and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, antelope bitterbrush
Ecological site: R021XE176CA--Loam 12-16

Keddie and similar soils
Composition: 0 to 1 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing, watershed, wildlife habitat and recreation
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

137--Cagwin loamy coarse sand, 15 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,000 to 5,600
Precipitation: 25 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Cagwin loamy coarse sand, 15 to 30 percent slopes--85 percent
Penstock very gravelly loam, 15 to 30 percent slopes, very stony--5 percent
Quartzburg stony loamy sand, 30 to 50 percent slopes--3 percent
Cagwin, loamy coarse sand, 15 to 30 percent slopes, very bouldery--3 percent
Lasco gravelly sandy loam, 15 to 30 percent slopes--2 percent
Cagwin loamy coarse sand, 30 to 50 percent slopes--2 percent

Component Description

Cagwin and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--pinemat manzanita, greenleaf manzanita, whitethorn ceanothus
Site index: Jeffrey pine--94 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 61

Typical profile:
Layer 1--0 to 8 inches; loamy coarse sand
Layer 2--8 to 36 inches; gravelly loamy coarse sand
Layer 3--36 to 39 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Penstock and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--needlegrass, snowbrush ceanothus, whitethorn ceanothus, manzanita, mountain brome, sharpleaf snowberry
Ecological site: None assigned

Quartzburg and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine
Ecological site: None assigned

Cagwin and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Lasco and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--Idaho fescue, big sagebrush, antelope bitterbrush
Ecological site: None assigned

Cagwin and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--whitethorn ceanothus, greenleaf manzanita, pinemat manzanita
Ecological site: None assigned

Management

Major uses: Timber production and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

138--Cagwin loamy coarse sand, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,000 to 5,600
Precipitation: 25 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Cagwin loamy coarse sand, 30 to 50 percent slopes--85 percent
Cagwin family loamy coarse sand, 30 to 50 percent slopes--3 percent
Penstock family very gravelly loam, 30 to 50 percent slopes, very stony--5 percent
Lasco sandy loam, 30 to 50 percent slopes--5 percent
Cagwin loamy coarse sand, 30 to 50 percent slopes, very bouldery--1 percent
Quartzburg stony loamy sand, 30 to 50 percent slopes--1 percent

Component Description

Cagwin and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent

Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--greenleaf manzanita, pinemat manzanita, whitethorn ceanothus
Site index: Jeffrey pine--94 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 61

Typical profile:
Layer 1--0 to 8 inches; loamy coarse sand
Layer 2--8 to 36 inches; gravelly loamy coarse sand
Layer 3--36 to 39 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Penstock family and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--needlegrass, snowbrush ceanothus, manzanita, sharpleaf snowberry, whitethorn ceanothus
Ecological site: None assigned

Lasco and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine, incense cedar, ponderosa pine; Forest understory--snowbrush ceanothus, manzanita, needlegrass, whitethorn ceanothus, mountain brome
Ecological site: None assigned

Cagwin family and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--pinemat manzanita, greenleaf manzanita, whitethorn ceanothus
Ecological site: None assigned

Cagwin and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--greenleaf manzanita, pinemat manzanita, whitethorn ceanothus
Ecological site: None assigned

Quartzburg and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine
Ecological site: None assigned

Management

Major uses: Timber production and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

139--Calnat sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,010
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calnat sandy loam, 0 to 2 percent slopes--90 percent
Playas silty clay, 0 to 1 percent slopes--5 percent
McDermott silt loam, 0 to 2 percent slopes--5 percent

Component Description

Calnat and similar soils
Landform: Lake terraces

Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 5 inches; sandy loam
Layer 2--5 to 13 inches; sandy clay loam
Layer 3--13 to 28 inches; loam
Layer 4--28 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG048CA—Sodic loam 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Playas silty clay
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Playa
Ecological site: None assigned

McDermott and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin wildrye, basin big sagebrush, black greasewood, bottlebrush squirreltail
Ecological site: R023XG048CA—Sodic loam 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

140--Calneva silt loam, 0 to 1 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 4,000 to 4,010
Precipitation: 6 to 9 inches
Air temperature: 49 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calneva silt loam, 0 to 1 percent slopes--85 percent
Playas silty clay, 0 to 1 percent slopes--6 percent
Ragtown loam, 0 to 1 percent slopes--5 percent
Lieberman fine sandy loam, 0 to 1 percent slopes--4 percent

Component Description

Calneva and similar soils
Landform: Lake terrace
Slope: 0 to 1 percent
Parent material: Lacustrine deposits
Typical vegetation: Bud sagebrush, shadscale, bottlebrush squirreltail, black greasewood

Typical profile:
Layer 1--0 to 6 inches; silt loam
Layer 2--6 to 16 inches; silty clay
Layer 3--16 to 36 inches; loam
Layer 4--36 to 72 inches; stratified sand to silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Moderately well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Playas silty clay
Composition: 0 to 6 percent
Slope: 0 to 1 percent
Landform: Playa

Ecological site: None assigned

Ragtown and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, bottlebrush squirreltail, spiny hopsage, shadscale, basin wildrye
Ecological site: R023XG047CA

Lieberman and similar soils
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, shadscale, bottlebrush squirreltail, bud sagebrush
Ecological site: R023XG046CA—Sodic flat 6-9

Management

Major uses: Livestock grazing and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

141--Calneva-Playas complex, 0 to 1 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 4,000 to 4,010
Precipitation: 6 to 9 inches
Air temperature: 49 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calneva silt loam, 0 to 1 percent slopes--65 percent
Playas silty clay, 0 to 1 percent slopes--20 percent
Mazuma fine sandy loam, 0 to 2 percent slopes--8 percent
Calneva silt loam, clay loam substratum, 0 to 1 percent slopes--7 percent

Component Description

Calneva and similar soils
Landform: Lake terrace
Slope: 0 to 1 percent
Parent material: Lacustrine deposits
Typical vegetation: Bottlebrush squirreltail, shadscale, black greasewood, bud sagebrush

Typical profile:
Layer 1--0 to 6 inches; silt loam
Layer 2--6 to 16 inches; silty clay
Layer 3--16 to 36 inches; loam
Layer 4--36 to 72 inches; stratified sand to silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Moderately well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA—Sodic flat 6-9

Component Description

Playas silty clay
Landform: Playa
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mazuma and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, bottlebrush squirreltail, seepweed, shadscale, basin wildrye
Ecological site: R023XG050CA—Saline-sodic flat 6-9

Calneva and similar soils
Composition: 0 to 7 percent
Slope: 0 to 1 percent
Landform: Basin floors
Typical vegetation: Bottlebrush squirreltail, black greasewood, spiny hopsage, basin wildrye, shadscale
Ecological site: R023XG047CA—Sodic terrace 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

142--Calpine coarse sandy loam, 0 to 5 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,000 to 4,300
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calpine coarse sandy loam, 0 to 5 percent slopes--85 percent
Springmeyer sandy clay loam, 0 to 5 percent slopes--8 percent
Badenaugh family stony sandy loam, 0 to 5 percent slopes--7 percent

Component Description

Calpine and similar soils
Landform: Fan remnants
Slope: 0 to 5 percent
Parent material: Alluvium derived from granite
Typical vegetation: Mountain big sagebrush, beardless wildrye, Indian ricegrass, needleandthread, antelope bitterbrush, western needlegrass

Typical profile:
Layer 1--0 to 20 inches; coarse sandy loam
Layer 2--20 to 35 inches; sandy loam
Layer 3--35 to 60 inches; stratified gravelly coarse sandy loam to gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 4e-1
Ecological site: R021XE181CA—Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Springmeyer and similar soils
Composition: 0 to 8 percent
Slope: 0 to 5 percent
Landform: Fan remnants
Ecological site: None assigned

Badenaugh family and similar soils
Composition: 0 to 7 percent
Slope: 0 to 5 percent
Landform: Fan remnants
Typical vegetation: Needlegrass, green ephedra, Anderson peachbrush, bluebunch wheatgrass, antelope bitterbrush, big sagebrush
Ecological site: R026XF052CA—Granitic upland 9-12

Management

Major uses: Urban development and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

143--Calpine sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,100 to 4,300
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calpine sandy loam, 0 to 2 percent slopes--80 percent
Truax sandy loam, 0 to 2 percent slopes--5 percent
Plinco loam, 0 to 2 percent slopes--5 percent
Springmeyer sandy loam, 0 to 2 percent slopes--5 percent

Mottsville loamy coarse sand, 0 to 2 percent slopes--5 percent

Component Description

Calpine and similar soils
Landform: Alluvial fans
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite
Typical vegetation: Mountain big sagebrush, beardless wildrye, Indian ricegrass, antelope bitterbrush, needleandthread, western needlegrass

Typical profile:
Layer 1--0 to 24 inches; sandy loam
Layer 2--24 to 60 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2e-1
Nonirrigated land capability: 4e-1
Ecological site: R021XE181CA—Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Truax and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Mountain big sagebrush, Idaho fescue, antelope bitterbrush, needleandthread, beardless wildrye
Ecological site: R021XE180CA—Sandy loam fan 12-16

Plinco and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Springmeyer and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fans remnant
Typical vegetation: Other perennial forbs, basin wildrye, yellow rabbitbrush, other shrubs, Thurber needlegrass, other perennial grasses, antelope bitterbrush, other annual forbs, bottlebrush squirreltail, big sagebrush
Ecological site: R021XE186CA—Loamy terrace 12-16

Mottsville and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Other perennial grasses, Indian ricegrass, mountain big sagebrush, other perennial forbs, bottlebrush squirreltail, needleandthread, antelope bitterbrush, other shrubs
Ecological site: R021XE181CA—Granitic fan 12-16

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

144--Calpine sandy loam, 2 to 5 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,050 to 4,200
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calpine sandy loam, 2 to 5 percent slopes--80 percent
Modoc sandy loam, 2 to 5 percent slopes--5 percent
Springmeyer sandy loam, 2 to 5 percent slopes--4 percent
Mottsville loamy coarse sand, 2 to 5 percent slopes--4 percent
McConnel gravelly fine sandy loam, 2 to 5 percent slopes--4 percent
Stacy fine sandy loam, 2 to 5 percent slopes--3 percent

Component Description

Calpine and similar soils
Landform: Fan remnants
Slope: 2 to 5 percent
Parent material: Alluvium derived from granite

Typical vegetation: Mountain big sagebrush, beardless wildrye, Indian ricegrass, antelope bitterbrush, needleandthread, western needlegrass

Typical profile:
Layer 1--0 to 24 inches; sandy loam
Layer 2--24 to 60 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2e-1
Nonirrigated land capability: 4e-1
Ecological site: R021XE181CA—Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Modoc and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Idaho fescue, bluebunch wheatgrass, basin big sagebrush, basin wildrye
Ecological site: R021XE186CA

Springmeyer and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Fans, terraces
Typical vegetation: Other shrubs, big sagebrush, bottlebrush squirreltail, other annual forbs, yellow rabbitbrush, Thurber needlegrass, other perennial grasses, antelope bitterbrush, basin wildrye, other perennial forbs
Ecological site: R021XE186CA—Loamy terrace 12-16

Mottsville and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, mountain big sagebrush, Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, other perennial forbs, other perennial grasses, other shrubs
Ecological site: R021XE181CA—Granitic fan 12-16

McConnel and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, globemallow, bottlebrush squirreltail, Indian ricegrass, Wyoming big sagebrush, Sandberg bluegrass
Ecological site: R023XG054CA—Sandy terrace 6-9

Stacy and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Landform: Alluvial fans
Typical vegetation: Black greasewood, basin big sagebrush, basin wildrye
Ecological site: R023XG051CA—Loamy bottom 6-9

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

145--Calpine, warm, 0 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,200 to 4,500
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Calpine sandy loam, 5 to 15 percent slopes--90 percent
Plinco loam, 5 to 9 percent slopes--10 percent

Component Description

Calpine and similar soils
Landform: Alluvial fans
Slope: 5 to 15 percent
Parent material: Alluvium derived from granite
Typical vegetation: Antelope bitterbrush, Indian ricegrass, needleandthread, western needlegrass, mountain big sagebrush, beardless wildrye

Typical profile:
Layer 1--0 to 21 inches; sandy loam

Layer 2--21 to 46 inches; sandy loam
Layer 3--46 to 81 inch; stratified coarse sand to loamy fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 4e-1
Ecological site: R021XE181CA—Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Plinco and similar soils
Composition: 0 to 10 percent
Slope: 5 to 9 percent
Landform: Alluvial fan
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

146--Indiano-Chalco complex, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,000 to 5,200
Precipitation: 12 to 14 inches
Air temperature: 47 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Indiano gravelly sandy loam, 2 to 9 percent slopes--50 percent
Chalco gravelly fine sandy loam, 2 to 9 percent slopes--30 percent
Corral sandy loam, 2 to 5 percent slopes--8 percent
Cleghorn sandy loam, 2 to 5 percent slopes--7 percent
Corral family sandy loam, 5 to 9 percent slopes--5 percent

Component Description

Indiano and similar soils
Landform: Summits of plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Antelope bitterbrush, green ephedra, basin wildrye, big sagebrush, Thurber needlegrass, bluebunch wheatgrass

Typical profile:
Layer 1--0 to 7 inches; gravelly sandy loam
Layer 2--7 to 27 inches; gravelly clay loam
Layer 3--27 to 31 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE176CA--Loam 12-16

Component Description

Chalco and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Low sagebrush, Sandberg bluegrass, other perennial grasses, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush

Typical profile:
Layer 1--0 to 4 inches; gravelly fine sandy loam
Layer 2--4 to 15 inches; clay
Layer 3--15 to 19 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Very slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE184CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Corral and similar soils
Composition: 0 to 8 percent
Slope: 2 to 5 percent
Landform: Rock pediment
Typical vegetation: Big sagebrush, needleandthread, basin wildrye
Ecological site: R021XE195CA—Sandy loam terrace 12-16

Cleghorn and similar soils
Composition: 0 to 7 percent
Slope: 2 to 5 percent
Landform: Fan remnant
Typical vegetation: Needleandthread, basin big sagebrush, basin wildrye, beardless wildrye, Thurber needlegrass
Ecological site: R021XE195CA—Sandy loam terrace 12-16

Corral family and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Fan remnants
Typical vegetation: Littleleaf horsebrush, Thurber needlegrass, low sagebrush, bottlebrush squirreltail, Sandberg bluegrass, other perennial grasses
Ecological site: R021XE184CA—Shallow loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

147--Capona-Rock outcrop complex, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,000 to 5,200
Precipitation: 12 to 14 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Capona fine sandy loam, 2 to 9 percent slopes--55 percent
Rock outcrop unweathered bedrock, 2 to 9 percent slopes--30 percent
Calpine sandy loam, 2 to 9 percent slopes--5 percent
Devada very stony loam, 2 to 9 percent slopes--4 percent
Jauriga gravelly loam, 2 to 9 percent slopes--2 percent
Hart Camp gravelly loam, 2 to 9 percent slopes--2 percent
Indiano gravelly sandy loam, 2 to 9 percent slopes--2 percent

Component Description

Capona and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 11 inches; fine sandy loam
Layer 2--11 to 39 inches; loam
Layer 3--39 to 43 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Rock outcrop
Landform: Plateaus
Slope: 2 to 9 percent

Component Properties and Qualities
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Alluvial fans
Typical vegetation: Western needlegrass, mountain big sagebrush, beardless wildrye, Indian ricegrass, antelope bitterbrush, needleandthread
Ecological site: R021XE181CA—Granitic fan 12-16

Devada and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Mountains
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush
Ecological site: R021XE173CA—Shallow stony loam 12-16

Jauriga and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Idaho fescue
Ecological site: R021XE176CA--Loam 12-16

Hart Camp and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush
Ecological site: R021XE176CA--Loam 12-16

Indiano and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Landform: Summits of plateaus
Typical vegetation: Big sagebrush, bluebunch wheatgrass, basin wildrye, green ephedra, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE176CA--Loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

148--Cewat very stony fine sandy loam, 5 to 15 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,200 to 4,400
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 110 days

Composition

Cewat very stony fine sandy loam, 5 to 15 percent slopes--80 percent
Zorravista fine sand, 5 to 15 percent slopes--5 percent
Ardep fine sandy loam, 0 to 2 percent slopes--5 percent
Toulon very gravelly fine sandy loam, 2 to 5 percent slopes--5 percent
Brubeck very cobbly clay, 5 to 15 percent slopes--5 percent

Component Description

Cewat and similar soils
Landform: Fan remnants
Slope: 5 to 15 percent
Parent material: Colluvium derived from granite
Typical vegetation: Indian ricegrass, Wyoming big sagebrush, bottlebrush squirreltail, spiny hopsage, littleleaf horsebrush, Thurber needlegrass

Typical profile:
Layer 1--0 to 4 inches; very stony fine sandy loam
Layer 2--4 to 9 inches; very gravelly loam
Layer 3--9 to 21 inches; extremely gravelly loam
Layer 4--21 to 25 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG056CA—Droughty loam 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Zorravista and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Dunes
Typical vegetation: Spiny hopsage, basin big sagebrush, fourwing saltbush, rubber rabbitbrush, basin wildrye, Indian ricegrass, black greasewood, needleandthread, littleleaf horsebrush
Ecological site: R023XG049CA—Sand dunes 6-9

Ardep and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, bud sagebrush, bottlebrush squirreltail, black greasewood
Ecological site: R023XG046CA—Sodic flat 6-9

Toulon and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Bottlebrush squirreltail, shadscale, spiny hopsage, Indian ricegrass
Ecological site: R023XG057CA—Sodic gravelly sand 6-9

Brubeck and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Plateaus
Typical vegetation: Beardless wildrye, western wheatgrass, big sagebrush, rubber rabbitbrush, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA—Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

149--Cewat-McConnel-Toulon association, 2 to 15 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,000 to 4,350
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Cewat very stony fine sandy loam, 5 to 15 percent slopes--35 percent
McConnel gravelly fine sandy loam, 5 to 15 percent slopes--35 percent
Toulon very gravelly fine sandy loam, 2 to 5 percent slopes--15 percent
Stacy fine sandy loam, 0 to 2 percent slopes--8 percent
McConnel family gravelly fine sandy loam, 2 to 9 percent slopes--7 percent

Component Description

Cewat and similar soils
Landform: Fan remnants
Slope: 5 to 15 percent
Parent material: Colluvium derived from granite
Typical vegetation: Littleleaf horsebrush, Thurber needlegrass, desert needlegrass, bottlebrush squirreltail, Indian ricegrass, green ephedra, Wyoming big sagebrush, bluebunch wheatgrass

Typical profile:
Layer 1--0 to 4 inches; very stony fine sandy loam
Layer 2--4 to 9 inches; very gravelly loam
Layer 3--9 to 21 inches; extremely gravelly loam
Layer 4--21 to 25 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG053CA—Stony loam 6-9

Component Description

McConnel and similar soils
Landform: Inset fan
Slope: 5 to 15 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, globemallow, needleandthread, Wyoming big sagebrush

Typical profile:
Layer 1--0 to 3 inches; gravelly fine sandy loam
Layer 2--3 to 60 inches; stratified extremely gravelly coarse sand to very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG054CA—Sandy terrace 6-9

Component Description

Toulon and similar soils
Landform: Fan remnants
Slope: 2 to 5 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Shadscale, bottlebrush squirreltail, Indian ricegrass, spiny hopsage

Typical profile:
Layer 1--0 to 3 inches; very gravelly fine sandy loam
Layer 2--3 to 14 inches; very gravelly sandy loam
Layer 3--14 to 37 inches; stratified very gravelly sand to extremely gravelly loamy coarse sand
Layer 4--37 to 60 inches; stratified gravelly coarse sand to extremely cobbly coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG057CA—Sodic gravelly sand 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Stacy and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Black greasewood, basin big sagebrush, basin wildrye
Ecological site: R023XG051CA—Loamy bottom 6-9

McConnel family and similar soils
Composition: 0 to 7 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Wyoming big sagebrush, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, needleandthread, globemallow
Ecological site: R023XG054CA—Sandy terrace 6-9

Management

Major uses: Livestock grazing and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

150--Chappuis coarse sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 3,990 to 4,000

Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Chappuis coarse sandy loam, 0 to 2 percent slopes--80 percent
Playas silty clay, 0 to 1 percent slopes--5 percent
Chappuis coarse sandy loam, 0 to 2 percent slopes, eroded--5 percent
Ragtown loam, 0 to 2 percent slopes--5 percent
McDermott silt loam, 0 to 2 percent slopes--5 percent

Component Description

Chappuis and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin wildrye, basin big sagebrush, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 7 inches; coarse sandy loam
Layer 2--7 to 17 inches; silty clay
Layer 3--17 to 60 inches; silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 9 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG048CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Playas silty clay
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Playa
Ecological site: None assigned

Chappuis eroded and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail
Ecological site: R023XG048CA—Sodic loam 6-9

Ragtown and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, shadscale, basin wildrye, spiny hopsage, black greasewood
Ecological site: R023XG047CA—Sodic terrace 6-9

McDermott and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin big sagebrush, bottlebrush squirreltail, black greasewood, basin wildrye
Ecological site: R023XG048CA—Sodic loam 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

151--Chappuis silt loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 3,980 to 4,100
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Chappuis silt loam, 0 to 2 percent slopes--85 percent
Susanville silt loam, 0 to 2 percent slopes--5 percent
Standish fine sandy loam, 0 to 2 percent slopes--5 percent
Ardep fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Chappuis and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin big sagebrush, rabbitbrush, inland saltgrass, basin wildrye, black greasewood

Typical profile:
Layer 1--0 to 10 inches; silt loam
Layer 2--10 to 19 inches; silty clay
Layer 3--19 to 25 inches; loam
Layer 4--25 to 60 inches; silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG059CA—Saline-sodic loam 6-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Susanville and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Black greasewood, basin wildrye, basin big sagebrush
Ecological site: R023XG051CA

Standish and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin wildrye, black greasewood, basin big sagebrush, rabbitbrush, inland saltgrass
Ecological site: R023XG059CA—Saline-sodic loam 6-12

Ardep and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, black greasewood, shadscale, bud sagebrush
Ecological site: R023XG046CA—Sodic flat 6-9

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

152--Chimney gravelly loamy coarse sand, 2 to 9 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,300 to 4,500
Precipitation: 16 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Chimney gravelly loamy coarse sand, 2 to 9 percent slopes--90 percent
Mottsville loamy coarse sand, 2 to 9 percent slopes--6 percent
Rock outcrop, 5 to 9 percent slopes--4 percent

Component Description

Chimney and similar soils
Landform: Toeslopes of mountains
Slope: 2 to 9 percent
Parent material: Colluvium derived from granite
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--squawcarpet, Idaho fescue, antelope bitterbrush, bottlebrush squirreltail, Columbia needlegrass, mountain big sagebrush
Site index: Jeffrey pine--75 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 52

Typical profile:
Layer 1--0 to 13 inches; gravelly loamy coarse sand
Layer 2--13 to 35 inches; gravelly loamy coarse sand
Layer 3--35 to 60 inches; loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 60 inches
Permeability class (root zone): Rapid
Available water capacity: About 3 inches
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, antelope bitterbrush, other shrubs, other perennial grasses, other perennial forbs, Indian ricegrass, mountain big sagebrush, bottlebrush squirreltail
Ecological site: R021XE181CA—Granitic fan 12-16

Rock outcrop
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Timber production and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

153--Chimney gravelly loamy coarse sand, 9 to 15 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,200 to 4,500
Precipitation: 16 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Chimney gravelly loamy coarse sand, 9 to 15 percent slopes--85 percent
Bonta gravelly sandy loam, 9 to 15 percent slopes--8 percent
Mottsville loamy coarse sand, 9 to 15 percent slopes--7 percent

Component Description

Chimney and similar soils
Landform: Toeslopes of mountains
Slope: 9 to 15 percent
Parent material: Colluvium derived from granite
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--Columbia needlegrass, bottlebrush squirreltail, antelope bitterbrush, Idaho fescue, mountain big sagebrush, squawcarpet
Site index: Jeffrey pine--75 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 52

Typical profile:
Layer 1--0 to 13 inches; gravelly loamy coarse sand
Layer 2--13 to 35 inches; gravelly loamy coarse sand
Layer 3--35 to 60 inches; loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
Permeability class (root zone): Rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bonta and similar soils
Composition: 0 to 8 percent
Slope: 9 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine, white fir; Forest understory--mountain big sagebrush, needlegrass, antelope bitterbrush, snowbrush ceanothus, whitethorn ceanothus, mountain brome
Ecological site: None assigned

Mottsville and similar soils
Composition: 0 to 7 percent
Slope: 9 to 15 percent
Landform: Fan remnants
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, bottlebrush squirreltail, other perennial forbs, other shrubs, other perennial grasses
Ecological site: R021XE181CA—Granitic fan 12-16

Management

Major uses: Timber production, livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

154--Chimney-Janile-Waterman association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,300 to 5,000
Precipitation: 16 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Chimney gravelly loamy coarse sand, 30 to 50 percent slopes--35 percent
Janile gravelly loamy coarse sand, 30 to 50 percent slopes, very bouldery--35 percent
Waterman gravelly loamy coarse sand, 15 to 50 percent slopes, very bouldery--15 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Mottsville gravelly loamy coarse sand, 15 to 30 percent slopes--5 percent
Bonta gravelly sandy loam, 15 to 50 percent slopes--5 percent

Component Description

Chimney and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from granite
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--mountain big sagebrush, squawcarpet, Idaho fescue, antelope bitterbrush, Columbia needlegrass, bottlebrush squirreltail
Site index: Jeffrey pine--75 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 52

Typical profile:
Layer 1--0 to 13 inches; gravelly loamy coarse sand
Layer 2--13 to 35 inches; gravelly loamy coarse sand
Layer 3--35 to 60 inches; loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 60 inches
Permeability class (root zone): Rapid
Available water capacity: About 3 inches
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Janile and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, Columbia needlegrass, bottlebrush squirreltail, antelope bitterbrush, Idaho fescue
Site index: Jeffrey pine--74 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 49

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 4 inches; gravelly loamy coarse sand
Layer 2--4 to 19 inches; very gravelly loamy coarse sand
Layer 3--19 to 24 inches; extremely gravelly loamy coarse sand
Layer 4--24 to 34 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 1.0 inch
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Waterman and similar soils
Landform: Ridges
Slope: 15 to 50 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--Idaho fescue, mountain big sagebrush, Columbia needlegrass, bottlebrush squirreltail, antelope bitterbrush, squawcarpet
Site index: Jeffrey pine--56 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 40

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 7 inches; gravelly loamy coarse sand
Layer 2--7 to 18 inches; very gravelly loamy coarse sand
Layer 3--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.8 inch
Present flooding: None
Present ponding: None
Natural drainage class: Excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges
Ecological site: None assigned

Mottsville and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Fan remnants
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, bottlebrush squirreltail, other shrubs, other perennial grasses, other perennial forbs
Ecological site: R021XE181CA—Granitic fan 12-16

Bonta and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine, white fir; Forest understory--whitethorn ceanothus, mountain brome, snowbrush ceanothus, needlegrass, antelope bitterbrush, mountain big sagebrush
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

155--Chimney-Janile-Waterman association, 50 to 75 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,300 to 5,800
Precipitation: 16 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Chimney gravelly loamy coarse sand, 50 to 75 percent slopes--40 percent

Janile bouldery loamy coarse sand, 50 to 75 percent slopes, very bouldery--30 percent
Waterman gravelly loamy coarse sand, 50 to 75 percent slopes, very bouldery--15 percent
Chimney gravelly loamy coarse sand, 50 to 75 percent slopes, extremely bouldery--8 percent
Rock outcrop, 50 to 75 percent slopes--7 percent

Component Description

Chimney and similar soils
Landform: Backslopes of mountains
Slope: 50 to 75 percent, north aspect
Parent material: Colluvium derived from granite
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--bottlebrush squirreltail, antelope bitterbrush, Columbia needlegrass, Idaho fescue, squawcarpet, mountain big sagebrush
Site index: Jeffrey pine--75 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 52

Typical profile:
Layer 1--0 to 13 inches; gravelly loamy coarse sand
Layer 2--13 to 35 inches; gravelly loamy coarse sand
Layer 3--35 to 60 inches; loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
Permeability class (root zone): Rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Janile and similar soils
Landform: Backslopes of mountains
Slope: 50 to 75 percent, south aspect
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--Columbia needlegrass, bottlebrush squirreltail, Idaho fescue, mountain big sagebrush, antelope bitterbrush
Site index: Jeffrey pine--74 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 49

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 4 inches; bouldery loamy coarse sand
Layer 2--4 to 19 inches; very gravelly loamy coarse sand
Layer 3--19 to 24 inches; extremely gravelly loamy coarse sand
Layer 4--24 to 34 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 1.0 inch
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Waterman and similar soils
Landform: Ridges
Slope: 50 to 75 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, antelope bitterbrush, bottlebrush squirreltail, Columbia needlegrass, squawcarpet, Idaho fescue
Site index: Jeffrey pine--56 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 40

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 7 inches; gravelly loamy coarse sand
Layer 2--7 to 18 inches; very gravelly loamy coarse sand
Layer 3--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick

Runoff: High
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.8 inch
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Chimney and similar soils
Composition: 0 to 8 percent
Slope: 50 to 75 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--Idaho fescue, squawcarpet, Columbia needlegrass, bottlebrush squirreltail, antelope bitterbrush, mountain big sagebrush
Ecological site: None assigned

Rock outcrop
Composition: 0 to 7 percent
Slope: 50 to 75 percent
Landform: Ridges
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

156--Chimney-Waterman association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,300 to 5,000
Precipitation: 16 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Chimney gravelly loamy coarse sand, 15 to 30 percent slopes--65 percent
Waterman gravelly loamy coarse sand, 9 to 15 percent slopes--20 percent
Mottsville loamy coarse sand, 9 to 30 percent slopes--5 percent
Massack loam, 0 to 2 percent slopes--5 percent
Calpine sandy loam, 9 to 15 percent slopes--5 percent

Component Description

Chimney and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from granite
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--Columbia needlegrass, Idaho fescue, bottlebrush squirreltail, squawcarpet, mountain big sagebrush, antelope bitterbrush
Site index: Jeffrey pine--75 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 52

Typical profile:
Layer 1--0 to 13 inches; gravelly loamy coarse sand
Layer 2--13 to 35 inches; gravelly loamy coarse sand
Layer 3--35 to 60 inches; loamy coarse sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 60 to 80 inches
Permeability class (root zone): Rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Waterman and similar soils
Landform: Ridges
Slope: 9 to 15 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--Idaho fescue, Columbia

needlegrass, bottlebrush squirreltail, squawcarpet, mountain big sagebrush, antelope bitterbrush
Site index: Jeffrey pine--56 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 40

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 7 inches; gravelly loamy coarse sand
Layer 2--7 to 18 inches; very gravelly loamy coarse sand
Layer 3--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.8 inch
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Landform: Fan remnants
Typical vegetation: Other shrubs, mountain big sagebrush, antelope bitterbrush, needleandthread, Indian ricegrass, bottlebrush squirreltail, other perennial forbs, other perennial grasses
Ecological site: R021XE181CA—Granitic fan 12-16

Massack and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent
Landform: Alluvial fans
Typical vegetation: Mountain big sagebrush, western needlegrass, beardless wildrye, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R021XE181CA—Granitic fan 12-16

Management

Major uses: Timber production, livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

157--Chirpchatter sandy loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Fan piedmont
Elevation: 4,300 to 5,000
Precipitation: 16 to 20 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Chirpchatter sandy loam, 2 to 9 percent slopes--85 percent
Ulhalf family very gravelly sandy loam, 5 to 9 percent slopes, extremely stony--8 percent
Gavel family gravelly loam, 5 to 9 percent slopes--7 percent

Component Description

Chirpchatter and similar soils
Landform: Fan remnant
Slope: 2 to 9 percent
Parent material: Volcanic ash and alluvium derived from mixed rocks
Typical vegetation: Forest canopy--California black oak, Jeffrey pine, ponderosa pine; Forest understory--needlegrass, other perennial grasses, whitethorn ceanothus, greenleaf manzanita
Site index: Jeffrey pine--93 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Layer 1--0 to 11 inches; sandy loam
Layer 2--11 to 52 inches; sandy clay loam

Layer 3--52 to 65 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Permeability class (root zone): Moderate
Available water capacity: About 8 inches
Present flooding: None
Water table: Present

Interpretive Groups
Nonirrigated land capability: 3e-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ulhalf family and similar soils
Composition: 0 to 8 percent
Slope: 5 to 9 percent
Landform: Toeslopes of plateaus
Typical vegetation: Forest canopy--California black oak, Jeffrey pine, ponderosa pine; Forest understory--Idaho fescue, antelope bitterbrush, mountain big sagebrush
Ecological site: None assigned

Gavel family and similar soils
Composition: 0 to 7 percent
Slope: 5 to 9 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine, ponderosa pine; Forest understory--sedge, Columbia needlegrass, bottlebrush squirreltail, Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

158--Cleghorn sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,300 to 5,350
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Cleghorn sandy loam, 0 to 2 percent slopes--90 percent
Dryvalley silt loam, 0 to 2 percent slopes--3 percent
Corral sandy loam, 0 to 2 percent slopes--3 percent
Smocreek silty clay loam, 0 to 2 percent slopes--2 percent
Indiano gravelly sandy loam, 2 to 5 percent slopes--2 percent

Component Description

Cleghorn and similar soils
Landform: Fan remnant
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Thurber needlegrass, beardless wildrye, basin wildrye, basin big sagebrush, needleandthread

Typical profile:
Layer 1--0 to 7 inches; sandy loam
Layer 2--7 to 15 inches; clay loam
Layer 3--15 to 19 inches; loam
Layer 4--19 to 34 inches; sandy loam
Layer 5--34 to 60 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 8 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 4e-1
Ecological site: R021XE195CA—Sandy loam terrace 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dryvalley and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Big sagebrush, littleleaf horsebrush, rubber rabbitbrush, Nevada bluegrass
Ecological site: R021XE177CA—Silty flat 12-16

Corral and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Rock pediment
Typical vegetation: Needleandthread, basin wildrye, big sagebrush
Ecological site: R021XE195CA—Sandy loam terrace 12-16

Smocreek and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Basin big sagebrush, basin wildrye
Ecological site: R023XF088CA—Loamy bottom 9-16

Indiano and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent
Landform: Summits of plateaus
Typical vegetation: Big sagebrush, bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush, green ephedra, basin wildrye
Ecological site: R021XE176CA--Loam 12-16

Management

Major uses: Irrigated crops, alfalfa hay, and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

159--Cleghorn sandy loam, 2 to 5 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,000 to 4,600
Precipitation: 9 to 12 inches
Air temperature: 46 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Cleghorn sandy loam, 2 to 5 percent slopes--85 percent
Ragtown loam, 0 to 2 percent slopes--5 percent
Bobert sandy loam, 2 to 5 percent slopes--5 percent
Ravendale silty clay, 0 to 2 percent slopes--5 percent

Component Description

Cleghorn and similar soils
Landform: Fan remnant
Slope: 2 to 5 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Wyoming big sagebrush, basin wildrye, needleandthread, Thurber needlegrass

Typical profile:
Layer 1--0 to 7 inches; sandy loam
Layer 2--7 to 15 inches; clay loam
Layer 3--15 to 19 inches; loam
Layer 4--19 to 34 inches; sandy loam
Layer 5--34 to 60 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 8 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 6e
Ecological site: R023XF091CA—Loamy upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ragtown and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, basin wildrye, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XG047CA—Sodic terrace 6-9

Bobert and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Stream terraces
Typical vegetation: Basin big sagebrush, rabbitbrush, inland saltgrass, basin wildrye, black greasewood
Ecological site: R023XG059CA

Ravendale and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Western wheatgrass, silver sagebrush, beardless wildrye, Nevada bluegrass
Ecological site: R023XF092CA—Clay floodplain 9-16

Management

Major uses: Irrigated crops, alfalfa hay, and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

160--Cochran gravelly loam, 2 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Lake plain
Elevation: 5,400 to 5,450
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Cochran gravelly loam, 2 to 15 percent slopes--85 percent
Devada very cobbly loam, 2 to 15 percent slopes--8 percent
Puls very cobbly loam, 2 to 9 percent slopes--7 percent

Component Description

Cochran and similar soils
Landform: Lake terraces
Slope: 2 to 15 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 11 inches; gravelly loam
Layer 2--11 to 31 inches; extremely cobbly clay loam
Layer 3--31 to 60 inches; stratified extremely cobbly loamy coarse sand to extremely gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada and similar soils
Composition: 0 to 8 percent
Slope: 2 to 15 percent
Landform: Ridges
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Puls and similar soils
Composition: 0 to 7 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE173CA—Shallow stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

161--Cochran very cobbly loam, 5 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Lake plain
Elevation: 5,300 to 5,450
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Cochran very cobbly loam, 5 to 15 percent slopes--90 percent
Orhood very stony loam, 5 to 15 percent slopes--4 percent
Cochran family very cobbly loam, 9 to 15 percent slopes--3 percent
McConnel family gravelly fine sandy loam, 5 to 15 percent slopes--3 percent

Component Description

Cochran and similar soils
Landform: Lake terraces
Slope: 5 to 15 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 3 percent stones, 20 percent cobbles
Layer 1--0 to 11 inches; very cobbly loam
Layer 2--11 to 31 inches; very gravelly clay
Layer 3--31 to 60 inches; stratified extremely cobbly loamy coarse sand to extremely gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Orhood and similar soils
Composition: 0 to 4 percent
Slope: 5 to 15 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, Lemmon needlegrass, Idaho fescue, antelope bitterbrush, Sandberg bluegrass, arrowleaf balsamroot, Thurber needlegrass
Ecological site: R021XE174CA

Cochran family and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Lake terraces
Typical vegetation: Bluebunch wheatgrass, needlegrass, antelope bitterbrush, mountain big sagebrush, Idaho fescue
Ecological site: R021XE174CA--Stony loam 12-16

McConnel family and similar soils
Composition: 0 to 3 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Indian ricegrass, needleandthread, globemallow, bottlebrush squirreltail, Sandberg bluegrass, Wyoming big sagebrush
Ecological site: R023XG054CA--Sandy terrace 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

162--Corral sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 5,300 to 5,350
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Corral sandy loam, 0 to 2 percent slopes--85 percent
Capona fine sandy loam, 0 to 2 percent slopes--8 percent
Cleghorn sandy loam, 0 to 2 percent slopes--7 percent

Component Description

Corral and similar soils
Landform: Rock pediments
Slope: 0 to 2 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff

Typical vegetation: Big sagebrush, basin wildrye, needleandthread

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 19 inches; sandy clay loam
Layer 3--19 to 23 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 15 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4s-1
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Capona and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass
Ecological site: R021XE176CA--Loam 12-16

Cleghorn and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, basin wildrye, beardless wildrye, needleandthread, Thurber needlegrass
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

163--Corral sandy loam, 2 to 5 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmonts
Elevation: 4,440 to 5,300
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 60 to 130 days

Composition

Corral sandy loam, 2 to 5 percent slopes--85 percent
Capona fine sandy loam, 2 to 5 percent slopes--8 percent
Cleghorn sandy loam, 2 to 5 percent slopes--7 percent

Component Description

Corral and similar soils
Landform: Rock pediments
Slope: 2 to 5 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Needleandthread, big sagebrush, basin wildrye

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 19 inches; sandy clay loam
Layer 3--19 to 23 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 15 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Capona and similar soils
Composition: 0 to 8 percent
Slope: 2 to 5 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Ecological site: R021XE176CA--Loam 12-16

Cleghorn and similar soils
Composition: 0 to 7 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, basin wildrye, beardless wildrye, needleandthread, Thurber needlegrass
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

164--Corral sandy loam, 5 to 15 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,400 to 5,400
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Corral sandy loam, 5 to 15 percent slopes--90 percent
Shinnpeak very cobbly sandy loam, 5 to 15 percent slopes--3 percent
Hunnton cobbly sandy loam, 2 to 9 percent slopes--3 percent
Lodico very cobbly silt loam, 5 to 9 percent slopes--2 percent
Rock outcrop, 9 to 15 percent slopes--1 percent
Chalco family gravelly fine sandy loam, 9 to 15 percent slopes--1 percent

Component Description

Corral and similar soils
Landform: Rock pediments
Slope: 5 to 15 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Big sagebrush, Thurber needlegrass, basin wildrye, needleandthread

Typical profile:
Layer 1--0 to 4 inches; sandy loam
Layer 2--4 to 12 inches; sandy clay loam
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 12 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF091CA--Loamy upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Shinnpeak and similar soils
Composition: 0 to 3 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Bottlebrush squirreltail, other perennial forbs, other perennial grasses, bluebunch wheatgrass, black sagebrush, Sandberg bluegrass, other shrubs, Thurber needlegrass
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Hunnton and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, Wyoming big sagebrush, basin wildrye, other perennial forbs, other perennial grasses, antelope bitterbrush, other shrubs
Ecological site: R023XF082CA--Stony loam 9-12

Lodico and similar soils
Composition: 0 to 2 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, antelope bitterbrush
Ecological site: R023XF081CA--Shallow stony loam 9-12

Rock outcrop
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Landform: Escarpments, knolls
Ecological site: None assigned

Chalco family and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Landform: Backslopes of rock pediments, summits of rock pediments
Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

165--Corral loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,400 to 4,800
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Corral loam, 30 to 50 percent slopes--85 percent
Springmeyer loam, 2 to 5 percent slopes--5 percent
Longcreek very cobbly loam, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--3 percent
Gullied land, 30 to 50 percent slopes--2 percent

Component Description

Corral and similar soils
Landform: Escarpments
Slope: 30 to 50 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, needleandthread

Typical profile:
Layer 1--0 to 4 inches; loam
Layer 2--4 to 12 inches; sandy clay loam
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 12 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF091CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Springmeyer and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fans, terraces
Typical vegetation: Needleandthread, big sagebrush, Thurber needlegrass, basin wildrye
Ecological site: R023XF091CA--Loamy upland 9-12

Longcreek and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Typical vegetation: Antelope bitterbrush, mountain big sagebrush, basin wildrye, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Plateaus
Ecological site: None assigned

Gullied land
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Plateaus
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

166--Corral very cobbly loam, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,400 to 5,400
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Corral very cobbly loam, 5 to 30 percent slopes--85 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Shinnpeak very cobbly loam, 5 to 15 percent slopes--5 percent
Chalco gravelly fine sandy loam, 5 to 9 percent slopes--5 percent

Component Description

Corral and similar soils
Landform: Rock pediments
Slope: 5 to 30 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, big sagebrush, basin wildrye

Typical profile:
Surface rock fragments: About 20 percent cobbles, 5 percent stones
Layer 1--0 to 4 inches; very cobbly loam
Layer 2--4 to 12 inches; sandy clay loam
Layer 3--12 to 22 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 12 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 1.0 inch
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA--Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Escarpments
Ecological site: None assigned

Shinnpeak and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Black sagebrush, Sandberg bluegrass, other perennial forbs, other perennial grasses, bottlebrush squirreltail, other shrubs, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Chalco and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Backslopes of rock pediments, summits of rock pediments
Typical vegetation: Indian ricegrass, Webber needlegrass, Lahontan sagebrush, spiny hopsage, Thurber needlegrass
Ecological site: R023XF083CA--Shallow stony clay loam 9-12

Management

Major uses: Livestock grazing, wildlife habitat, watershed and recreation
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

167--Corral-Chalco complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21

Landscape: Fan piedmont
Elevation: 5,300 to 5,350
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Corral sandy loam, 0 to 2 percent slopes--50 percent
Chalco gravelly fine sandy loam, 0 to 2 percent slopes--35 percent
Dryvalley silt loam, 0 to 2 percent slopes--8 percent
Hagata silt loam, 0 to 2 percent slopes--7 percent

Component Description

Corral and similar soils
Landform: Rock pediments
Slope: 0 to 2 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Big sagebrush, basin wildrye, needleandthread

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 19 inches; sandy clay loam
Layer 3--19 to 23 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 15 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4s-1
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Component Description

Chalco and similar soils
Landform: Rock pediments
Slope: 0 to 2 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Low sagebrush, Sandberg bluegrass, other perennial grasses, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush

Typical profile:
Layer 1--0 to 4 inches; gravelly fine sandy loam
Layer 2--4 to 15 inches; clay
Layer 3--15 to 19 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Very slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE184CA--Shallow loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dryvalley and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Big sagebrush, rubber rabbitbrush, littleleaf horsebrush, Nevada bluegrass
Ecological site: R021XE177CA--Silty flat 12-16

Hagata and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Eriogonum, low sagebrush, bluegrass, Nevada bluegrass, bottlebrush squirreltail, Thurber needlegrass, Idaho fescue
Ecological site: R021XE184CA--Shallow loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

168--Corral-Glenbrook complex, 15 to 50 percent slopes

Map Unit Setting

MLRA: 26

Landscape: Fan piedmont
Elevation: 4,400 to 5,400
Precipitation: 10 to 12 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Corral loam, 15 to 50 percent slopes--60 percent
Glenbrook gravelly loamy coarse sand, 15 to 50 percent slopes--20 percent
Calpine sandy loam, 9 to 15 percent slopes--8 percent
Galeppi loamy sand, 15 to 50 percent slopes--7 percent
Glenbrook gravelly loamy coarse sand, 15 to 50 percent slopes, very bouldery--5 percent

Component Description

Corral and similar soils
Landform: Backslopes of rock pediments
Slope: 15 to 50 percent
Parent material: Colluvium derived from tuff and residuum weathered from tuff
Typical vegetation: Thurber needlegrass, big sagebrush, basin wildrye, needleandthread

Typical profile:
Layer 1--0 to 4 inches; loam
Layer 2--4 to 12 inches; sandy clay loam
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 12 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF091CA--Loamy upland 9-12

Component Description

Glenbrook and similar soils
Landform: Backslopes of mountains
Slope: 15 to 50 percent
Parent material: Residuum weathered from granite
Typical vegetation: Green ephedra, big sagebrush, yellow rabbitbrush, other perennial forbs, other perennial grasses, antelope bitterbrush, bottlebrush squirreltail, other shrubs, desert needlegrass, Thurber needlegrass

Typical profile:
Layer 1--0 to 3 inches; gravelly loamy coarse sand
Layer 2--3 to 12 inches; gravelly loamy coarse sand
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.7 inch
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calpine and similar soils
Composition: 0 to 8 percent
Slope: 9 to 15 percent
Landform: Alluvial fans
Typical vegetation: Beardless wildrye, Indian ricegrass, antelope bitterbrush, needleandthread, western needlegrass, mountain big sagebrush
Ecological site: R021XE181CA--Granitic fan 12-16

Galeppi and similar soils
Composition: 0 to 7 percent
Slope: 15 to 50 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, green ephedra, Anderson peachbrush, antelope bitterbrush, needlegrass
Ecological site: R026XF052CA--Granitic upland 9-12

Glenbrook and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Yellow rabbitbrush, big sagebrush, other perennial forbs, other perennial grasses, antelope bitterbrush, bottlebrush squirreltail, other

shrubs, desert needlegrass, Thurber needlegrass, green ephedra
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

169--Devada-Brubeck association, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateaus
Elevation: 4,400 to 5,600
Precipitation: 10 to 12 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Devada very stony loam, 2 to 9 percent slopes--50 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--45 percent
Devada very stony loam, 2 to 9 percent slopes--5 percent

Component Description

Devada and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, bluegrass

Typical profile:
Surface rock fragments: About 25 percent cobbles, 20 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 17 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Brubeck and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bottlebrush squirreltail, western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, Thurber needlegrass, littleleaf horsebrush

Typical profile:
Surface rock fragments: About 30 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly clay
Layer 2--2 to 32 inches; clay
Layer 3--32 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA--Clay upland 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent, south aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Thurber needlegrass, bluegrass, bluebunch wheatgrass, low sagebrush

Ecological site: R023XF081CA--Shallow stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

170--Devada-Bucklake association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 5,000 to 5,400
Precipitation: 10 to 12 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Devada very stony loam, 2 to 30 percent slopes--35 percent
Bucklake very stony loam, 9 to 30 percent slopes--35 percent
Brubeck very cobbly clay, 15 to 30 percent slopes--8 percent
Fivesprings very stony loam, 15 to 30 percent slopes--7 percent
Orhood very stony loam, 9 to 30 percent slopes--4 percent
Gerlach silty clay, 2 to 9 percent slopes--4 percent
Searles very stony loam, 9 to 30 percent slopes--3 percent
Rock outcrop, 15 to 30 percent slopes--4 percent

Component Description

Devada and similar soils
Landform: Mountains
Slope: 2 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, bluegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Bucklake and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, basin wildrye, antelope bitterbrush

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 12 inches; gravelly clay loam
Layer 3--12 to 24 inches; gravelly clay
Layer 4--24 to 34 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Brubeck and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Landform: Plateaus

Typical vegetation: Big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush, western wheatgrass
Ecological site: R023XF084CA--Clay upland 9-16

Fivesprings and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, basin wildrye, bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush
Ecological site: R023XF082CA--Stony loam 9-12

Orhood and similar soils
Composition: 0 to 4 percent
Slope: 9 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--rabbitbrush, Idaho fescue, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass, Lemmon needlegrass, mountain big sagebrush, arrowleaf balsamroot, Sandberg bluegrass
Ecological site: R021XE174CA--Stony loam 12-16

Gerlach and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Alluvial flats
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Rock outcrop
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Searles and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

171--Devada-Fivesprings-Rubble land association, 9 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 5,000 to 5,400
Precipitation: 10 to 12 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Devada very stony loam, 9 to 50 percent slopes--40 percent
Fivesprings very stony loam, 30 to 50 percent slopes--25 percent
Rubble land fragmental material, 15 to 50 percent slopes--20 percent
Loomis very cobbly loam, 15 to 30 percent slopes--8 percent
Searles very stony loam, 15 to 50 percent slopes--7 percent

Component Description

Devada and similar soils
Landform: Backslopes of mountains, ridges
Slope: 9 to 50 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, Thurber needlegrass, low sagebrush, bluegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Fivesprings and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Rubble land
Landform: Mountains
Slope: 15 to 50 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Loomis and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Landform: Backslopes of plateaus
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, black sagebrush, Sandberg bluegrass, bottlebrush squirreltail
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Searles and similar soils
Composition: 0 to 7 percent
Slope: 15 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

172--Devada-Gavel complex, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,200 to 6,200
Precipitation: 20 to 25 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Devada extremely stony loam, 9 to 30 percent slopes--60 percent
Gavel gravelly loam, 9 to 30 percent slopes--35 percent
Ulhalf very gravelly loam, 9 to 30 percent slopes--5 percent

Component Description

Devada and similar soils
Landform: Ridges
Slope: 9 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite

Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 50

Typical profile:
Surface rock fragments: About 25 percent cobbles, 35 percent stones
Layer 1--0 to 7 inches; extremely stony loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Gavel and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--mountain big sagebrush, Columbia needlegrass, sedge, Idaho fescue, bottlebrush squirreltail, curlleaf mountain mahogany
Site index: Jeffrey pine--71 at an age base of 100 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 3 percent stones
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 27 inches; very gravelly loam
Layer 3--27 to 70 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ulhalf and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, ponderosa pine, white fir; Forest understory--whitethorn ceanothus, snowbrush ceanothus, mountain brome, needlegrass, greenleaf manzanita
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

173--Devada-Gavel-Whitinger association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 4,800 to 5,200
Precipitation: 12 to 14 inches
Air temperature: 45 to 46 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Devada very stony loam, 5 to 15 percent slopes--40 percent
Gavel gravelly loam, 15 to 30 percent slopes--25 percent
Whitinger very stony loam, 5 to 30 percent slopes--15 percent
Rubble land, 5 to 30 percent slopes--4 percent
Rock outcrop, 5 to 30 percent slopes--4 percent

Petescreek gravelly loam, 15 to 30 percent slopes--4 percent
Orhood very stony loam, 15 to 30 percent slopes--4 percent
Bucklake very stony loam, 15 to 30 percent slopes--4 percent

Component Description

Devada and similar soils
Landform: Mountains
Slope: 5 to 15 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 50

Typical profile:
Surface rock fragments: About 10 percent cobbles, 20 percent stones
Layer 1--0 to 7 inches; very stony loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Gavel and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--Idaho fescue, mountain big sagebrush, Columbia needlegrass, bottlebrush squirreltail, curlleaf mountain mahogany, sedge
Site index: Jeffrey pine--71 at an age base of 100 years

Typical profile:
Surface rock fragments: About 3 percent stones, 10 percent cobbles
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 27 inches; very gravelly loam
Layer 3--27 to 70 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Component Description

Whitinger and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from basalt and residuum weathered from basalt
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass
Site index: Western juniper--25 at an age base of 50 years

Typical profile:
Surface rock fragments: About 20 percent cobbles, 12 percent stones
Layer 1--0 to 6 inches; very stony loam
Layer 2--6 to 15 inches; very stony clay loam
Layer 3--15 to 26 inches; very cobbly clay loam
Layer 4--26 to 36 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 4 percent
Slope: 5 to 30 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 4 percent
Slope: 5 to 30 percent
Landform: Mountains
Ecological site: None assigned

Petescreek and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass
Ecological site: R021XE044CA

Orhood and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Idaho fescue, arrowleaf balsamroot, mountain big sagebrush, rabbitbrush, Thurber needlegrass, bluebunch wheatgrass, Sandberg bluegrass, Lemmon needlegrass, antelope bitterbrush
Ecological site: R021XE174CA--Stony loam 12-16

Bucklake and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, basin wildrye, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass
Ecological site: R023XF082CA--Stony loam 9-12

Management

Major uses: Timber production, livestock grazing, juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

174--Devada-Glean-Sumine association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,000 to 6,000
Precipitation: 10 to 14 inches
Air temperature: 45 to 46 degrees Fahrenheit
Frost-free period: 70 to 80 days

Composition

Devada very stony loam, 30 to 50 percent slopes--35 percent
Glean very gravelly loam, 30 to 50 percent slopes--30 percent
Sumine very stony loam, 30 to 50 percent slopes--20 percent
Orhood very stony loam, 30 to 50 percent slopes--5 percent
Longcreek extremely stony loam, 30 to 50 percent slopes--5 percent
Alomax very stony sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Devada and similar soils
Landform: Backslopes of mountains, ridges
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, bluegrass

Typical profile:
Surface rock fragments: About 20 percent stones, 15 percent cobbles
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches

Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Glean and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock
Typical vegetation: Needlegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush

Typical profile:
Layer 1--0 to 3 inches; very gravelly loam
Layer 2--3 to 44 inches; very gravelly loam
Layer 3--44 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA

Component Description

Sumine and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, Idaho fescue, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 5 percent stones, 20 percent cobbles
Layer 1--0 to 10 inches; very stony loam
Layer 2--10 to 34 inches; very cobbly clay loam
Layer 3--34 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Orhood and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Thurber needlegrass, rabbitbrush, mountain big sagebrush, arrowleaf balsamroot, antelope bitterbrush, Sandberg bluegrass, bluebunch wheatgrass, Lemmon needlegrass, Idaho fescue
Ecological site: R021XE174CA--Stony loam 12-16

Longcreek and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Typical vegetation: Basin wildrye, bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass, antelope bitterbrush
Ecological site: R023XF082CA--Stony loam 9-12

Alomax very stony sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains, ridges
Typical vegetation: Idaho fescue, needlegrass, antelope bitterbrush, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

175--Devada-Longcreek association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 5,000 to 6,000
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Devada very cobbly loam, 2 to 30 percent slopes--60 percent
Longcreek extremely stony loam, 2 to 30 percent slopes--30 percent
Bucklake very stony loam, 9 to 30 percent slopes--3 percent
Rock outcrop, 15 to 30 percent slopes--2 percent
Tunnison very cobbly clay, 5 to 9 percent slopes--2 percent
Loomis very cobbly loam, 5 to 30 percent slopes--2 percent
Rubble land, 15 to 30 percent slopes--1 percent

Component Description

Devada and similar soils
Landform: Mountains
Slope: 2 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, low sagebrush, bluegrass, Thurber needlegrass

Typical profile:
Surface rock fragments: About 25 percent stones, 25 percent cobbles
Layer 1--0 to 4 inches; very cobbly loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Longcreek and similar soils
Landform: Mountains
Slope: 2 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, basin wildrye, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 25 percent stones, 25 percent cobbles
Layer 1--0 to 3 inches; extremely stony loam
Layer 2--3 to 7 inches; very cobbly clay loam
Layer 3--7 to 18 inches; very cobbly clay
Layer 4--18 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bucklake and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, basin wildrye, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Tunnison and similar soils
Composition: 0 to 2 percent

Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Bottlebrush squirreltail, western wheatgrass, big sagebrush, beardless wildrye, littleleaf horsebrush, Thurber needlegrass, rubber rabbitbrush
Ecological site: R023XF093CA--Shallow clay 9-16

Loomis and similar soils
Composition: 0 to 2 percent
Slope: 5 to 30 percent
Landform: Backslopes of plateaus
Typical vegetation: Bottlebrush squirreltail, Sandberg bluegrass, black sagebrush, bluebunch wheatgrass, Thurber needlegrass
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Rubble land
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

176--Devada-Orhood-Hart Camp association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,500 to 6,000
Precipitation: 10 to 14 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Devada very stony loam, 5 to 15 percent slopes--30 percent
Orhood very stony loam, 5 to 30 percent slopes--30 percent
Hart Camp stony loam, 9 to 30 percent slopes--25 percent
Jauriga gravelly loam, 5 to 15 percent slopes--4 percent
Fiddler very stony loam, 15 to 30 percent slopes--4 percent
Searles very stony loam, 5 to 15 percent slopes--3 percent
Rock outcrop, 15 to 30 percent slopes--2 percent
Aquolls gravelly sandy loam, 0 to 5 percent slopes--1 percent
Rubble land, 15 to 30 percent slopes--1 percent

Component Description

Devada and similar soils
Landform: Backslopes of mountains
Slope: 5 to 15 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 15 percent stones, 20 percent cobbles
Layer 1--0 to 7 inches; very stony loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Orhood and similar soils
Landform: Ridges
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--rabbitbrush, bluebunch wheatgrass, Lemmon needlegrass, Sandberg bluegrass, antelope bitterbrush, Idaho fescue, arrowleaf balsamroot, mountain big sagebrush, Thurber needlegrass
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 15 percent stones, 10 percent cobbles
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 9 inches; very cobbly loam

Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA

Component Description

Hart Camp and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Andesitic tuff
Typical vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, basin wildrye, Canby bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 2 percent stones, 10 percent cobbles
Layer 1--0 to 4 inches; stony loam
Layer 2--4 to 16 inches; gravelly clay loam
Layer 3--16 to 20 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Jauriga and similar soils
Composition: 0 to 4 percent
Slope: 5 to 15 percent
Landform: Toeslopes of mountains
Typical vegetation: Antelope bitterbrush, bluegrass, Idaho fescue, mountain big sagebrush, needlegrass
Ecological site: R021XE044CA--Cool loam 12-16

Fiddler and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--antelope bitterbrush, arrowleaf balsamroot, Thurber needlegrass, mountain big sagebrush, Idaho fescue, rabbitbrush, Sandberg bluegrass, bluebunch wheatgrass, bottlebrush squirreltail, Nevada bluegrass
Ecological site: R021XE174CA--Stony loam 12-16

Searles and similar soils
Composition: 0 to 3 percent
Slope: 5 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, antelope bitterbrush, bluebunch wheatgrass, Thurber needlegrass
Ecological site: R021XE179CA

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Aquolls and similar soils
Composition: 0 to 1 percent
Slope: 0 to 5 percent
Landform: Lakeshores
Ecological site: None assigned

Rubble land
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Livestock grazing, juniper wood products, wildlife habitat, watershed and recreation

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

177--Devada-Papeek-Gavel complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,800 to 5,400
Precipitation: 20 to 25 inches
Air temperature: 45 to 46 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Devada very stony loam, 30 to 50 percent slopes--40 percent
Papeek cobbly clay loam, 30 to 50 percent slopes--30 percent
Gavel gravelly loam, 30 to 50 percent slopes--20 percent
Whitinger very stony loam, 30 to 50 percent slopes--5 percent
Gavel gravelly loam, thin surface, 30 to 50 percent slopes--5 percent

Component Description

Devada and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 15 percent stones, 15 percent cobbles
Layer 1--0 to 7 inches; very stony loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Papeek and similar soils
Landform: Toeslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metasedimentary rock and residuum weathered from metasedimentary rock
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--antelope bitterbrush, Idaho fescue, mountain big sagebrush
Site index: Jeffrey pine--79 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 51

Typical profile:
Layer 1--0 to 3 inches; cobbly clay loam
Layer 2--3 to 24 inches; clay
Layer 3--24 to 33 inches; sandy clay loam
Layer 4--33 to 43 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Gavel and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--Columbia needlegrass, mountain big sagebrush, sedge, curlleaf mountain mahogany, Idaho fescue, bottlebrush squirreltail

Site index: Jeffrey pine--71 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 50

Typical profile:
Surface rock fragments: About 3 percent stones, 10 percent cobbles
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 27 inches; very gravelly loam
Layer 3--27 to 70 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Whitinger and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--Idaho fescue, mountain big sagebrush, bluebunch wheatgrass, needlegrass, antelope bitterbrush
Ecological site: R021XE174CA--Stony loam 12-16

Gavel and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--mountain big sagebrush, Columbia needlegrass, Idaho fescue, bottlebrush squirreltail, sedge, curlleaf mountain mahogany
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

178--Devada-Petescreek-Fiddler association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,600 to 6,200
Precipitation: 12 to 14 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Devada very stony loam, 2 to 15 percent slopes--40 percent
Petescreek gravelly loam, 15 to 30 percent slopes--25 percent
Fiddler very stony loam, 5 to 30 percent slopes--20 percent
Longcreek extremely stony loam, 15 to 30 percent slopes--3 percent
Fredonyer very stony loam, 15 to 30 percent slopes--3 percent
Bucklake very cobbly loam, 9 to 15 percent slopes--3 percent
Dune land, 2 to 30 percent slopes--2 percent
Tunnison very cobbly clay, 15 to 30 percent slopes--2 percent
Madeline very stony loam, 15 to 30 percent slopes--2 percent

Component Description

Devada and similar soils
Landform: Backslopes of mountains, ridges
Slope: 2 to 15 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Antelope bitterbrush, bluegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass, Thurber needlegrass

Typical profile:
Surface rock fragments: About 40 percent stones, 10 percent cobbles
Layer 1--0 to 7 inches; very stony loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Petescreek and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluegrass, mountain big sagebrush, needlegrass, antelope bitterbrush, Idaho fescue

Typical profile:
Surface rock fragments: About 2 percent cobbles
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Fiddler and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--mountain big sagebrush, Thurber needlegrass, arrowleaf balsamroot, antelope bitterbrush, rabbitbrush, bluebunch wheatgrass, Nevada bluegrass, Sandberg bluegrass, bottlebrush squirreltail, Idaho fescue
Site index: Western juniper--20 at an age base of 50 years

Typical profile:
Surface rock fragments: About 30 percent stones, 10 percent cobbles
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 14 inches; very cobbly clay loam
Layer 3--14 to 23 inches; clay
Layer 4--23 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Longcreek and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Typical vegetation: Bluebunch wheatgrass, basin wildrye, antelope bitterbrush, Thurber needlegrass, mountain big sagebrush
Ecological site: R023XF082CA--Stony loam 9-12

Fredonyer and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Idaho fescue, mountain big sagebrush, curlleaf mountain mahogany
Ecological site: R021XE178CA--Very stony loam 12-16

Bucklake and similar soils
Composition: 0 to 3 percent

Slope: 9 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Dune land
Composition: 0 to 2 percent
Slope: 2 to 30 percent
Landform: Dunes
Ecological site: None assigned

Tunnison and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, littleleaf horsebrush, western wheatgrass, Thurber needlegrass
Ecological site: R023XF093CA--Shallow clay 9-16

Madeline and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing, juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

179--Devada-Rock outcrop association, 2 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 4,400 to 5,400
Precipitation: 12 to 14 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 100 days

Composition

Devada very cobbly loam, 2 to 50 percent slopes--70 percent
Rock outcrop unweathered bedrock, 2 to 50 percent slopes--20 percent
Longcreek very stony loam, 15 to 50 percent slopes--10 percent

Component Description

Devada and similar soils
Landform: Backslopes of mountains
Slope: 2 to 50 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluegrass, low sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 5 percent stones, 30 percent cobbles
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF081CA

Component Description

Rock outcrop
Landform: Mountains
Slope: 2 to 50 percent

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Longcreek and similar soils
Composition: 0 to 10 percent

Slope: 15 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush, basin wildrye, mountain big sagebrush
Ecological site: R023XF082CA--Stony loam 9-12

Management

Major uses: Livestock grazing, urban land
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

180--Dotta gravelly loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,200 to 5,300
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Dotta gravelly loam, 2 to 9 percent slopes--95 percent
Swainow very gravelly sandy loam, 5 to 9 percent slopes--5 percent

Component Description

Dotta and similar soils
Landform: Stream terraces
Slope: 2 to 9 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Mountain big sagebrush, antelope bitterbrush, bluegrass, needlegrass, Idaho fescue

Typical profile:
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 56 inches; gravelly sandy clay loam
Layer 3--56 to 60 inches; gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Swainow and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--manzanita, whitethorn ceanothus, snowbrush ceanothus, needlegrass, mountain brome
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

181--Dotta gravelly loam, high water table, 0 to 5 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,200 to 5,300
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Dotta gravelly loam, 0 to 5 percent slopes--90 percent
Keddie loam, 0 to 2 percent slopes--10 percent

Component Description

Dotta and similar soils
Landform: Stream terraces
Slope: 0 to 5 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Idaho fescue, bluegrass, antelope bitterbrush, needlegrass, mountain big sagebrush

Typical profile:
Layer 1--0 to 9 inches; gravelly loam
Layer 2--9 to 32 inches; gravelly sandy clay loam

Layer 3--32 to 60 inches; gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Water table: Present

Interpretive Groups
Nonirrigated land capability: 4w-4
Ecological site: R021XE044CA—Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Keddie and similar soils
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

182--Dryvalley silt loam, sandy substratum, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Lake plain
Elevation: 5,290 to 5,350
Precipitation: 8 to 10 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Dryvalley silt loam, 0 to 2 percent slopes--90 percent
Termo silty clay, 0 to 2 percent slopes--5 percent
Cleghorn sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Dryvalley and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Nevada bluegrass, littleleaf horsebrush, rubber rabbitbrush, big sagebrush

Typical profile:
Layer 1--0 to 4 inches; silt loam
Layer 2--4 to 20 inches; silty clay
Layer 3--20 to 42 inches; silty clay loam
Layer 4--42 to 60 inches; stratified sand to sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 8 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4s-3
Nonirrigated land capability: 4s-3
Ecological site: R021XE177CA--Silty flat 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Termo and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, Nevada bluegrass, spiny hopsage, basin wildrye, big sagebrush, rubber rabbitbrush
Ecological site: R021XE192CA--Silty sodic flat 12-16

Cleghorn and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, basin wildrye, beardless wildrye, Thurber needlegrass, needleandthread
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

183--Dryvalley-Playas complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Lake plain
Elevation: 5,300 to 5,350
Precipitation: 8 to 10 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Dryvalley silty clay loam, 0 to 2 percent slopes--75 percent
Playas silty clay, 0 to 1 percent slopes--15 percent
Cleghorn sandy loam, 0 to 2 percent slopes--4 percent
Corral sandy loam, 0 to 2 percent slopes--4 percent
Ravendale silty clay, 0 to 1 percent slopes--2 percent

Component Description

Dryvalley and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin big sagebrush, rubber rabbitbrush, littleleaf horsebrush, Nevada bluegrass

Typical profile:
Layer 1--0 to 5 inches; silty clay loam
Layer 2--5 to 10 inches; silty clay
Layer 3--10 to 34 inches; clay
Layer 4--34 to 60 inches; silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 10 inches
Present flooding: None
Present ponding: Frequent
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4w-6
Ecological site: R021XE177CA--Silty flat 12-16

Component Description

Playas silty clay
Landform: Playas
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Cleghorn and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, basin wildrye, beardless wildrye, Thurber needlegrass, needleandthread
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Corral and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Rock pediments
Typical vegetation: Basin wildrye, big sagebrush, needleandthread
Ecological site: R021XE195CA--Sandy loam terrace 12-16

Ravendale drained and similar soils
Composition: 0 to 2 percent
Slope: 0 to 1 percent
Landform: Basin floors
Typical vegetation: Rubber rabbitbrush, Nevada bluegrass, beardless wildrye, basin big sagebrush, western wheatgrass
Ecological site: R021XE189CA--Clay fan 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

184--Eaglelake very gravelly loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Plateau
Elevation: 5,400 to 6,400
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Eaglelake very gravelly loam, 2 to 9 percent slopes--85 percent
Outland very stony loam, 5 to 9 percent slopes--5 percent
Rock outcrop, 5 to 9 percent slopes--5 percent
Eaglelake very gravelly loam, 5 to 9 percent slopes, extremely stony--5 percent

Component Description

Eaglelake and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus, other perennial grasses, needlegrass
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--55 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 8 inches; very gravelly loam
Layer 2--8 to 17 inches; loam
Layer 3--17 to 55 inches; gravelly clay loam
Layer 4--55 to 77 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 3s-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Outland and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--antelope bitterbrush, snowbrush ceanothus, squawcarpet, whitethorn ceanothus, Sierra chinkapin, snowberry, sharpleaf snowberry, greenleaf manzanita
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Lava flows
Ecological site: None assigned

Eaglelake and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--greenleaf manzanita, other perennial grasses, needlegrass, snowbrush ceanothus, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

185--Eaglelake-Outland-Weste complex, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,500 to 6,100
Precipitation: 20 to 30 inches

Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Eaglelake very gravelly loam, 9 to 30 percent slopes--50 percent
Outland very gravelly sandy loam, 9 to 30 percent slopes--25 percent
Weste very stony sandy loam, 9 to 30 percent slopes--15 percent
Inville very gravelly sandy loam, 9 to 30 percent slopes--5 percent
Outland very gravelly sandy loam, 15 to 30 percent slopes, extremely stony--3 percent
Rock outcrop, 15 to 30 percent slopes--2 percent

Component Description

Eaglelake and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus, other perennial grasses, needlegrass
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--55 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 7 inches; very gravelly loam
Layer 2--7 to 16 inches; loam
Layer 3--16 to 54 inches; gravelly clay loam
Layer 4--54 to 76 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Outland and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--sharpleaf snowberry, snowberry, squawcarpet, greenleaf manzanita, Sierra chinkapin, snowbrush ceanothus, whitethorn ceanothus
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Layer 1--0 to 4 inches; very gravelly sandy loam
Layer 2--4 to 36 inches; very gravelly loam
Layer 3--36 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--squawcarpet, whitethorn ceanothus, greenleaf manzanita
Site index: Jeffrey pine--82 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 61

Typical profile:
Surface rock fragments: About 5 percent cobbles, 20 percent stones
Layer 1--0 to 14 inches; very stony sandy loam

Layer 2--14 to 24 inches; very gravelly loam
Layer 3--24 to 34 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Inville and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Landform: Alluvial fans
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--manzanita, whitethorn ceanothus, snowbrush ceanothus
Ecological site: None assigned

Outland and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--whitethorn ceanothus, greenleaf manzanita, snowbrush ceanothus, sharpleaf snowberry, squawcarpet, Sierra chinkapin, snowberry
Ecological site: None assigned

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

186--Eaglelake-Outland-Weste complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,400 to 6,500
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Eaglelake very gravelly loam, 30 to 50 percent slopes--45 percent
Outland very gravelly sandy loam, 30 to 50 percent slopes--25 percent
Weste very stony sandy loam, 30 to 50 percent slopes--15 percent
Rubble land, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Easte very gravelly sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Eaglelake and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--other perennial grasses, snowbrush ceanothus, whitethorn ceanothus, greenleaf manzanita, needlegrass
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--55 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 7 inches; very gravelly loam
Layer 2--7 to 16 inches; loam
Layer 3--16 to 54 inches; gravelly clay loam
Layer 4--54 to 76 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick

Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Outland and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--snowbrush ceanothus, squawcarpet, Sierra chinkapin, whitethorn ceanothus, sharpleaf snowberry, snowberry, greenleaf manzanita
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Layer 1--0 to 4 inches; very gravelly sandy loam
Layer 2--4 to 36 inches; very gravelly loam
Layer 3--36 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--greenleaf manzanita, whitethorn ceanothus, squawcarpet
Site index: Jeffrey pine--82 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 61

Typical profile:
Surface rock fragments: About 20 percent stones, 5 percent cobbles
Layer 1--0 to 14 inches; very stony sandy loam
Layer 2--14 to 24 inches; very gravelly loam
Layer 3--24 to 34 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Easte and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains

Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--other perennial grasses, needlegrass, greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

187--Eaglelake-Outland-Weste complex, altered, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,200 to 6,500
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Eaglelake very gravelly loam, altered, 9 to 30 percent slopes--45 percent
Outland very stony loam, altered, 5 to 30 percent slopes--25 percent
Weste very stony sandy loam, altered, 9 to 30 percent slopes--15 percent
Rubble land, 15 to 30 percent slopes--5 percent
Easte very gravelly sandy loam, 15 to 30 percent slopes--4 percent
Outland very stony loam, 15 to 30 percent slopes--3 percent
Weste very stony sandy loam, 15 to 30 percent slopes, extremely stony--3 percent

Component Description

Eaglelake and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--other perennial grasses, snowbrush ceanothus, needlegrass, greenleaf manzanita, whitethorn ceanothus
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--55 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 12 inches; very gravelly loam
Layer 2--12 to 43 inches; gravelly clay loam
Layer 3--43 to 47 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The upper 4 to 6 inches of the surface layer has been removed and piled in windrows.
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Outland and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--snowberry, whitethorn ceanothus, Sierra chinkapin, greenleaf manzanita, squawcarpet, sharpleaf snowberry, snowbrush ceanothus, antelope bitterbrush
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Surface rock fragments: About 10 percent stones, 5 percent cobbles
Layer 1--0 to 10 inches; very stony loam
Layer 2--10 to 24 inches; very cobbly sandy loam
Layer 3--24 to 28 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The upper 4 to 6 inches of the surface layer has been removed and piled in windrows.

Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--squawcarpet, whitethorn ceanothus, greenleaf manzanita
Site index: Jeffrey pine--82 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 61

Typical profile:
Surface rock fragments: About 15 percent stones, 10 percent cobbles
Layer 1--0 to 10 inches; very stony sandy loam
Layer 2--10 to 24 inches; very gravelly loam
Layer 3--24 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The upper 4 to 6 inches of the surface layer has been removed and piled in windrows.
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Easte and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--snowbrush ceanothus, whitethorn ceanothus, greenleaf manzanita, other perennial grasses, needlegrass
Ecological site: None assigned

Outland and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--whitethorn ceanothus, Sierra chinkapin, squawcarpet, snowbrush ceanothus, snowberry, antelope bitterbrush, greenleaf manzanita, sharpleaf snowberry
Ecological site: None assigned

Weste and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--squawcarpet, greenleaf manzanita, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

188--Eaglelake-Outland-Weste complex, altered, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,400 to 6,500
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Eaglelake very gravelly loam, 30 to 50 percent slopes--45 percent
Outland very stony loam, 30 to 50 percent slopes--25 percent
Weste very stony sandy loam, 30 to 50 percent slopes--15 percent
Deadwood very gravelly sandy loam, 30 to 50 percent slopes--8 percent
Eaglelake very gravelly loam, 30 to 50 percent slopes, extremely stony--7 percent

Component Description

Eaglelake and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--greenleaf manzanita, needlegrass, other perennial grasses, snowbrush ceanothus, whitethorn ceanothus
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--55 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 12 inches; very gravelly loam
Layer 2--12 to 43 inches; gravelly clay loam
Layer 3--43 to 47 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The upper 4 to 6 inches of the surface layer has been removed and piled in windrows.
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Outland and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--squawcarpet, antelope bitterbrush, snowberry, snowbrush ceanothus, sharpleaf snowberry, greenleaf manzanita, whitethorn ceanothus, Sierra chinkapin
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Surface rock fragments: About 10 percent stones, 5 percent cobbles
Layer 1--0 to 10 inches; very stony loam
Layer 2--10 to 24 inches; very cobbly sandy loam
Layer 3--24 to 28 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The upper 4 to 6 inches of the surface layer has been removed and piled in windrows.
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Weste and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--greenleaf manzanita, whitethorn ceanothus, squawcarpet
Site index: Jeffrey pine--82 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 61

Typical profile:
Surface rock fragments: About 15 percent stones, 10 percent cobbles
Layer 1--0 to 10 inches; very stony sandy loam

Layer 2--10 to 24 inches; very gravelly loam
Layer 3--24 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The upper 4 to 6 inches of the surface layer has been removed and piled in windrows.
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Deadwood and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine; Forest understory--pinemat manzanita, greenleaf manzanita, California nutmeg
Ecological site: None assigned

Eaglelake and similar soils
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--other perennial grasses, needlegrass, whitethorn ceanothus, greenleaf manzanita, snowbrush ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

189--Easte-Fredonyer association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,400 to 7,600
Precipitation: 16 to 20 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Easte gravelly loam, 30 to 50 percent slopes--55 percent
Fredonyer very stony loam, 30 to 50 percent slopes--30 percent
Petescreek very gravelly loam, 30 to 50 percent slopes--4 percent
Glean very stony loam, 30 to 50 percent slopes--3 percent
Said gravelly loam, 30 to 50 percent slopes--3 percent
Rubble land, 30 to 50 percent slopes--2 percent
Xerolls loamy coarse sand, 30 to 50 percent slopes--2 percent
Eaglelake family very gravelly loam, 30 to 50 percent slopes--1 percent

Component Description

Easte and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--white fir, Forest understory--mountain big sagebrush, Idaho fescue, other perennial grasses, antelope bitterbrush
Site index: White fir--42 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 49

Typical profile:
Layer 1--0 to 13 inches; gravelly loam
Layer 2--13 to 58 inches; extremely gravelly loam
Layer 3--58 to 62 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None

Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Fredonyer and similar soils
Landform: Backslopes of mountains, ridges
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, curlleaf mountain mahogany, Idaho fescue

Typical profile:
Surface rock fragments: About 25 percent stones, 5 percent cobbles
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE178CA--Very stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Petescreek and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, needlegrass, antelope bitterbrush, bluegrass, Idaho fescue
Ecological site: R021XE044CA

Glean and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, Idaho fescue, mountain big sagebrush, needlegrass, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Said and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--snowberry, whitethorn ceanothus, squawcarpet, manzanita, Columbia needlegrass, Idaho fescue, mountain big sagebrush
Ecological site: None assigned

Rubble land
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Xerolls and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Lakeshores
Ecological site: None assigned

Eaglelake family and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--other perennial grasses, needlegrass, greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

190--Easte-Roop complex, 5 to 30 percent slopes

Map Unit Setting

MLRA: 22

Landscape: Mountains
Elevation: 6,400 to 7,200
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Easte very gravelly sandy loam, 5 to 30 percent slopes--50 percent
Roop very stony loam, 5 to 30 percent slopes--35 percent
Rock outcrop, 15 to 30 percent slopes--4 percent
Outland very stony loam, 15 to 30 percent slopes--4 percent
Rubble land, 15 to 30 percent slopes--3 percent
Roop very stony loam, 15 to 30 percent slopes, extremely stony--2 percent
Easte very gravelly sandy loam, 30 to 50 percent slopes, extremely stony--2 percent

Component Description

Easte and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--needlegrass, greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus, other perennial grasses
Site index: White fir--46 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 53

Typical profile:
Layer 1--0 to 13 inches; very gravelly sandy loam
Layer 2--13 to 42 inches; extremely gravelly loam
Layer 3--42 to 62 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Roop and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Volcanic ash and colluvium derived from volcanic rock over residuum weathered from volcanic rock
Typical vegetation: Forest canopy--California red fir, western white pine, white fir; Forest understory--needlegrass, other perennial grasses, whitethorn ceanothus, greenleaf manzanita, snowbrush ceanothus
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 53

Typical profile:
Surface rock fragments: About 20 percent stones, 5 percent cobbles
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 13 inches; very gravelly sandy loam
Layer 3--13 to 27 inches; very gravelly loam
Layer 4--27 to 36 inches; very cobbly loam
Layer 5--36 to 46 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Outland and similar soils
Composition: 0 to 4 percent

Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--sharpleaf snowberry, snowberry, antelope bitterbrush, snowbrush ceanothus, squawcarpet, whitethorn ceanothus, Sierra chinkapin, greenleaf manzanita
Ecological site: None assigned

Rubble land
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Roop and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California red fir, western white pine, white fir; Forest understory--needlegrass, other perennial grasses, snowbrush ceanothus, whitethorn ceanothus, greenleaf manzanita
Ecological site: None assigned

Easte and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--needlegrass, greenleaf manzanita, other perennial grasses, snowbrush ceanothus, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, Christmas trees, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

191--Easte-Roop complex, 30 to 50 percent

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 6,000 to 7,200
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Easte very gravelly sandy loam, 30 to 50 percent slopes--50 percent
Roop very stony loam, 30 to 50 percent slopes--40 percent
Outland very stony loam, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--3 percent
Rubble land, 30 to 50 percent slopes--2 percent

Component Description

Easte and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--other perennial grasses, snowbrush ceanothus, whitethorn ceanothus, greenleaf manzanita, needlegrass
Site index: White fir--46 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 53

Typical profile:
Layer 1--0 to 13 inches; very gravelly sandy loam
Layer 2--13 to 42 inches; extremely gravelly loam
Layer 3--42 to 62 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Roop and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Volcanic ash and colluvium derived from volcanic rock over residuum weathered from volcanic rock

Typical vegetation: Forest canopy--California red fir, western white pine, white fir; Forest understory--other perennial grasses, snowbrush ceanothus, needlegrass, greenleaf manzanita, whitethorn ceanothus
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 53

Typical profile:
Surface rock fragments: About 20 percent stones, 5 percent cobbles
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 13 inches; very gravelly sandy loam
Layer 3--13 to 27 inches; very gravelly loam
Layer 4--27 to 36 inches; very cobbly loam
Layer 5--36 to 46 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Outland and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--greenleaf manzanita, Sierra chinkapin, whitethorn ceanothus, squawcarpet, snowbrush ceanothus, antelope bitterbrush, snowberry, sharpleaf snowberry
Ecological site: None assigned

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Rubble land
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Timber production, Christmas trees
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

192--Epot-Playas complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 4,000 to 4,010
Precipitation: 6 to 8 inches
Air temperature: 49 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Epot very fine sandy loam, 0 to 2 percent slopes--55 percent
Playas silty clay, 0 to 1 percent slopes--15 percent
Ardep fine sandy loam, 0 to 2 percent slopes--9 percent
Highrock fine sandy loam, 0 to 2 percent slopes--8 percent
Ragtown loam, 0 to 2 percent slopes--7 percent
Wespac fine sandy loam, 0 to 2 percent slopes--6 percent

Component Description

Epot and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 6 inches; very fine sandy loam
Layer 2--6 to 13 inches; loam
Layer 3--13 to 21 inches; clay loam
Layer 4--21 to 35 inches; clay loam
Layer 5--35 to 42 inches; loam
Layer 6--42 to 48 inches; clay loam
Layer 7--48 to 63 inches; stratified fine sand to very fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Very slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XG046CA--Sodic flat 6-9

Component Description

Playas silty clay
Landform: Playas
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ardep and similar soils
Composition: 0 to 9 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, bud sagebrush, shadscale, bottlebrush squirreltail
Ecological site: R023XG046CA

Highrock and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, basin wildrye, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XG047CA--Sodic terrace 6-9

Ragtown and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Spiny hopsage, shadscale, basin wildrye, black greasewood, bottlebrush squirreltail
Ecological site: R023XG047CA--Sodic terrace 6-9

Wespac and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail
Ecological site: R023XG048CA--Sodic loam 6-9

Management

Major uses: Livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

193--Epot-Ragtown-Playas complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 4,000 to 4,020
Precipitation: 6 to 8 inches
Air temperature: 49 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Epot very fine sandy loam, 0 to 2 percent slopes--40 percent
Ragtown loam, 0 to 2 percent slopes--30 percent
Playas silty clay, 0 to 1 percent slopes--20 percent
Wespac fine sandy loam, 0 to 2 percent slopes--5 percent
Ardep fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Epot and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 6 inches; very fine sandy loam
Layer 2--6 to 13 inches; loam
Layer 3--13 to 21 inches; clay loam
Layer 4--21 to 35 inches; clay loam
Layer 5--35 to 42 inches; loam
Layer 6--42 to 48 inches; clay loam
Layer 7--48 to 63 inches; stratified fine sand to very fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Very slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA--Sodic flat 6-9

Component Description

Ragtown and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Shadscale, basin wildrye, black greasewood, bottlebrush squirreltail, spiny hopsage

Typical profile:
Layer 1--0 to 4 inches; loam
Layer 2--4 to 60 inches; stratified silty clay loam to clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 11 inches
Present flooding: None
Natural drainage class: Moderately well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG047CA--Sodic terrace 6-9

Component Description

Playas silty clay
Landform: Playas
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Wespac and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin wildrye, basin big sagebrush, bottlebrush squirreltail, black greasewood
Ecological site: R023XG048CA--Sodic loam 6-9

Ardep and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, black greasewood, shadscale, bud sagebrush
Ecological site: R023XG046CA--Sodic flat 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

194--Fiddler-Gavel-Rubble land complex, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 4,800 to 5,800
Precipitation: 16 to 18 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fiddler very stony loam, 5 to 30 percent slopes--35 percent
Gavel gravelly loam, 5 to 30 percent slopes--30 percent
Rubble land fragmental material, 15 to 30 percent slopes--15 percent
Devada very cobbly loam, 15 to 30 percent slopes--7 percent
Orhood very stony loam, 5 to 30 percent slopes--6 percent
Rock outcrop, 15 to 30 percent slopes--3 percent
Whitinger very stony loam, 5 to 30 percent slopes--2 percent
Said gravelly loam, 15 to 30 percent slopes--2 percent

Component Description

Fiddler and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--Thurber needlegrass, rabbitbrush, antelope bitterbrush, arrowleaf balsamroot, mountain big sagebrush, Idaho fescue, bottlebrush squirreltail, Sandberg bluegrass, Nevada bluegrass, bluebunch wheatgrass
Site index: Western juniper--20 at an age base of 50 years

Typical profile:
Surface rock fragments: About 15 percent stones, 20 percent cobbles
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 14 inches; very cobbly clay loam
Layer 3--14 to 23 inches; clay
Layer 4--23 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Gavel and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--mountain big sagebrush, sedge, curlleaf mountain mahogany, Columbia needlegrass, Idaho fescue, bottlebrush squirreltail
Site index: Jeffrey pine--71 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 50

Typical profile:
Surface rock fragments: About 10 percent cobbles
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 27 inches; very gravelly loam
Layer 3--27 to 70 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Component Description

Rubble land
Landform: Mountains
Slope: 15 to 30 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Thurber needlegrass, antelope bitterbrush, bluegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass
Ecological site: R021XE173CA

Orhood and similar soils
Composition: 0 to 6 percent
Slope: 5 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Sandberg bluegrass, arrowleaf balsamroot, bluebunch wheatgrass, Thurber needlegrass, mountain big sagebrush, rabbitbrush,

Lemmon needlegrass, Idaho fescue, antelope bitterbrush
Ecological site: R021XE174CA

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Whitinger and similar soils
Composition: 0 to 2 percent
Slope: 5 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Said and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--manzanita, snowberry, Idaho fescue, squawcarpet, whitethorn ceanothus, mountain big sagebrush, Columbia needlegrass
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

195--Fiddler-Gavel-Rubble land association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 4,800 to 5,600
Precipitation: 16 to 18 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fiddler very stony loam, 30 to 50 percent slopes--40 percent
Gavel gravelly loam, 30 to 50 percent slopes--25 percent
Rubble land fragmental material, 30 to 50 percent slopes--15 percent
Orhood very stony loam, 30 to 50 percent slopes--5 percent
Devada very cobbly loam, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--4 percent
Whitinger very stony loam, 30 to 50 percent slopes--4 percent
Said gravelly loam, 30 to 50 percent slopes--2 percent

Component Description

Fiddler and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bottlebrush squirreltail, Sandberg bluegrass, Idaho fescue, mountain big sagebrush, Thurber needlegrass, arrowleaf balsamroot, antelope bitterbrush, rabbitbrush, Nevada bluegrass, bluebunch wheatgrass
Site index: Western juniper--20 at an age base of 50 years

Typical profile:
Surface rock fragments: About 15 percent stones, 20 percent cobbles
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 14 inches; very cobbly clay loam
Layer 3--14 to 23 inches; clay
Layer 4--23 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Gavel and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock

Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--bottlebrush squirreltail, Idaho fescue, Columbia needlegrass, mountain big sagebrush, curlleaf mountain mahogany, sedge
Site index: Jeffrey pine--71 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 50

Typical profile:
Surface rock fragments: About 10 percent cobbles
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 27 inches; very gravelly loam
Layer 3--27 to 70 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Rubble land
Landform: Mountains
Slope: 30 to 50 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Orhood and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Thurber needlegrass, arrowleaf balsamroot, bluebunch wheatgrass, mountain big sagebrush, Sandberg bluegrass, rabbitbrush, antelope bitterbrush, Lemmon needlegrass, Idaho fescue
Ecological site: R021XE174CA--Stony loam 12-16

Devada and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Antelope bitterbrush, Thurber needlegrass, bluegrass, Idaho fescue, bluebunch wheatgrass, low sagebrush
Ecological site: R021XE173CA--Shallow stony loam 12-16

Rock outcrop
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Whitinger and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, needlegrass, antelope bitterbrush, mountain big sagebrush, Idaho fescue
Ecological site: R021XE174CA

Said and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--manzanita, whitethorn ceanothus, squawcarpet, Idaho fescue, Columbia needlegrass, mountain big sagebrush, snowberry
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

196--Fiddler-Madeline association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21

Landscape: Mountains
Elevation: 5,400 to 5,800
Precipitation: 12 to 14 inches
Air temperature: 43 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Fiddler very stony loam, 5 to 30 percent slopes--45 percent
Madeline very stony loam, 5 to 30 percent slopes--35 percent
Orhood very stony loam, 5 to 30 percent slopes--5 percent
Devada very stony loam, 5 to 30 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--4 percent
Fivesprings very stony loam, 5 to 15 percent slopes--3 percent
Petescreek very gravelly loam, 5 to 15 percent slopes--3 percent

Component Description

Fiddler and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--rabbitbrush, antelope bitterbrush, arrowleaf balsamroot, Thurber needlegrass, mountain big sagebrush, Idaho fescue, bottlebrush squirreltail, Sandberg bluegrass, Nevada bluegrass, bluebunch wheatgrass
Site index: Western juniper--20 at an age base of 50 years

Typical profile:
Surface rock fragments: About 15 percent stones, 20 percent cobbles, 20 percent gravel
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 14 inches; very cobbly clay loam
Layer 3--14 to 23 inches; clay
Layer 4--23 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Madeline and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush

Typical profile:
Surface rock fragments: About 20 percent stones, 20 percent cobbles
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 9 inches; gravelly clay loam
Layer 3--9 to 16 inches; gravelly clay
Layer 4--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Orhood and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--arrowleaf balsamroot, bluebunch wheatgrass, antelope bitterbrush, Sandberg bluegrass, Lemmon needlegrass, mountain big sagebrush, Idaho fescue, rabbitbrush, Thurber needlegrass
Ecological site: R021XE174CA

Devada and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent, south aspect
Landform: Backslopes of mountains, ridges

Typical vegetation: Low sagebrush, bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush, bluegrass, Idaho fescue
Ecological site: R021XE173CA--Shallow stony loam 12-16

Rock outcrop
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Fivesprings and similar soils
Composition: 0 to 3 percent
Slope: 5 to 15 percent, south aspect
Landform: Mountains
Typical vegetation: Mountain big sagebrush, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R021XE179CA

Petescreek and similar soils
Composition: 0 to 3 percent
Slope: 5 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass
Ecological site: R021XE044CA--Cool loam 12-16

Management

Major uses: Juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

197--Fiddler-Orhood-Petescreek association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,400 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Fiddler very stony loam, 15 to 30 percent slopes--30 percent
Orhood very stony loam, 5 to 15 percent slopes--30 percent
Petescreek very gravelly loam, 9 to 30 percent slopes--25 percent
Home Camp stony loam, 5 to 15 percent slopes--5 percent
Fredonyer very stony loam, 5 to 30 percent slopes--4 percent
Buckbay gravelly loam, 9 to 30 percent slopes--3 percent
Badenaugh stony sandy loam, 5 to 15 percent slopes--3 percent

Component Description

Fiddler and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--Nevada bluegrass, antelope bitterbrush, bluebunch wheatgrass, bottlebrush squirreltail, Sandberg bluegrass, Idaho fescue, mountain big sagebrush, Thurber needlegrass, arrowleaf balsamroot, rabbitbrush
Site index: Western juniper--20 at an age base of 50 years

Typical profile:
Surface rock fragments: About 20 percent cobbles, 15 percent stones, 20 percent gravel
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 14 inches; very cobbly clay loam
Layer 3--14 to 23 inches; very cobbly clay
Layer 4--23 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Orhood and similar soils
Landform: Ridges
Slope: 5 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock

Typical vegetation: Forest canopy--western juniper, Forest understory--Thurber needlegrass, Sandberg bluegrass, Idaho fescue, Lemmon needlegrass, rabbitbrush, bluebunch wheatgrass, antelope bitterbrush, arrowleaf balsamroot, mountain big sagebrush
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Petescreek and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Needlegrass, antelope bitterbrush, bluegrass, Idaho fescue, mountain big sagebrush

Typical profile:
Layer 1--0 to 10 inches; very gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Home Camp and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Ridges
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Fredonyer and similar soils
Composition: 0 to 4 percent
Slope: 5 to 30 percent, south aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Curlleaf mountain mahogany, mountain big sagebrush, Idaho fescue
Ecological site: R021XE178CA--Very stony loam 12-16

Buckbay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--needlegrass, Idaho fescue, antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush
Ecological site: R021XE176CA--Loam 12-16

Badenaugh and similar soils
Composition: 0 to 3 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Green ephedra, big sagebrush, bluebunch wheatgrass, Anderson peachbrush, antelope bitterbrush, needlegrass
Ecological site: R026XF052CA--Granitic upland 9-12

Management

Major uses: Livestock grazing, juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:

"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

198--Fivesprings-Longcreek association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 5,000 to 5,600
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fivesprings very stony loam, 9 to 30 percent slopes--50 percent
Longcreek very stony loam, 9 to 30 percent slopes--35 percent
Rubble land, 15 to 30 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--5 percent

Component Description

Fivesprings and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, antelope bitterbrush, basin wildrye, mountain big sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Longcreek and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, mountain big sagebrush, bluebunch wheatgrass, basin wildrye, antelope bitterbrush

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 7 inches; very cobbly clay loam
Layer 3--7 to 18 inches; very cobbly clay
Layer 4--18 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Brubeck and similar soils
Composition: 0 to 5 percent

Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

199--Fivesprings-Longcreek association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 5,000 to 5,800
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fivesprings very stony loam, 30 to 50 percent slopes--50 percent
Longcreek very stony loam, 30 to 50 percent slopes--40 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Brubeck very cobbly clay, 30 to 50 percent slopes--5 percent

Component Description

Fivesprings and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Basin wildrye, Thurber needlegrass, antelope bitterbrush, mountain big sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Longcreek and similar soils
Landform: Backslopes of mountains, ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush, basin wildrye, mountain big sagebrush

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 7 inches; very cobbly clay loam
Layer 3--7 to 18 inches; very cobbly clay
Layer 4--18 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA--Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent

Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Brubeck and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Plateaus
Typical vegetation: Rubber rabbitbrush, western wheatgrass, big sagebrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

200--Fivesprings-Longcreek-Rubble land association, 9 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 5,200 to 6,000
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fivesprings very stony loam, 30 to 50 percent slopes--40 percent
Longcreek very stony loam, 9 to 30 percent slopes--25 percent
Rubble land fragmental material, 15 to 50 percent slopes--20 percent
Rock outcrop, 15 to 50 percent slopes--5 percent
Riverwash, 0 to 5 percent slopes--5 percent
Devada very cobbly loam, 30 to 50 percent slopes--5 percent

Component Description

Fivesprings and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, northwest to north aspects
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 25 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA—Stony loam 9-12

Component Description

Longcreek and similar soils
Landform: Shoulders of mountains, backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 7 inches; very cobbly clay loam
Layer 3--7 to 18 inches; very cobbly clay
Layer 4--18 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches

Permeability class (root zone): Slow
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Rubble land
Landform: Mountains
Slope: 15 to 50 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Landform: Mountains
Ecological site: None assigned

Riverwash
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Channels
Ecological site: None assigned

Devada and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Shoulders of mountains, backslopes of mountains
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, low sagebrush, bluegrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

201--Fivesprings-Rubble land-Devada association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 4,700 to 5,600
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fivesprings very stony loam, 5 to 30 percent slopes--40 percent
Rubble land fragmental material, 5 to 30 percent slopes--25 percent
Devada very cobbly loam, 5 to 30 percent slopes--20 percent
Tunnison very cobbly clay, 5 to 9 percent slopes--5 percent
Longcreek very stony loam, 30 to 50 percent slopes--5 percent
Brubeck very cobbly clay, 15 to 30 percent slopes--5 percent

Component Description

Fivesprings and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, antelope bitterbrush, basin wildrye, mountain big sagebrush

Typical profile:
Surface rock fragments: About 25 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Rubble land
Landform: Shoulders of mountains, backslopes of mountains
Slope: 5 to 30 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Component Description

Devada and similar soils
Landform: Backslopes of mountains, shoulders of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, bluegrass, low sagebrush, bluebunch wheatgrass

Typical profile:
Layer 1--0 to 4 inches; very cobbly loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Tunnison very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, littleleaf horsebrush, bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, big sagebrush, western wheatgrass
Ecological site: R023XF093CA--Shallow clay 9-16

Longcreek very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Shoulders of mountains, backslopes of mountains
Typical vegetation: Basin wildrye, mountain big sagebrush, Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Brubeck very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Rubber rabbitbrush, western wheatgrass, big sagebrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
“Engineering” section
“Soil Properties” section

202--Fivesprings-Sumine association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,000 to 6,000
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fivesprings very stony loam, 15 to 30 percent slopes--50 percent
Sumine very stony loam, 30 to 50 percent slopes--35 percent
Devada very cobbly loam, 30 to 50 percent slopes--8 percent

Glean very gravelly loam, 15 to 50 percent slopes--7 percent

Component Description

Fivesprings and similar soils
Landform: Mountains
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, antelope bitterbrush, mountain big sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Sumine and similar soils
Landform: Mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass, antelope bitterbrush, Idaho fescue, basin wildrye

Typical profile:
Surface rock fragments: About 5 percent cobbles, 15 percent stones
Layer 1--0 to 10 inches; very stony loam
Layer 2--10 to 34 inches; very cobbly clay loam
Layer 3--34 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very cobbly loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Idaho fescue, low sagebrush, bluebunch wheatgrass, bluegrass, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Glean very gravelly loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, antelope bitterbrush, needlegrass
Ecological site: R021XE176CA--Loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

203--Fluvents-Riverwash complex, 0 to 1 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain

Elevation: 4,000 to 4,100
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Fluvents stratified very fine sandy loam, 0 to 1 percent slopes--70 percent
Riverwash extremely gravelly coarse sand, 0 to 1 percent slopes--20 percent
Fortsage silt loam, 0 to 1 percent slopes--5 percent
Lakeview loam, 0 to 1 percent slopes--5 percent

Component Description

Fluvents and similar soils
Landform: Flood plains
Slope: 0 to 1 percent
Parent material: Stratified alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 4 inches; stratified very fine sandy loam
Layer 2--4 to 60 inches; stratified coarse sand to loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderate
Available water capacity: About 5 inches
Present flooding: Frequent
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Component Description

Riverwash
Landform: Channel
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Very high
Water table: Present

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fortsage silt loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Lakeview loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Livestock grazing, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

204--Fordney loamy sand, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 5,200 to 5,600
Precipitation: 12 to 14 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Fordney loamy sand, 0 to 2 percent slopes--80 percent
Fordney loamy sand, 2 to 4 percent slopes--5 percent
Truax sandy loam, 0 to 2 percent slopes--5 percent
Incy fine sand, 0 to 2 percent slopes--5 percent
Beckwourth loamy sand, 0 to 2 percent slopes--5 percent

Component Description

Fordney and similar soils
Landform: Fan remnants
Slope: 2 to 4 percent
Parent material: Lacustrine deposits derived from tuff
Typical vegetation: Beardless wildrye, Idaho fescue, antelope bitterbrush, needleandthread, mountain big sagebrush

Typical profile:
Layer 1--0 to 10 inches; loamy sand
Layer 2--10 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 4e-1

Nonirrigated land capability: 6e
Ecological site: R021XE180CA--Sandy loam fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fordney loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Basin big sagebrush, rabbitbrush, inland saltgrass, basin wildrye, black greasewood
Ecological site: R023XG059CA--Saline-sodic loam 6-12

Truax sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Thurber needlegrass, basin big sagebrush, basin wildrye, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Ecological site: R021XE186CA--Loamy terrace 12-16

Incy fine sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Dunes
Typical vegetation: Western wheatgrass, Wyoming big sagebrush, needleandthread, sand dropseed, arrowleaf balsamroot, Indian ricegrass, antelope bitterbrush
Ecological site: R026XF022CA--Granitic sand 9-12

Beckwourth loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

205--Fordney loamy fine sand, 0 to 5 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,100 to 4,120
Precipitation: 10 to 12 inches
Air temperature: 47 to 49 degrees Fahrenheit
Frost-free period: 100 to 120 days

Composition

Fordney loamy fine sand, 0 to 5 percent slopes--80 percent
Calpine sandy loam, 0 to 5 percent slopes--10 percent
Fordney loamy fine sand, slightly saline, 0 to 5 percent slopes--5 percent

Component Description

Fordney and similar soils
Landform: Fan remnants
Slope: 0 to 5 percent
Parent material: Lacustrine deposits derived from tuff
Typical vegetation: Mountain big sagebrush, beardless wildrye, Indian ricegrass, antelope bitterbrush, needleandthread

Typical profile:
Layer 1--0 to 10 inches; loamy fine sand
Layer 2--10 to 62 inches; loamy fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 6e
Ecological site: R021XE181CA--Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calpine and similar soils
Composition: 0 to 10 percent
Slope: 0 to 5 percent
Landform: Alluvial fans
Typical vegetation: Beardless wildrye, Indian ricegrass, mountain big sagebrush, western needlegrass, antelope bitterbrush, needleandthread
Ecological site: R021XE181CA--Granitic fan 12-16

Fordney loamy fine sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Fan remnants
Typical vegetation: Inland saltgrass, black greasewood, basin big sagebrush, rabbitbrush, basin wildrye
Ecological site: R023XG059CA--Saline-sodic loam 6-12

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

206--Fordney loamy fine sand, wet, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,050 to 4,100
Precipitation: 10 to 12 inches
Air temperature: 47 to 49 degrees Fahrenheit
Frost-free period: 100 to 120 days

Composition

Fordney loamy fine sand wet, 0 to 2 percent slopes--80 percent
Orr sandy loam, 0 to 2 percent slopes--8 percent
Calpine sandy loam, 0 to 2 percent slopes--8 percent
Fordney loamy fine sand, 2 to 4 percent slopes--4 percent

Component Description

Fordney and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Lacustrine deposits derived from tuff

Typical profile:
Layer 1--0 to 12 inches; loamy fine sand
Layer 2--12 to 62 inches; loamy fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Water table: Present
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-2
Nonirrigated land capability: 6e-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Orr sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, antelope bitterbrush, Anderson peachbrush, Indian ricegrass, yellow rabbitbrush, Wyoming big sagebrush, beardless wildrye
Ecological site: None assigned

Calpine and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Antelope bitterbrush, needleandthread, Indian ricegrass, mountain big sagebrush, western needlegrass, beardless wildrye
Ecological site: None assigned

Fordney loamy fine sand and similar soils
Composition: 0 to 4 percent
Slope: 2 to 4 percent
Landform: Fan remnants
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section

"Engineering" section
"Soil Properties" section

207--Forgay very gravelly sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Fan piedmont
Elevation: 4,500 to 4,520
Precipitation: 30 to 40 inches
Air temperature: 44 to 48 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Forgay extremely gravelly sandy loam, 0 to 2 percent slopes--85 percent
Mountmed clay loam, 0 to 2 percent slopes--8 percent
Urban land, 0 to 2 percent slopes--7 percent

Component Description

Forgay and similar soils
Landform: Alluvial fans
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine; Forest understory--other perennial grasses, greenleaf manzanita, lobbian ceanothus
Site index: Jeffrey pine--100 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 11 inches; extremely gravelly sandy loam
Layer 2--11 to 40 inches; extremely gravelly coarse sandy loam
Layer 3--40 to 60 inches; stratified extremely gravelly loamy coarse sand to very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 2 inches
Present flooding: None
Water table: Present
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mountmed clay loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Urban land
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

208--Forgay extremely gravelly sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Fan piedmont
Elevation: 4,360 to 4,560
Precipitation: 30 to 40 inches
Air temperature: 44 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Forgay extremely gravelly sandy loam, 0 to 2 percent slopes--80 percent
Urban land, 0 to 2 percent slopes--5 percent
Forgay extremely gravelly sandy loam, 0 to 2 percent slopes, very stony--5 percent
Riverwash extremely gravelly coarse sand, 0 to 2 percent slopes--5 percent
Fluvents stratified very fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Forgay and similar soils
Landform: Alluvial fans

Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--greenleaf manzanita, whitethorn ceanothus, other perennial grasses
Site index: Jeffrey pine--75 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 49

Typical profile:
Layer 1--0 to 11 inches; extremely gravelly sandy loam
Layer 2--11 to 40 inches; extremely gravelly coarse sandy loam
Layer 3--40 to 60 inches; stratified extremely gravelly loamy coarse sand to very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Urban land
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Forgay and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--other perennial grasses, whitethorn ceanothus, greenleaf manzanita
Ecological site: None assigned

Riverwash extremely gravelly coarse sand
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Channels
Ecological site: None assigned

Fluvents and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Timber production, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

209--Fortsage fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Alluvial plain
Elevation: 4,320 to 4,330
Precipitation: 9 to 12 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Fortsage fine sandy loam, 0 to 2 percent slopes--90 percent
Truckee loam, 0 to 2 percent slopes--10 percent

Component Description

Fortsage and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 10 inches; fine sandy loam
Layer 2--10 to 60 inches; stratified fine sandy loam to silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 8 inches
Present flooding: Rare

Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 2e-1
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Truckee loam and similar soils
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

210--Fortsage silt loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Alluvial plain
Elevation: 4,320 to 4,340
Precipitation: 9 to 12 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Fortsage silt loam, 0 to 2 percent slopes--90 percent
Riverwash extremely gravelly coarse sand, 0 to 2 percent slopes--10 percent

Component Description

Fortsage and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 2 inches; silt loam
Layer 2--2 to 60 inches; stratified fine sandy loam to silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 8 inches
Present flooding: Frequent
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Nonirrigated land capability: 6w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Riverwash extremely gravelly coarse sand
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Channels
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

211--Fraval-Fredonyer-Said association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,600 to 5,800
Precipitation: 16 to 20 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Fraval very gravelly loam, 9 to 30 percent slopes--40 percent
Fredonyer very stony loam, 9 to 30 percent slopes--25 percent
Said gravelly loam, 9 to 30 percent slopes--20 percent
Keddie loam, 0 to 1 percent slopes--3 percent
Rubble land, 15 to 30 percent slopes--2 percent

Rock outcrop, 15 to 30 percent slopes--2 percent
Searles very stony loam, 15 to 30 percent slopes--2 percent
Petescreek gravelly loam, 15 to 30 percent slopes--2 percent
Ninemile very stony loam, 5 to 15 percent slopes--2 percent
Orhood very stony sandy loam, 15 to 30 percent slopes--2 percent

Component Description

Fraval and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from tuff and andesite and residuum weathered from andesite or tuff
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--Columbia needlegrass, bottlebrush squirreltail, Idaho fescue, curlleaf mountain mahogany, sedge, mountain big sagebrush
Site index: Jeffrey pine--73 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 44

Typical profile:
Layer 1--0 to 14 inches; very gravelly loam
Layer 2--14 to 34 inches; very gravelly loam
Layer 3--34 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Component Description

Fredonyer and similar soils
Landform: Ridges
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, curlleaf mountain mahogany, Idaho fescue

Typical profile:
Surface rock fragments: About 5 percent cobbles, 12 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE178CA--Very stony loam 12-16

Component Description

Said and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--whitethorn ceanothus, squawcarpet, mountain big sagebrush, manzanita, snowberry, Columbia needlegrass, Idaho fescue
Site index: Jeffrey pine--83 at an age base of 100 years
Site index: White fir--53 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 49

Typical profile:
Layer 1--0 to 13 inches; gravelly loam
Layer 2--13 to 26 inches; gravelly loam
Layer 3--26 to 37 inches; very gravelly clay loam
Layer 4--37 to 56 inches; very cobbly clay loam
Layer 5--56 to 66 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches

Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Keddie loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 1 percent
Landform: Alluvial fans
Ecological site: None assigned

Rubble land
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Searles very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Petescreek gravelly loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, needlegrass, mountain big sagebrush
Ecological site: R021XE176CA--Loam 12-16

Ninemile very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 15 percent
Landform: Plateaus
Typical vegetation: Bluegrass, bluebunch wheatgrass, low sagebrush, balsamroot, Idaho fescue, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass
Ecological site: R021XE173CA

Orhood very stony sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--arrowleaf balsamroot, Sandberg bluegrass, antelope bitterbrush, Idaho fescue, Lemmon needlegrass, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

212--Fraval-Said complex, 5 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,600 to 6,500
Precipitation: 16 to 20 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Fraval very gravelly loam, 5 to 30 percent slopes--60 percent
Said gravelly loam, 5 to 30 percent slopes--30 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Fredonyer very stony loam, 5 to 30 percent slopes--3 percent
Ninemile very stony loam, 5 to 15 percent slopes--2 percent

Component Description

Fraval and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent

Parent material: Colluvium derived from tuff and andesite and residuum weathered from andesite or tuff
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--Columbia needlegrass, curlleaf mountain mahogany, Idaho fescue, bottlebrush squirreltail, sedge, mountain big sagebrush
Site index: Jeffrey pine--73 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 44

Typical profile:
Layer 1--0 to 14 inches; very gravelly loam
Layer 2--14 to 34 inches; very gravelly loam
Layer 3--34 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Component Description

Said and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--mountain big sagebrush, manzanita, whitethorn ceanothus, squawcarpet, Idaho fescue, Columbia needlegrass, snowberry
Site index: Jeffrey pine--83 at an age base of 100 years
Site index: White fir--53 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 49

Typical profile:
Layer 1--0 to 13 inches; gravelly loam
Layer 2--13 to 27 inches; gravelly loam
Layer 3--27 to 38 inches; very gravelly clay loam
Layer 4--38 to 57 inches; very cobbly clay loam
Layer 5--57 to 67 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Fredonyer very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 5 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush
Ecological site: R021XE178CA--Very stony loam 12-16

Ninemile very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 15 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, balsamroot, bottlebrush squirreltail, antelope bitterbrush, bluegrass, bluebunch wheatgrass, Idaho fescue, low sagebrush
Ecological site: R021XE173CA

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

213--Fredonyer-Whitinger-Orhood association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,800 to 6,400
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Fredonyer very stony loam, 30 to 50 percent slopes--45 percent
Whitinger very stony loam, 30 to 50 percent slopes--25 percent
Orhood very stony loam, 30 to 50 percent slopes--15 percent
Badenaugh stony sandy loam, 30 to 50 percent slopes--3 percent
Rubble land, 30 to 50 percent slopes--2 percent
Rock outcrop, 30 to 50 percent slopes--2 percent
Searles very stony loam, 30 to 50 percent slopes--2 percent
Petescreek very gravelly loam, 15 to 30 percent slopes--2 percent
Hapgood stony loam, 15 to 30 percent slopes--2 percent
Fiddler very stony loam, 30 to 50 percent slopes--2 percent

Component Description

Fredonyer and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Curlleaf mountain mahogany, Idaho fescue, mountain big sagebrush

Typical profile:
Surface rock fragments: About 10 percent cobbles, 5 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 32 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE178CA--Very stony loam 12-16

Component Description

Whitinger and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from basalt and residuum weathered from basalt
Typical vegetation: Forest canopy--western juniper, Forest understory--needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Site index: Western juniper--25 at an age base of 50 years

Typical profile:
Surface rock fragments: About 20 percent cobbles, 12 percent stones
Layer 1--0 to 6 inches; very stony loam
Layer 2--6 to 15 inches; very stony clay loam
Layer 3--15 to 26 inches; very cobbly clay loam
Layer 4--26 to 36 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Orhood and similar soils
Landform: Ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, arrowleaf balsamroot, Idaho fescue, Lemmon needlegrass, rabbitbrush, Thurber needlegrass, antelope bitterbrush, Sandberg bluegrass, mountain big sagebrush

Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Badenaugh stony sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, big sagebrush, green ephedra, antelope bitterbrush, needlegrass, Anderson peachbrush
Ecological site: R026XF052CA--Granitic upland 9-12

Rubble land
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Searles very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, antelope bitterbrush, mountain big sagebrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Petescreek very gravelly loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush
Ecological site: R021XE176CA--Loam 12-16

Hapgood stony loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass, antelope bitterbrush, lupine, arrowleaf balsamroot, basin wildrye, Idaho fescue
Ecological site: R021XE044CA

Fiddler very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--rabbitbrush, bluebunch wheatgrass, Nevada bluegrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, arrowleaf balsamroot, Thurber needlegrass, bottlebrush squirreltail, Sandberg bluegrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing, juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

214--Fulstone-Wylo association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmonts
Elevation: 4,600 to 5,000
Precipitation: 8 to 10 inches

Air temperature: 47 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Fulstone very cobbly loam, 2 to 9 percent slopes--70 percent
Wylo very stony loam, 9 to 30 percent slopes--20 percent
Longcreek very cobbly loam, 9 to 30 percent slopes--3 percent
Loomis very cobbly loam, 9 to 30 percent slopes--3 percent
Rock outcrop, 15 to 30 percent slopes--2 percent
Brubeck very cobbly clay, 15 to 30 percent slopes--2 percent

Component Description

Fulstone and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Lahontan sagebrush, bluebunch wheatgrass, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles
Layer 1--0 to 2 inches; very cobbly loam
Layer 2--2 to 14 inches; gravelly clay
Layer 3--14 to 60 inches; indurated

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF083CA--Shallow stony clay loam 9-12

Component Description

Wylo and similar soils
Landform: Backslopes of plateaus, summits of plateaus
Slope: 9 to 30 percent
Parent material: Colluvium derived from basalt and residuum weathered from basalt
Typical vegetation: Lahontan sagebrush, bluebunch wheatgrass, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 15 percent stones
Layer 1--0 to 7 inches; very stony loam
Layer 2--7 to 11 inches; gravelly clay loam
Layer 3--11 to 15 inches; cobbly clay
Layer 4--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF083CA--Shallow stony clay loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Longcreek very cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, basin wildrye, mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush
Ecological site: R023XF082CA--Stony loam 9-12

Loomis very cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, black sagebrush, Sandberg bluegrass, bottlebrush squirreltail
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Brubeck very cobbly clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, big sagebrush
Ecological site: R023XF084CA--Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

215--Galeppi sandy loam, 2 to 5 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,000 to 4,300
Precipitation: 9 to 12 inches
Air temperature: 48 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Galeppi sandy loam, 2 to 5 percent slopes--80 percent
Springmeyer loam, 2 to 5 percent slopes--5 percent
Mottsville gravelly loamy coarse sand, 2 to 5 percent slopes--5 percent
Modoc sandy loam, 2 to 5 percent slopes--5 percent
Calpine sandy loam, 2 to 5 percent slopes--5 percent

Component Description

Galeppi and similar soils
Landform: Fan remnants
Slope: 2 to 5 percent
Parent material: Alluvium derived from granite
Typical vegetation: Indian ricegrass, Wyoming big sagebrush, rubber rabbitbrush, beardless wildrye, Anderson peachbrush, needleandthread, antelope bitterbrush

Typical profile:
Layer 1--0 to 18 inches; sandy loam
Layer 2--18 to 36 inches; sandy clay loam
Layer 3--36 to 52 inches; sandy loam
Layer 4--52 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2e-1
Nonirrigated land capability: 6e
Ecological site: R026XF051CA--Granitic fan 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Springmeyer loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fans remnants
Typical vegetation: Basin wildrye, Thurber needlegrass, needleandthread, big sagebrush
Ecological site: R023XF091CA--Loamy upland 9-12

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Bottlebrush squirreltail, basin big sagebrush, desert needlegrass, desert peach, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R026XF051CA--Granitic fan 9-12

Modoc and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, basin big sagebrush, Idaho fescue, basin wildrye
Ecological site: R021XE186CA--Loamy terrace 12-16

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Alluvial fans
Typical vegetation: Needleandthread, antelope bitterbrush, Indian ricegrass, beardless wildrye, western needlegrass, mountain big sagebrush
Ecological site: R021XE181CA--Granitic fan 12-16

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat, and urban development

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:

"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

216--Galeppi sandy loam, 5 to 30 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,400 to 4,800
Precipitation: 9 to 12 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Galeppi sandy loam, 5 to 30 percent slopes--80 percent
Indiano gravelly sandy loam, 5 to 30 percent slopes--5 percent
Glenbrook gravelly loamy coarse sand, 5 to 30 percent slopes--5 percent
Barnard stony sandy loam, 5 to 15 percent slopes--5 percent
Calpine sandy loam, 5 to 15 percent slopes--5 percent

Component Description

Galeppi and similar soils
Landform: Fan remnants
Slope: 5 to 30 percent
Parent material: Alluvium derived from granite
Typical vegetation: Wyoming big sagebrush, needlegrass, bluebunch wheatgrass, green ephedra, Anderson peachbrush, antelope bitterbrush

Typical profile:
Layer 1--0 to 18 inches; sandy loam
Layer 2--18 to 36 inches; sandy clay loam
Layer 3--36 to 52 inches; sandy loam
Layer 4--52 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 6e
Ecological site: R026XF052CA--Granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Indiano gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent, south aspect
Landform: Backslopes of hills
Typical vegetation: Thurber needlegrass, bottlebrush squirreltail, antelope bitterbrush, other perennial grasses, other perennial forbs, Sandberg bluegrass, Indian ricegrass, Wyoming big sagebrush, other shrubs, basin wildrye
Ecological site: R026XF052CA--Granitic upland 9-12

Glenbrook and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Yellow rabbitbrush, green ephedra, other perennial forbs, other perennial grasses, antelope bitterbrush, bottlebrush squirreltail, desert needlegrass, Thurber needlegrass, big sagebrush, other shrubs
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Barnard stony sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass
Ecological site: R023XF082CA--Stony loam 9-12

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Alluvial fans
Typical vegetation: Mountain big sagebrush, beardless wildrye, western needlegrass, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R021XE181CA--Granitic fan 12-16

Management

Major uses: Livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

217--Galeppi-Glenbrook complex, 5 to 15 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,400 to 4,500
Precipitation: 10 to 15 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 110 days

Composition

Galeppi loamy sand, 5 to 15 percent slopes--65 percent
Glenbrook sand, 5 to 15 percent slopes--15 percent
Calpine sandy loam, 5 to 15 percent slopes--8 percent
Rock outcrop, 9 to 15 percent slopes--6 percent
Mottsville gravelly loamy coarse sand, 5 to 15 percent slopes--6 percent

Component Description

Galeppi and similar soils
Landform: Fan remnants
Slope: 5 to 15 percent
Parent material: Alluvium derived from granite
Typical vegetation: Antelope bitterbrush, Anderson peachbrush, green ephedra, Wyoming big sagebrush, needlegrass, bluebunch wheatgrass

Typical profile:
Layer 1--0 to 18 inches; loamy sand
Layer 2--18 to 36 inches; sandy clay loam
Layer 3--36 to 52 inches; sandy loam
Layer 4--52 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 6s
Ecological site: R026XF052CA

Component Description

Glenbrook and similar soils
Landform: Hill
Slope: 5 to 15 percent
Parent material: Residuum weathered from granite
Typical vegetation: Bottlebrush squirreltail, other perennial grasses, yellow rabbitbrush, Thurber needlegrass, antelope bitterbrush, desert needlegrass, green ephedra, other shrubs, big sagebrush, other perennial forbs

Typical profile:
Layer 1--0 to 3 inches; sand
Layer 2--3 to 12 inches; gravelly sand
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.7 inch
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 6s
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calpine and similar soils
Composition: 0 to 8 percent
Slope: 5 to 15 percent
Landform: Alluvial fans
Typical vegetation: Western needlegrass, mountain big sagebrush, beardless wildrye, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R021XE181CA--Granitic fan 12-16

Rock outcrop
Composition: 0 to 6 percent

Slope: 9 to 15 percent
Landform: Rock pediments
Ecological site: None assigned

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 6 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail, Indian ricegrass, antelope bitterbrush
Ecological site: R026XF051CA--Granitic fan 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

218--Gavel stony loam, 5 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,800 to 5,400
Precipitation: 16 to 20 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Gavel gravelly loam, 5 to 30 percent slopes--85 percent
Devada very cobbly loam, 15 to 30 percent slopes--8 percent
Searles very stony loam, 15 to 30 percent slopes--7 percent

Component Description

Gavel and similar soils
Landform: Mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--mountain big sagebrush, bottlebrush squirreltail, Idaho fescue, sedge, curlleaf mountain mahogany, Columbia needlegrass
Site index: Jeffrey pine--71 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 50

Typical profile:
Surface rock fragments: About 10 percent cobbles, 3 percent stones
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 26 inches; very gravelly loam
Layer 3--26 to 70 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very cobbly loam and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Thurber needlegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass, antelope bitterbrush, bluegrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Searles very stony loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section

"Forest land" section
"Engineering" section
"Soil Properties" section

219--Gavel-Devada complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,600 to 5,800
Precipitation: 20 to 25 inches
Air temperature: 45 to 46 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Gavel very cobbly sandy loam, 30 to 50 percent slopes--55 percent
Devada very cobbly loam, 30 to 50 percent slopes--35 percent
Devada very cobbly loam, 50 to 70 percent slopes--10 percent

Component Description

Gavel and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, western juniper; Forest understory--Idaho fescue, bottlebrush squirreltail, Columbia needlegrass, mountain big sagebrush, curlleaf mountain mahogany, sedge
Site index: Jeffrey pine--71 at an age base of 100 years

Typical profile:
Surface rock fragments: About 5 percent cobbles, 20 percent stones
Layer 1--0 to 12 inches; very cobbly sandy loam
Layer 2--12 to 27 inches; very gravelly loam
Layer 3--27 to 37 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Devada and similar soils
Landform: Ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Thurber needlegrass, antelope bitterbrush, bluegrass, bluebunch wheatgrass, low sagebrush, Idaho fescue

Typical profile:
Surface rock fragments: About 25 percent cobbles, 10 percent stones
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE173CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very cobbly loam and similar soils
Composition: 0 to 10 percent
Slope: 50 to 70 percent
Landform: Ridges
Typical vegetation: Thurber needlegrass, antelope bitterbrush, bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Management

Major uses: Timber production, livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

220--Gerlach silty clay, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Basin
Elevation: 4,400 to 4,600
Precipitation: 9 to 12 inches
Air temperature: 45 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Gerlach silty clay, 2 to 9 percent slopes--80 percent
Devada very stony loam, 2 to 9 percent slopes--5 percent
Cleghorn sandy loam, 2 to 5 percent slopes--5 percent
Ravendale silty clay, 0 to 2 percent slopes--4 percent
Longcreek very cobbly loam, 2 to 9 percent slopes--4 percent
Termo silty clay, 0 to 2 percent slopes--2 percent

Component Description

Gerlach silty clay and similar soils
Landform: Alluvial flats
Slope: 2 to 9 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, big sagebrush, littleleaf horsebrush, western wheatgrass, Thurber needlegrass

Typical profile:
Layer 1--0 to 3 inches; silty clay
Layer 2--3 to 52 inches; silty clay
Layer 3--52 to 60 inches; clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 9 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-3
Nonirrigated land capability: 6e
Ecological site: R023XF084CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, bluegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Cleghorn sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan terraces
Typical vegetation: Thurber needlegrass, needleandthread, Wyoming big sagebrush, basin wildrye
Ecological site: R023XF091CA

Ravendale silty clay and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Nevada bluegrass, beardless wildrye, silver sagebrush, western wheatgrass
Ecological site: R023XF092CA--Clay floodplain 9-16

Longcreek very cobbly loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, basin wildrye, antelope bitterbrush, Thurber needlegrass, mountain big sagebrush
Ecological site: R023XF082CA--Stony loam 9-12

Termo silty clay and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, rubber rabbitbrush, basin wildrye, big sagebrush, spiny hopsage, Sandberg bluegrass, black greasewood, bottlebrush squirreltail
Ecological site: R023XF089CA--Sodic flat 9-12

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section

"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

221--Gerlach cobbly silty clay, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Basin
Elevation: 4,500 to 4,700
Precipitation: 9 to 12 inches
Air temperature: 45 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Gerlach cobbly silty clay, 2 to 9 percent slopes--80 percent
Ravendale silty clay, 0 to 2 percent slopes--5 percent
Longcreek very cobbly loam, 2 to 9 percent slopes--5 percent
Devada very stony loam, 2 to 9 percent slopes--5 percent
Cleghorn sandy loam, 2 to 5 percent slopes--5 percent

Component Description

Gerlach and similar soils
Landform: Alluvial flats
Slope: 2 to 9 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, big sagebrush, western wheatgrass

Typical profile:
Layer 1--0 to 3 inches; cobbly silty clay
Layer 2--3 to 52 inches; silty clay
Layer 3--52 to 60 inches; clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 9 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R023XF084CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ravendale silty clay and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Beardless wildrye, western wheatgrass, silver sagebrush, Nevada bluegrass
Ecological site: R023XF092CA

Longcreek very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush
Ecological site: R023XF082CA--Stony loam 9-12

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Bluegrass, Thurber needlegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Cleghorn sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Wyoming big sagebrush, basin wildrye, needleandthread, Thurber needlegrass
Ecological site: R023XF091CA--Loamy upland 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

222--Gerlach-Ravendale complex, 0 to 4 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Basin
Elevation: 4,400 to 5,400
Precipitation: 9 to 12 inches
Air temperature: 45 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Gerlach silty clay, 2 to 4 percent slopes--45 percent
Ravendale silty clay, 0 to 2 percent slopes--40 percent
Corral sandy loam, 0 to 5 percent slopes--8 percent
Termo silty clay, 0 to 2 percent slopes--7 percent

Component Description

Gerlach and similar soils
Landform: Alluvial flats
Slope: 2 to 4 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Big sagebrush, bottlebrush squirreltail, black greasewood, spiny hopsage, saltbush

Typical profile:
Layer 1--0 to 3 inches; silty clay
Layer 2--3 to 52 inches; silty clay
Layer 3--52 to 60 inches; clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 9 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 4w-2
Nonirrigated land capability: 6w
Ecological site: R023XF085CA

Component Description

Ravendale and similar soils
Landform: Basin floors
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Nevada bluegrass, western wheatgrass, silver sagebrush, beardless wildrye

Typical profile:
Layer 1--0 to 16 inches; silty clay
Layer 2--16 to 48 inches; silty clay
Layer 3--48 to 60 inches; silty clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 9 inches
Present flooding: Occasional
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 4w-2
Nonirrigated land capability: 6w
Ecological site: R023XF092CA--Clay floodplain 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Corral sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 5 percent
Landform: Rock pediments
Typical vegetation: Thurber needlegrass, basin wildrye, big sagebrush, needleandthread
Ecological site: R023XF091CA--Loamy upland 9-12

Termo silty clay and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Black greasewood, big sagebrush, shadscale, bottlebrush squirreltail, Sandberg bluegrass, spiny hopsage, basin wildrye, rubber rabbitbrush
Ecological site: R023XF089CA--Sodic flat 9-12

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

223--Gerle sandy loam, 2 to 5 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Alluvial plain
Elevation: 5,120 to 5,160
Precipitation: 25 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Gerle gravelly sandy loam, 2 to 4 percent slopes--90 percent
Gerle gravelly sandy loam, 2 to 5 percent slopes, very stony--5 percent

Gerle gravelly sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Gerle and similar soils
Landform: Outwash plains
Slope: 2 to 4 percent
Parent material: Outwash derived from granite
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--currant, chinkapin, whitethorn ceanothus, western brackenfern, huckleberry oak
Site index: Jeffrey pine--105 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 13 inches; gravelly sandy loam
Layer 2--13 to 72 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Gerle gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Outwash plains
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--chinkapin, whitethorn ceanothus, western brackenfern, huckleberry oak, currant
Ecological site: None assigned

Gerle and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Outwash plains
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--currant, western brackenfern, whitethorn ceanothus, chinkapin, huckleberry oak
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing, wildlife habitat, recreation
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

224--Gerle sandy loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,300 to 6,300
Precipitation: 25 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Gerle sandy loam, 30 to 50 percent slopes--85 percent
Gerle sandy loam, 30 to 50 percent slopes, extremely bouldery--5 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Mottsville gravelly loamy coarse sand, 30 to 50 percent slopes--5 percent

Component Description

Gerle and similar soils
Landform: Backslopes of moraines
Slope: 30 to 50 percent, north aspect
Parent material: Outwash derived from granite
Typical vegetation: Forest canopy--white fir, Forest understory--western brackenfern, chinkapin, whitethorn ceanothus, huckleberry oak, currant
Site index: White fir--66 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 18 inches; sandy loam
Layer 2--18 to 46 inches; sandy loam
Layer 3--46 to 60 inches; gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick

Runoff: Medium
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Gerle and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of moraines
Typical vegetation: Forest canopy--white fir, Forest understory--currant, huckleberry oak, western brackenfern, whitethorn ceanothus, chinkapin
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Fan remnants
Typical vegetation: Indian ricegrass, desert peach, antelope bitterbrush, needleandthread, bottlebrush squirreltail, basin big sagebrush, desert needlegrass
Ecological site: R026XF051CA--Granitic fan 9-12

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

225--Gerle complex, 30 to 70 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 6,000 to 7,200
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Gerle very bouldery sandy loam, 50 to 70 percent slopes--50 percent
Gerle sandy loam, 50 to 70 percent slopes--25 percent
Gerle sandy loam, 30 to 50 percent slopes--15 percent
Rock outcrop, 50 to 70 percent slopes--10 percent

Component Description

Gerle and similar soils
Landform: Backslopes of moraines
Slope: 50 to 70 percent, north aspect
Parent material: Outwash derived from granite
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus, other perennial grasses, needlegrass
Site index: White fir--77 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Surface rock fragments: About 40 percent boulders
Layer 1--0 to 13 inches; very bouldery sandy loam
Layer 2--13 to 46 inches; coarse sandy loam
Layer 3--46 to 60 inches; cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Gerle and similar soils
Landform: Backslopes of moraines
Slope: 50 to 70 percent, north aspect
Parent material: Outwash derived from granite
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--western brackenfern, currant, huckleberry oak, whitethorn ceanothus, chinkapin
Site index: California red fir--51 at an age base of 50 years

Site index: White fir--66 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 13 inches; sandy loam
Layer 2--13 to 46 inches; sandy loam
Layer 3--46 to 60 inches; cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Gerle and similar soils
Landform: Backslopes of moraines
Slope: 30 to 50 percent, north aspect
Parent material: Outwash derived from granite
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--chinkapin, whitethorn ceanothus, western brackenfern, huckleberry oak, currant
Site index: California red fir--51 at an age base of 50 years
Site index: White fir--66 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 68

Typical profile:
Layer 1--0 to 13 inches; sandy loam
Layer 2--13 to 46 inches; sandy loam
Layer 3--46 to 60 inches; cobbly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 10 percent
Slope: 50 to 70 percent
Landform: Ridges
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

226--Glean very gravelly sandy loam, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,800 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Glean very gravelly sandy loam, 5 to 30 percent slopes--90 percent
Sumine very stony loam, 9 to 30 percent slopes--5 percent
Madeline very stony loam, 9 to 30 percent slopes--5 percent

Component Description

Glean and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, needlegrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 2 percent stones
Layer 1--0 to 14 inches; very gravelly sandy loam
Layer 2--14 to 44 inches; very gravelly sandy loam
Layer 3--44 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Sumine very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent, north aspect
Landform: Mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, Idaho fescue, basin wildrye, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Antelope bitterbrush, Thurber needlegrass, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

227--Glean very gravelly sandy loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain, mountains, plateau
Elevation: 5,800 to 7,000
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Glean very gravelly sandy loam, 30 to 50 percent slopes--85 percent
Madeline very stony loam, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--3 percent
Fivesprings very stony loam, 30 to 50 percent slopes--3 percent
Aquolls gravelly sandy loam, 2 to 5 percent slopes--2 percent
Anawalt very stony loam, 30 to 50 percent slopes--2 percent

Component Description

Glean and similar soils
Landform: Mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock
Typical vegetation: Antelope bitterbrush, needlegrass, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 2 percent stones
Layer 1--0 to 14 inches; very gravelly sandy loam
Layer 2--14 to 44 inches; very gravelly sandy loam
Layer 3--44 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent

Landform: Toeslopes of mountains
Typical vegetation: Bluebunch wheatgrass, antelope bitterbrush, mountain big sagebrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Fivesprings very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent, south aspect
Landform: Mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Aquolls gravelly sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent
Landform: Lakeshores
Ecological site: None assigned

Anawalt very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Summits of plateaus, backslopes of plateaus
Typical vegetation: Idaho fescue, Thurber needlegrass, antelope bitterbrush, Sandberg bluegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R021XE173CA

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

228--Glean-Searles association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,600 to 7,000
Precipitation: 10 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Glean very stony loam, 30 to 50 percent slopes--55 percent
Searles very stony loam, 30 to 50 percent slopes--30 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Petescreek stony loam, 30 to 50 percent slopes--5 percent
Indiano gravelly sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Glean and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, needlegrass, Idaho fescue, antelope bitterbrush

Typical profile:
Surface rock fragments: About 20 percent cobbles, 20 percent stones
Layer 1--0 to 14 inches; very stony loam
Layer 2--14 to 44 inches; very gravelly loam
Layer 3--44 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA

Component Description

Searles and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, mountain big sagebrush, antelope bitterbrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 20 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE179CA--Warm stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Petescreek stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, antelope bitterbrush, needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Indiano gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Summits of plateaus
Typical vegetation: Bluebunch wheatgrass, big sagebrush, basin wildrye, green ephedra, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE176CA--Loam 12-16

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

229--Glenbrook-Graufels-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Mountains
Elevation: 5,500 to 6,500
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Glenbrook gravelly loamy coarse sand, 30 to 60 percent slopes--40 percent
Graufels bouldery sand, 30 to 60 percent slopes--30 percent
Rock outcrop unweathered bedrock, 30 to 60 percent slopes--15 percent
Haypress very bouldery loamy coarse sand, 30 to 50 percent slopes--5 percent
Sumine very stony loam, 30 to 50 percent slopes--5 percent
Hutchley very stony sandy loam, 15 to 30 percent slopes--5 percent

Component Description

Glenbrook and similar soils
Landform: Backslopes of mountains
Slope: 30 to 60 percent
Parent material: Residuum weathered from granite
Typical vegetation: Desert needlegrass, Thurber needlegrass, big sagebrush, yellow rabbitbrush, other shrubs, other perennial forbs, other perennial grasses, antelope bitterbrush, green ephedra, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 3 inches; gravelly loamy coarse sand
Layer 2--3 to 12 inches; coarse sand
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low

Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.7 inch
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Component Description

Graufels and similar soils
Landform: Backslopes of mountains
Slope: 30 to 60 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Antelope bitterbrush, needlegrass, Anderson peachbrush, bluebunch wheatgrass, Wyoming big sagebrush, green ephedra

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 14 inches; bouldery sand
Layer 2--14 to 22 inches; sand
Layer 3--22 to 26 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF052CA--Granitic upland 9-12

Component Description

Rock outcrop
Landform: Mountains
Slope: 30 to 60 percent

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Haypress very bouldery loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, antelope bitterbrush, Anderson peachbrush, green ephedra, big sagebrush, bluebunch wheatgrass
Ecological site: R026XF052CA--Granitic upland 9-12

Sumine very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, basin wildrye, bluebunch wheatgrass, mountain big sagebrush, Idaho fescue
Ecological site: R021XE179CA--Warm stony loam 12-16

Hutchley very stony sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Sandberg bluegrass, bottlebrush squirreltail, other perennial grasses, low sagebrush, arrowleaf balsamroot, longleaf hawksbeard, lupine, Nevada bluegrass, bluebunch wheatgrass, other perennial forbs, other shrubs
Ecological site: R021XE191CA--Mountain ridges 12-16

Management

Major uses: Livestock grazing, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

230--Graufels-Glenbrook complex, 5 to 30 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Mountains
Elevation: 5,000 to 6,000
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit

Frost-free period: 80 to 100 days

Composition

Graufels bouldery sand, 5 to 30 percent slopes--50 percent
Glenbrook sand, 5 to 30 percent slopes--35 percent
Galeppi sandy loam, 5 to 30 percent slopes--8 percent
Mottsville gravelly loamy coarse sand, 5 to 30 percent slopes--7 percent

Component Description

Graufels and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Green ephedra, Wyoming big sagebrush, Anderson peachbrush, antelope bitterbrush, needlegrass, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 10 percent boulders
Layer 1--0 to 14 inches; bouldery sand
Layer 2--14 to 22 inches; loamy sand
Layer 3--22 to 26 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 1.5 inches
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF052CA--Granitic upland 9-12

Component Description

Glenbrook and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Residuum weathered from granite
Typical vegetation: Big sagebrush, bottlebrush squirreltail, Thurber needlegrass, yellow rabbitbrush, green ephedra, other perennial forbs, other perennial grasses, desert needlegrass, other shrubs, antelope bitterbrush

Typical profile:
Layer 1--0 to 3 inches; sand
Layer 2--3 to 12 inches; gravelly sand
Layer 3--12 to 16 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Rapid
Available water capacity: About 0.7 inch
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Galeppi sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 5 to 30 percent
Landform: Fan remnants
Typical vegetation: Needlegrass, bluebunch wheatgrass, Wyoming big sagebrush, green ephedra, Anderson peachbrush, antelope bitterbrush
Ecological site: R026XF052CA--Granitic upland 9-12

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 7 percent
Slope: 5 to 30 percent
Landform: Fan remnants
Typical vegetation: Desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R026XF051CA

Management

Major uses: Livestock grazing, urban land
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section

"Soil Properties" section

231--Hagata-Playas complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,300 to 5,600
Precipitation: 12 to 14 inches
Air temperature: 44 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Hagata silt loam, 0 to 2 percent slopes--60 percent
Playas silty clay, 0 to 1 percent slopes--30 percent
Ravendale silty clay, 0 to 2 percent slopes--5 percent
Saddlerock silty clay, 0 to 2 percent slopes--3 percent
Truax sandy loam, 0 to 2 percent slopes--2 percent

Component Description

Hagata and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Lacustrine deposits over residuum weathered from tuff
Typical vegetation: Eriogonum, Idaho fescue, low sagebrush, bluegrass, Nevada bluegrass, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Layer 1--0 to 6 inches; silt loam
Layer 2--6 to 22 inches; silty clay
Layer 3--22 to 36 inches; weathered bedrock
Layer 4--36 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 20 to 30 inches
Permeability class (root zone): Very slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R021XE184CA--Shallow loam 12-16

Component Description

Playas
Landform: Playa
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ravendale silty clay, drained and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Western wheatgrass, beardless wildrye, Nevada bluegrass, basin big sagebrush, rubber rabbitbrush
Ecological site: R021XE189CA

Saddlerock silty clay, drained and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Basin big sagebrush, basin wildrye
Ecological site: R023XF088CA--Loamy bottom 9-16

Truax sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Thurber needlegrass, bottlebrush squirreltail, basin big sagebrush, basin wildrye, antelope bitterbrush, needleandthread
Ecological site: R021XE186CA

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

232--Hangtown very cobbly sandy loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22

Landscape: Mountains
Elevation: 6,000 to 7,470
Precipitation: 35 to 40 inches
Air temperature: 41 to 43 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Hangtown very cobbly sandy loam, 30 to 50 percent slopes--75 percent
Hangtown very cobbly sandy loam, 30 to 50 percent slopes, very bouldery--5 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Penstock very gravelly loam, 30 to 50 percent slopes--5 percent
Scaribou very gravelly loam, 30 to 50 percent slopes--5 percent
Deadwood very gravelly sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Hangtown and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--California red fir, Douglas fir, sugar pine, white fir; Forest understory--huckleberry oak, other perennial grasses, pinemat manzanita
Site index: White fir--50 at an age base of 50 years
Additional forest note: Dunning site class: III

Typical profile:
Surface rock fragments: About 25 percent cobbles, 10 percent stones
Layer 1--0 to 9 inches; very cobbly sandy loam
Layer 2--9 to 58 inches; very gravelly sandy loam
Layer 3--58 to 62 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hangtown and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California red fir, Douglas fir, sugar pine, white fir; Forest understory--other perennial grasses, pinemat manzanita, huckleberry oak
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Penstock stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--mountain brome, manzanita, sharpleaf snowberry, needlegrass, snowbrush ceanothus, whitethorn ceanothus
Ecological site: None assigned

Scaribou stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--manzanita, snowbrush ceanothus, sharpleaf snowberry, needlegrass, whitethorn ceanothus, mountain brome
Ecological site: None assigned

Deadwood very gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine, Forest understory--greenleaf manzanita, pinemat manzanita, California nutmeg
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

233--Hart Camp-Devada-Tunnison association, 2 to 15 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 5,600 to 5,900
Precipitation: 10 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 70 to 90 days

Composition

Hart Camp very stony loam, 9 to 15 percent slopes--40 percent
Devada very stony loam, 2 to 9 percent slopes--30 percent
Tunnison very cobbly clay, 2 to 9 percent slopes--15 percent
Bucklake very stony loam, 9 to 15 percent slopes--4 percent
Rock outcrop, 9 to 15 percent slopes--3 percent
Sumine cobbly loam, 9 to 15 percent slopes--3 percent
Madeline very stony loam, 9 to 15 percent slopes--3 percent
Rubble land, 9 to 15 percent slopes--2 percent

Component Description

Hart Camp and similar soils
Landform: Backslopes of plateaus
Slope: 9 to 15 percent
Parent material: Andesitic tuff
Typical vegetation: Idaho fescue, basin wildrye, mountain big sagebrush, bluebunch wheatgrass, Canby bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 5 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 16 inches; gravelly clay loam
Layer 3--16 to 20 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Devada and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, Thurber needlegrass, bluegrass, low sagebrush

Typical profile:
Surface rock fragments: About 20 percent cobbles, 25 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 17 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Tunnison and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Beardless wildrye, western wheatgrass, big sagebrush, rubber rabbitbrush, bottlebrush squirreltail, littleleaf horsebrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles
Layer 1--0 to 1 inch; very cobbly clay
Layer 2--1 to 31 inches; clay
Layer 3--31 to 38 inches; weathered bedrock
Layer 4--38 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 20 to 35 inches
Bedrock (lithic): 30 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF093CA--Shallow clay 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bucklake very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, antelope bitterbrush, basin wildrye, Thurber needlegrass
Ecological site: R023XF082CA--Stony loam 9-12

Rock outcrop
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Plateaus
Ecological site: None assigned

Sumine cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Idaho fescue, Thurber needlegrass, oceanspray, bluebunch wheatgrass, basin wildrye, mountain brome, mountain big sagebrush
Ecological site: R021XE176CA--Loam 12-16

Madeline very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Ridges
Typical vegetation: Idaho fescue, antelope bitterbrush, Thurber needlegrass, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Rubble land
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Landform: Plateaus
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

234--Hart Camp-Madeline association, 9 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,600 to 6,200
Precipitation: 10 to 14 inches
Air temperature: 42 to 45 degrees Fahrenheit
Frost-free period: 60 to 90 days

Composition

Hart Camp gravelly loam, 9 to 15 percent slopes--50 percent
Madeline very stony loam, 9 to 15 percent slopes--35 percent
Ninemile very stony loam, 9 to 15 percent slopes--4 percent
Fredonyer very stony loam, 9 to 15 percent slopes--4 percent
Petescreek gravelly loam, 9 to 15 percent slopes--3 percent
Rubble land, 9 to 15 percent slopes--2 percent
Rock outcrop, 9 to 15 percent slopes--2 percent

Component Description

Hart Camp and similar soils
Landform: Backslopes of mountains
Slope: 9 to 15 percent, north aspect
Parent material: Andesitic tuff
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Typical profile:
Surface rock fragments: About 3 percent cobbles
Layer 1--0 to 4 inches; gravelly loam
Layer 2--4 to 16 inches; gravelly clay loam
Layer 3--16 to 20 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 10 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Madeline and similar soils
Landform: Ridges
Slope: 9 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Idaho fescue, mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 20 percent stones
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 9 inches; gravelly clay loam
Layer 3--9 to 16 inches; gravelly clay
Layer 4--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ninemile very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent, north aspect
Landform: Ridges
Typical vegetation: Bluegrass, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass, balsamroot, bluebunch wheatgrass, Idaho fescue, low sagebrush
Ecological site: R021XE173CA--Shallow stony loam 12-16

Fredonyer very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Landform: Ridges
Typical vegetation: Mountain big sagebrush, Idaho fescue, curlleaf mountain mahogany
Ecological site: R021XE178CA

Petescreek gravelly loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass
Ecological site: R021XE176CA

Rubble land
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
“Engineering” section
“Soil Properties” section

235--Haypress-Tanob association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Mountains
Elevation: 5,000 to 6,000
Precipitation: 16 to 18 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 50 to 80 days

Composition

Haypress very bouldery loamy coarse sand, 30 to 50 percent slopes--60 percent
Tanob gravelly loamy coarse sand, 15 to 30 percent slopes--20 percent
Mottsville gravelly loamy coarse sand, 15 to 30 percent slopes--8 percent
Galeppi sandy loam, 15 to 30 percent slopes--7 percent
Glenbrook sand, 30 to 50 percent slopes--5 percent

Component Description

Haypress and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Needlegrass, antelope bitterbrush, Anderson peachbrush, green ephedra, bluebunch wheatgrass, big sagebrush

Typical profile:
Surface rock fragments: About 5 percent boulders, 15 percent stones
Layer 1--0 to 16 inches; very bouldery loamy coarse sand
Layer 2--16 to 42 inches; gravelly loamy coarse sand
Layer 3--42 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Rapid
Available water capacity: About 3 inches
Present flooding: None
Present ponding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF052CA--Granitic upland 9-12

Component Description

Tanob and similar soils
Landform: Toeslopes of mountains
Slope: 15 to 30 percent
Parent material: Residuum weathered from granite
Typical vegetation: Bluebunch wheatgrass, needlegrass, mountain big sagebrush, green ephedra, antelope bitterbrush, Anderson peachbrush

Typical profile:
Layer 1--0 to 10 inches; gravelly loamy coarse sand
Layer 2--10 to 26 inches; sandy loam
Layer 3--26 to 30 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Present ponding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R026XF052CA--Granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Landform: Fan remnants
Typical vegetation: Indian ricegrass, antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail
Ecological site: R026XF051CA

Galeppi sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Landform: Fan remnants
Typical vegetation: Wyoming big sagebrush, rubber rabbitbrush, beardless wildrye, Indian ricegrass, Anderson peachbrush, antelope bitterbrush, needleandthread
Ecological site: R026XF051CA

Glenbrook sand and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Rock pediments
Typical vegetation: Big sagebrush, yellow rabbitbrush, green ephedra, other perennial forbs, other perennial grasses, antelope bitterbrush, bottlebrush squirreltail, other shrubs, desert needlegrass, Thurber needlegrass
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

236--Herjun loamy sand, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain, lake plain
Elevation: 4,000 to 4,050
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Herjun loamy sand, 0 to 2 percent slopes--85 percent
Honlak loam, 0 to 2 percent slopes--5 percent
Playas, 0 to 1 percent slopes--5 percent
Blickenstaff sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Herjun and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Alkaligrass, bluegrass, black greasewood, basin wildrye, inland saltgrass, western wheatgrass, rush

Typical profile:
Layer 1--0 to 18 inches; loamy sand
Layer 2--18 to 40 inches; sandy loam
Layer 3--40 to 53 inches; loamy sand
Layer 4--53 to 60 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderate
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 4 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 3s-4
Nonirrigated land capability: 7s
Ecological site: R023XG058CA--Saline-sodic subirrigated 6-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Honlak loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Western wheatgrass, inland saltgrass, basin wildrye, beardless wildrye, rush, bluegrass, alkaligrass, black greasewood
Ecological site: R023XG058CA

Playas silty clay
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Playas
Ecological site: None assigned

Blickenstaff sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

237--Herjun silt loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,010 to 4,020
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Herjun silt loam, 0 to 2 percent slopes--80 percent
Bobert sandy loam, 0 to 2 percent slopes--8 percent
Humboldt silty clay, 0 to 2 percent slopes--7 percent
Truckee clay loam, 0 to 2 percent slopes--5 percent

Component Description

Herjun and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Western wheatgrass, inland saltgrass, basin wildrye, black greasewood, alkaligrass, bluegrass, rush

Typical profile:
Layer 1--0 to 10 inches; silt loam
Layer 2--10 to 32 inches; sandy loam
Layer 3--32 to 60 inches; silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderate
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: Rare
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 2s-6
Nonirrigated land capability: 7s
Ecological site: R023XG058CA--Saline-sodic subirrigated 6-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bobert sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Western wheatgrass, inland saltgrass, spiny hopsage, black greasewood, bottlebrush squirreltail, seepweed
Ecological site: R023XG050CA--Saline-sodic flat 6-9

Humboldt silty clay and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Truckee clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

238--Highrock-Mazuma-Wespac association, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,050
Precipitation: 6 to 8 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Highrock fine sandy loam, 0 to 2 percent slopes--40 percent
Mazuma loamy fine sand, 0 to 2 percent slopes--25 percent
Wespac fine sandy loam, 0 to 2 percent slopes--20 percent
Herlong fine sandy loam, 0 to 2 percent slopes--3 percent
Stacy fine sandy loam, 0 to 2 percent slopes--3 percent
Toulon very gravelly fine sandy loam, 2 to 5 percent slopes--3 percent
Ragtown loam, 0 to 2 percent slopes--3 percent
McConnel gravelly fine sandy loam, 2 to 5 percent slopes--2 percent

Rock outcrop, tufa, 0 to 2 percent slopes--1 percent

Component Description

Highrock and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bottlebrush squirreltail, black greasewood, spiny hopsage, basin wildrye, shadscale

Typical profile:
Layer 1--0 to 5 inches; fine sandy loam
Layer 2--5 to 10 inches; clay loam
Layer 3--10 to 14 inches; sandy clay loam
Layer 4--14 to 30 inches; loam
Layer 5--30 to 60 inches; silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-4
Nonirrigated land capability: 7s
Ecological site: R023XG047CA--Sodic terrace 6-9

Component Description

Mazuma and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Seepweed, basin wildrye, bottlebrush squirreltail, shadscale, black greasewood

Typical profile:
Layer 1--0 to 5 inches; loamy fine sand
Layer 2--5 to 60 inches; stratified gravelly coarse sand to silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2s-5
Nonirrigated land capability: 7s
Ecological site: R023XG047CA

Component Description

Wespac and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 3 inches; fine sandy loam
Layer 2--3 to 45 inches; sandy clay loam
Layer 3--45 to 60 inches; stratified sand to fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Sodicity: Sodic within 40 inches
Available water capacity: About 8 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3s-6
Nonirrigated land capability: 7s
Ecological site: R023XG048CA--Sodic loam 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Herlong fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail
Ecological site: R023XG046CA--Sodic flat 6-9

Stacy fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Alluvial fans

Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood
Ecological site: R023XG051CA--Loamy bottom 6-9

Toulon very gravelly fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Shadscale, spiny hopsage, Indian ricegrass, bottlebrush squirreltail
Ecological site: R023XG057CA--Sodic gravelly sand 6-9

Ragtown loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, basin wildrye, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XG047CA--Sodic terrace 6-9

McConnel gravelly fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Wyoming big sagebrush, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, globemallow, needleandthread
Ecological site: R023XG054CA--Sandy terrace 6-9

Rock outcrop, tufa
Composition: 0 to 1 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

239--Highrock-Wespac-Zorravista complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,020
Precipitation: 6 to 8 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Highrock fine sandy loam, 0 to 2 percent slopes--45 percent
Wespac fine sandy loam, 0 to 2 percent slopes--25 percent
Zorravista loamy sand, 0 to 2 percent slopes--20 percent
Ragtown loam, 0 to 2 percent slopes--5 percent
Playas, 0 to 1 percent slopes--5 percent

Component Description

Highrock and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin wildrye, shadscale, spiny hopsage, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 5 inches; fine sandy loam
Layer 2--5 to 8 inches; clay loam
Layer 3--8 to 12 inches; sandy clay loam
Layer 4--12 to 27 inches; loam
Layer 5--27 to 60 inches; silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-4
Nonirrigated land capability: 7s
Ecological site: R023XG047CA--Sodic terrace 6-9

Component Description

Wespac fine sandy loam and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bottlebrush squirreltail, basin wildrye, basin big sagebrush, black greasewood

Typical profile:
Layer 1--0 to 10 inches; fine sandy loam
Layer 2--10 to 19 inches; sandy clay loam
Layer 3--19 to 60 inches; loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3s-6
Nonirrigated land capability: 7s
Ecological site: R023XG048CA--Sodic loam 6-9

Component Description

Zorravista loamy sand and similar soils
Landform: Dunes
Slope: 0 to 2 percent
Parent material: Eolian sands
Typical vegetation: Fourwing saltbush, littleleaf horsebrush, needleandthread, black greasewood, Indian ricegrass, spiny hopsage, basin wildrye, rubber rabbitbrush, basin big sagebrush

Typical profile:
Layer 1--0 to 4 inches; loamy sand
Layer 2--4 to 60 inches; stratified fine sand to loamy fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Negligible
Permeability class (root zone): Very rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3s-4
Nonirrigated land capability: 7s
Ecological site: R023XG049CA--Sand dunes 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ragtown loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, basin wildrye, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XG047CA--Sodic terrace 6-9

Playas silty clay
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

240--Home Camp-Newlands association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,000 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 41 to 44 degrees Fahrenheit
Frost-free period: 30 to 70 days

Composition

Home Camp stony loam, 5 to 15 percent slopes--65 percent
Newlands stony loam, 9 to 30 percent slopes--20 percent
Hart Camp very stony loam, 15 to 30 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Madeline very stony loam, 5 to 15 percent slopes--5 percent

Component Description

Home Camp stony loam and similar soils
Landform: Ridges
Slope: 5 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, needlegrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 10 percent cobbles, 5 percent stones

Layer 1--0 to 3 inches; stony loam
Layer 2--3 to 9 inches; cobbly loam
Layer 3--9 to 17 inches; very cobbly clay loam
Layer 4--17 to 28 inches; very gravelly clay
Layer 5--28 to 32 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Newlands stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluegrass, needlegrass, antelope bitterbrush, mountain big sagebrush, Idaho fescue

Typical profile:
Surface rock fragments: About 5 percent cobbles, 5 percent stones
Layer 1--0 to 8 inches; stony loam
Layer 2--8 to 43 inches; gravelly clay loam
Layer 3--43 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hart Camp very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Backslopes of plateaus
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, Idaho fescue, Canby bluegrass, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Toeslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

241--Honlak loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,000 to 4,010
Precipitation: 9 to 12 inches
Air temperature: 49 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Honlak loam, 0 to 2 percent slopes--80 percent
Herjun silt loam, 0 to 2 percent slopes--6 percent
Standish fine sandy loam, 0 to 2 percent slopes--5 percent
Humboldt silty clay loam, 0 to 2 percent slopes--5 percent
McDermott silt loam, 0 to 2 percent slopes--4 percent

Component Description

Honlak loam and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Beardless wildrye, basin wildrye, rush, western wheatgrass, bluegrass, alkaligrass, inland saltgrass, black greasewood

Typical profile:
Layer 1--0 to 4 inches; loam
Layer 2--4 to 20 inches; sandy clay loam
Layer 3--20 to 28 inches; loam
Layer 4--28 to 35 inches; coarse sandy loam
Layer 5--35 to 46 inches; loam
Layer 6--46 to 60 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Water table: Present
Natural drainage class: Somewhat poorly drained

Interpretive Groups
Nonirrigated land capability: 7w
Ecological site: R023XG058CA--Saline-sodic subirrigated 6-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Herjun silt loam and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Western wheatgrass, inland saltgrass, basin wildrye, rush, bluegrass, alkaligrass, black greasewood
Ecological site: R023XG058CA--Saline-sodic subirrigated 6-16

Standish fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin big sagebrush, rabbitbrush, inland saltgrass, basin wildrye, black greasewood
Ecological site: R023XG059CA--Saline-sodic loam 6-12

Humboldt silty clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

McDermott silt loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail
Ecological site: R023XG048CA--Sodic loam 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

242--Horsecamp cobbly silty clay, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,300 to 5,600
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Horsecamp cobbly silty clay, 2 to 9 percent slopes--85 percent
Devada very stony loam, 2 to 5 percent slopes--4 percent
Ravendale silty clay, 0 to 2 percent slopes--3 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--2 percent
Rock outcrop, 5 to 9 percent slopes--2 percent
Tunnison very cobbly clay, 2 to 9 percent slopes--2 percent
Longcreek very stony loam, 5 to 9 percent slopes--2 percent

Component Description

Horsecamp and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Residuum weathered from volcanic rock

Typical vegetation: Littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail, beardless wildrye, big sagebrush, western wheatgrass, rubber rabbitbrush

Typical profile:
Surface rock fragments: About 10 percent cobbles, 3 percent stones
Layer 1--0 to 2 inches; cobbly silty clay
Layer 2--2 to 27 inches; silty clay
Layer 3--27 to 46 inches; silty clay
Layer 4--46 to 50 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: R023XF084CA--Clay upland 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, low sagebrush, bluegrass, Thurber needlegrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Ravendale silty clay and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Western wheatgrass, silver sagebrush, beardless wildrye, Nevada bluegrass
Ecological site: R023XF092CA--Clay floodplain 9-16

Brubeck very cobbly clay and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Rock outcrop
Composition: 0 to 2 percent
Slope: 5 to 9 percent
Landform: Plateaus
Ecological site: None assigned

Tunnison very cobbly clay and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, western wheatgrass, big sagebrush, littleleaf horsebrush
Ecological site: R023XF093CA--Shallow clay 9-16

Longcreek very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 9 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass
Ecological site: R023XF082CA

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

243--Horsecamp-Brubeck association, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,300 to 5,600
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Horsecamp cobbly silty clay, 2 to 9 percent slopes--45 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--40 percent
Ravendale silty clay, 0 to 2 percent slopes--4 percent
Gerlach silty clay, 2 to 5 percent slopes--4 percent

Devada very stony loam, 2 to 9 percent slopes--3 percent
Rock outcrop, 5 to 9 percent slopes--2 percent
Longcreek very stony loam, 2 to 9 percent slopes--2 percent

Component Description

Horsecamp and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Residuum weathered from volcanic rock
Typical vegetation: Rubber rabbitbrush, big sagebrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush, western wheatgrass

Typical profile:
Surface rock fragments: About 30 percent cobbles, 3 percent stones
Layer 1--0 to 2 inches; cobbly silty clay
Layer 2--2 to 27 inches; silty clay
Layer 3--27 to 46 inches; silty clay
Layer 4--46 to 50 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA--Clay upland 9-16

Component Description

Brubeck and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, littleleaf horsebrush, bottlebrush squirreltail, beardless wildrye, western wheatgrass, big sagebrush, rubber rabbitbrush

Typical profile:
Surface rock fragments: About 30 percent cobbles, 5 percent stones
Layer 1--0 to 2 inches; very cobbly clay
Layer 2--2 to 32 inches; clay
Layer 3--32 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ravendale silty clay and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Western wheatgrass, silver sagebrush, beardless wildrye, Nevada bluegrass
Ecological site: R023XF092CA--Clay floodplain 9-16

Gerlach silty clay and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Alluvial flats
Typical vegetation: Big sagebrush, saltbush, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XF085CA--Silty clay flat 9-12

Devada very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Bluebunch wheatgrass, low sagebrush, bluegrass, Thurber needlegrass
Ecological site: R023XF081CA

Rock outcrop
Composition: 0 to 2 percent
Slope: 5 to 9 percent
Landform: Plateaus
Ecological site: None assigned

Longcreek very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent, north aspect
Landform: Backslopes of mountains

Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass
Ecological site: R023XF082CA

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

244--Horsecamp-Hunnton complex, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,500 to 4,800
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 90 to 100 days

Composition

Horsecamp very cobbly silty clay, 2 to 9 percent slopes--45 percent
Hunnton very cobbly silt loam, 2 to 9 percent slopes--40 percent
Puls very cobbly loam, 2 to 5 percent slopes--5 percent
Corral very cobbly loam, 5 to 9 percent slopes--5 percent
Cochran very cobbly loam, 2 to 9 percent slopes--5 percent

Component Description

Horsecamp and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, bottlebrush squirreltail, littleleaf horsebrush, beardless wildrye, rubber rabbitbrush, big sagebrush, western wheatgrass

Typical profile:
Surface rock fragments: About 30 percent cobbles, 2 percent stones
Layer 1--0 to 2 inches; very cobbly silty clay
Layer 2--2 to 46 inches; silty clay
Layer 3--46 to 50 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF084CA--Clay upland 9-16

Component Description

Hunnton and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Other shrubs, Thurber needlegrass, antelope bitterbrush, basin wildrye, Wyoming big sagebrush, bluebunch wheatgrass, other perennial forbs, other perennial grasses

Typical profile:
Surface rock fragments: About 20 percent cobbles
Layer 1--0 to 5 inches; very cobbly silt loam
Layer 2--5 to 22 inches; gravelly clay
Layer 3--22 to 60 inches; indurated

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 22 to 30 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Puls very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Plateaus

Typical vegetation: Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Corral very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Rock pediments
Typical vegetation: Big sagebrush, Thurber needlegrass, bluebunch wheatgrass, basin wildrye
Ecological site: R023XF082CA--Stony loam 9-12

Cochran very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Lake terraces
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, needlegrass, antelope bitterbrush
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

245--Horsecamp-Mahala association, 0 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 5,600 to 5,700
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Horsecamp cobbly silty clay, 0 to 9 percent slopes--55 percent
Mahala very cobbly silt loam, 0 to 9 percent slopes--35 percent
Sumine cobbly loam, 9 to 15 percent slopes--5 percent
Boulder Lake silty clay, 0 to 2 percent slopes--5 percent

Component Description

Horsecamp and similar soils
Landform: Plateaus
Slope: 0 to 9 percent
Parent material: Residuum weathered from volcanic rock
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush

Typical profile:
Surface rock fragments: About 15 percent cobbles
Layer 1--0 to 2 inches; cobbly silty clay
Layer 2--2 to 27 inches; silty clay
Layer 3--27 to 46 inches; silty clay
Layer 4--46 to 50 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R023XF084CA--Clay upland 9-16

Component Description

Mahala very cobbly silt loam and similar soils
Landform: Plateaus
Slope: 0 to 9 percent
Parent material: Loess over residuum weathered from tuff
Typical vegetation: Bluebunch wheatgrass, low sagebrush, bluegrass, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles, 2 percent stones
Layer 1--0 to 3 inches; very cobbly silt loam
Layer 2--3 to 16 inches; clay
Layer 3--16 to 36 inches; clay
Layer 4--36 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Very slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Sumine cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, oceanspray, Idaho fescue, basin wildrye, mountain brome, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE176CA

Boulder Lake silty clay and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Basin floors
Typical vegetation: Western wheatgrass, silver sagebrush, beardless wildrye, mat muhly, Nevada bluegrass, sedge, rush, bottlebrush squirreltail
Ecological site: R023XF092CA--Clay floodplain 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

246--Humboldt silty clay, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,020 to 4,030
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Humboldt silty clay, 0 to 2 percent slopes--80 percent
Humboldt silty clay, 0 to 2 percent slopes, frequently flooded--8 percent
Truckee loam, 0 to 2 percent slopes--7 percent
Humboldt silty clay loam, saline, 0 to 2 percent slopes--5 percent

Component Description

Humboldt silty clay and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 21 inches; silty clay
Layer 2--21 to 60 inches; stratified silty clay loam to clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 10 inches
Present flooding: Rare
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 3w-2
Nonirrigated land capability: 6w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Humboldt silty clay and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Truckee loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Humboldt silty clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated hay and pasture, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section

"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

247--Humboldt silty clay, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,050 to 4,150
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Humboldt silty clay, 0 to 1 percent slopes--80 percent
Rices clay loam, 0 to 1 percent slopes--5 percent
Truckee loam, 0 to 1 percent slopes--4 percent
Smocreek silty clay loam, 0 to 1 percent slopes--4 percent
Saddlerock silty clay, 0 to 1 percent slopes--4 percent
Riverwash, 0 to 1 percent slopes--3 percent

Component Description

Humboldt silty clay and similar soils
Landform: Flood plains
Slope: 0 to 1 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 21 inches; silty clay
Layer 2--21 to 60 inches; stratified silty clay loam to clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 11 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 3w-2
Nonirrigated land capability: 6w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rices clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Ecological site: None assigned

Truckee loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Smocreek and similar soils
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Landform: Stream terraces
Typical vegetation: Basin big sagebrush, basin wildrye
Ecological site: R023XF088CA--Loamy bottom 9-16

Saddlerock silty clay and similar soils
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Riverwash
Composition: 0 to 3 percent
Slope: 0 to 1 percent
Landform: Channels
Ecological site: None assigned

Management

Major uses: Irrigated hay and pasture, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

248--Humboldt silty clay, 0 to 1 percent slopes, ponded

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 3,990 to 3,990
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Humboldt silty clay, 0 to 1 percent slopes--85 percent
Humboldt silty clay loam, saline, 0 to 1 percent slopes--8 percent
Humboldt silty clay, 0 to 1 percent slopes, frequently flooded--7 percent

Component Description

Humboldt silty clay and similar soils
Landform: Flood plains
Slope: 0 to 1 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 21 inches; silty clay
Layer 2--21 to 60 inches; stratified silty clay loam to clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 11 inches
Present flooding: Occasional
Present ponding: Frequent
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 5w
Nonirrigated land capability: 5w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Humboldt silty clay loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Humboldt silty clay and similar soils
Composition: 0 to 7 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated hay and pasture, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

249--Humboldt silty clay loam, saline, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,000 to 4,050
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Humboldt silty clay loam, saline, 0 to 2 percent slopes, occasionally flooded--85 percent
Humboldt silty clay, 0 to 2 percent slopes, frequently flooded--8 percent
Saddlerock silty clay, 0 to 2 percent slopes--7 percent

Component Description

Humboldt silty clay loam and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 21 inches; silty clay loam
Layer 2--21 to 60 inches; stratified silty clay loam to clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Moderately slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 11 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 3w-2
Nonirrigated land capability: 6w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Humboldt silty clay and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Saddlerock silty clay, drained and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Basin big sagebrush, basin wildrye
Ecological site: R023XF088CA--Loamy bottom 9-16

Management

Major uses: Livestock grazing, irrigated hay and pasture, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

250--Hunnton-Shinnpeak association, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,500 to 4,800
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 90 to 100 days

Composition

Hunnton cobbly sandy loam, 2 to 9 percent slopes--55 percent
Shinnpeak very cobbly sandy loam, 2 to 9 percent slopes--30 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--5 percent
Corral very cobbly loam, 2 to 9 percent slopes--4 percent
Rock outcrop, 5 to 9 percent slopes--3 percent
Barnard stony sandy loam, 2 to 9 percent slopes--3 percent

Component Description

Hunnton cobbly sandy loam and similar soils
Landform: Fan terraces
Slope: 2 to 9 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, basin wildrye, other perennial forbs, other perennial grasses, antelope bitterbrush, other shrubs, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 2 percent stones
Layer 1--0 to 2 inches; cobbly sandy loam
Layer 2--2 to 5 inches; gravelly fine sandy loam
Layer 3--5 to 22 inches; gravelly clay
Layer 4--22 to 60 inches; indurated

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 22 to 30 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Shinnpeak very cobbly sandy loam and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Bluebunch wheatgrass, black sagebrush, Sandberg bluegrass, other perennial forbs, other perennial grasses, bottlebrush squirreltail, other shrubs, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 5 percent stones
Layer 1--0 to 2 inches; very cobbly sandy loam
Layer 2--2 to 13 inches; very gravelly sandy clay loam
Layer 3--13 to 22 inches; indurated
Layer 4--22 to 60 inches; cemented

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 13 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 1.0 inch
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Brubeck very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Big sagebrush, littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, western wheatgrass
Ecological site: R023XF084CA--Clay upland 9-16

Corral very cobbly loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Rock pediments
Typical vegetation: Thurber needlegrass, big sagebrush, bluebunch wheatgrass, basin wildrye
Ecological site: R023XF082CA--Stony loam 9-12

Rock outcrop
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Plateaus
Ecological site: None assigned

Barnard stony sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Thurber needlegrass, antelope bitterbrush, basin wildrye, Wyoming big sagebrush, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
“Engineering” section
“Soil Properties” section

251--Incy fine sand, 0 to 5 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Alluvial plain
Elevation: 4,100 to 4,200
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Incy fine sand, 0 to 5 percent slopes--90 percent
Mottsville gravelly loamy coarse sand, 0 to 5 percent slopes--5 percent
Orr sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Incy fine sand and similar soils
Landform: Dunes
Slope: 0 to 5 percent
Parent material: Eolian sands
Typical vegetation: Antelope bitterbrush, needleandthread, Indian ricegrass, arrowleaf balsamroot, western wheatgrass, Wyoming big sagebrush, sand dropseed

Typical profile:
Layer 1--0 to 9 inches; fine sand
Layer 2--9 to 60 inches; fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Negligible
Permeability class (root zone): Very rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 4s-4
Nonirrigated land capability: 7s
Ecological site: R026XF022CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Fan remnants
Typical vegetation: Bottlebrush squirreltail, basin big sagebrush, desert needlegrass, needleandthread, antelope bitterbrush, desert peach, Indian ricegrass
Ecological site: R026XF051CA

Orr sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Yellow rabbitbrush, beardless wildrye, Indian ricegrass, Anderson peachbrush, antelope bitterbrush, needleandthread, Wyoming big sagebrush
Ecological site: R026XF051CA--Granitic fan 9-12

Management

Major uses: Livestock grazing, wildlife habitat, urban development

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

252--Incy fine sand, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,300 to 5,500
Precipitation: 9 to 14 inches
Air temperature: 44 to 50 degrees Fahrenheit
Frost-free period: 60 to 130 days

Composition

Incy fine sand, 5 to 30 percent slopes--85 percent
Orhood very stony loam, 5 to 30 percent slopes--5 percent
Fordney loamy sand, 2 to 5 percent slopes--5 percent
Devada very stony loam, 15 to 30 percent slopes--5 percent

Component Description

Incy fine sand and similar soils
Landform: Dunes
Slope: 5 to 30 percent
Parent material: Eolian sands
Typical vegetation: Needleandthread, western wheatgrass, Wyoming big sagebrush, arrowleaf balsamroot, Indian ricegrass, antelope bitterbrush, sand dropseed

Typical profile:
Layer 1--0 to 9 inches; fine sand
Layer 2--9 to 60 inches; fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Very rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 4s-4
Nonirrigated land capability: 7s
Ecological site: R026XF022CA--Granitic sand 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Orhood very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, rabbitbrush, Lemmon needlegrass, Idaho fescue, Thurber needlegrass, Sandberg bluegrass, arrowleaf balsamroot, antelope bitterbrush, mountain big sagebrush
Ecological site: R021XE174CA--Stony loam 12-16

Fordney loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Mountain big sagebrush, beardless wildrye, antelope bitterbrush, needleandthread, Idaho fescue
Ecological site: R021XE180CA--Sandy loam fan 12-16

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Bluegrass, Thurber needlegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Management

Major uses: Livestock grazing, wildlife habitat

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

253--Indiano-Graufels association, 15 to 30 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Foothills
Elevation: 4,300 to 4,600

Precipitation: 10 to 12 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Indiano gravelly sandy loam, 15 to 30 percent slopes--55 percent
Graufels gravelly loamy coarse sand, 15 to 30 percent slopes--30 percent
Indiano gravelly sandy loam, 15 to 30 percent slopes, extremely stony--8 percent
Glenbrook gravelly loamy coarse sand, 15 to 30 percent slopes--7 percent

Component Description

Indiano gravelly sandy loam and similar soils
Landform: Backslopes of hills
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Indian ricegrass, basin wildrye, Wyoming big sagebrush, Sandberg bluegrass, other shrubs, other perennial forbs, other perennial grasses, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Layer 1--0 to 8 inches; gravelly sandy loam
Layer 2--8 to 38 inches; gravelly clay loam
Layer 3--38 to 42 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R026XF052CA--Granitic upland 9-12

Component Description

Graufels gravelly loamy coarse sand and similar soils
Landform: Backslopes of hills
Slope: 15 to 30 percent, north aspect
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Wyoming big sagebrush, green ephedra, Anderson peachbrush, antelope bitterbrush, needlegrass, bluebunch wheatgrass

Typical profile:
Layer 1--0 to 14 inches; gravelly loamy coarse sand
Layer 2--14 to 22 inches; sand
Layer 3--22 to 26 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R026XF052CA--Granitic upland 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Indiano and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of hills
Typical vegetation: Thurber needlegrass, Wyoming big sagebrush, other shrubs, antelope bitterbrush, other perennial grasses, basin wildrye, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, other perennial forbs
Ecological site: R026XF052CA

Glenbrook and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Bottlebrush squirreltail, yellow rabbitbrush, green ephedra, big sagebrush, other perennial forbs, other perennial grasses, Thurber needlegrass, desert needlegrass, other shrubs, antelope bitterbrush
Ecological site: R026XF053CA--Shallow granitic upland 9-12

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

254--Indiano-Searles association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,400 to 6,000
Precipitation: 12 to 14 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Indiano very stony loam, 5 to 30 percent slopes--45 percent
Searles very stony loam, 5 to 30 percent slopes--35 percent
Devada very stony loam, 5 to 15 percent slopes--5 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--4 percent
Horsecamp cobbly silty clay, 5 to 9 percent slopes--4 percent
Petescreek very gravelly loam, 5 to 15 percent slopes--2 percent

Component Description

Indiano very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, Thurber needlegrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 10 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 7 inches; gravelly loam
Layer 3--7 to 11 inches; cobbly loam
Layer 4--11 to 18 inches; gravelly clay loam
Layer 5--18 to 27 inches; cobbly clay loam
Layer 6--27 to 31 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Antelope bitterbrush, mountain big sagebrush, Thurber needlegrass, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE179CA--Warm stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Backslopes of mountains

Typical vegetation: Thurber needlegrass, antelope bitterbrush, bluegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Brubeck very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, big sagebrush, littleleaf horsebrush, Thurber needlegrass, western wheatgrass
Ecological site: R023XF084CA--Clay upland 9-16

Rock outcrop
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Horsecamp cobbly silty clay and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA

Petescreek very gravelly loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, bluegrass
Ecological site: R021XE044CA--Cool loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

255--Indiano-Searles association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 4,500 to 5,000
Precipitation: 12 to 14 inches
Air temperature: 45 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Indiano very stony loam, 30 to 50 percent slopes--55 percent
Searles very stony loam, 30 to 50 percent slopes--35 percent
Fivesprings very stony loam, 30 to 50 percent slopes--5 percent
Chalco gravelly fine sandy loam, 5 to 9 percent slopes--5 percent

Component Description

Indiano very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, Thurber needlegrass, antelope bitterbrush, mountain big sagebrush, basin wildrye

Typical profile:
Surface rock fragments: About 10 percent cobbles, 10 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 7 inches; cobbly loam
Layer 3--7 to 27 inches; cobbly clay loam
Layer 4--27 to 31 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE179CA--Warm stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fivesprings very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE179CA

Chalco gravelly fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Littleleaf horsebrush, low sagebrush, Sandberg bluegrass, other perennial grasses, bottlebrush squirreltail, Thurber needlegrass
Ecological site: R021XE184CA--Shallow loam 12-16

Management

Major uses: Livestock grazing, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

256--Indiano-Zephan-Duco association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Mountains
Elevation: 5,000 to 5,600
Precipitation: 12 to 14 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Indiano stony fine sandy loam, 30 to 50 percent slopes--45 percent
Zephan stony sandy loam, 30 to 50 percent slopes--30 percent
Duco very gravelly loam, 30 to 50 percent slopes--15 percent
Barnard stony sandy loam, 5 to 15 percent slopes--2 percent
Graufels bouldery sand, 30 to 50 percent slopes--2 percent
Glenbrook gravelly loamy coarse sand, 30 to 50 percent slopes--2 percent
Glean very stony loam, 30 to 50 percent slopes--2 percent
Corral very cobbly loam, 30 to 50 percent slopes--2 percent

Component Description

Indiano stony fine sandy loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, other perennial grasses, antelope bitterbrush, other perennial forbs, basin wildrye, Wyoming big sagebrush, bluebunch wheatgrass, other shrubs

Typical profile:
Surface rock fragments: About 5 percent cobbles, 10 percent stones
Layer 1--0 to 7 inches; stony fine sandy loam
Layer 2--7 to 27 inches; gravelly clay loam
Layer 3--27 to 31 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches

Permeability class (root zone): Moderately slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Zephan stony sandy loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Thurber needlegrass, antelope bitterbrush, western wheatgrass, Wyoming big sagebrush, basin wildrye

Typical profile:
Surface rock fragments: About 3 percent cobbles, 3 percent stones
Layer 1--0 to 4 inches; stony sandy loam
Layer 2--4 to 26 inches; very cobbly clay loam
Layer 3--26 to 42 inches; weathered bedrock
Layer 4--42 to 46 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 26 to 42 inches
Bedrock (lithic): 40 to 50 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Duco and similar soils
Landform: Ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--western juniper, western juniper, western juniper, western juniper, western juniper
Site index: Western juniper--38 at an age base of 50 years

Typical profile:
Surface rock fragments: About 5 percent cobbles, 5 percent stones
Layer 1--0 to 10 inches; very gravelly loam
Layer 2--10 to 19 inches; very gravelly clay loam
Layer 3--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Barnard stony sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass
Ecological site: R023XF082CA--Stony loam 9-12

Graufels bouldery sand and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, needlegrass, Wyoming big sagebrush, Anderson peachbrush, green ephedra, bluebunch wheatgrass
Ecological site: R026XF052CA

Glenbrook gravelly loamy coarse sand and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Bottlebrush squirreltail, other shrubs, desert needlegrass, Thurber needlegrass, antelope bitterbrush, other perennial grasses, other perennial forbs, green ephedra, yellow rabbitbrush, big sagebrush

Ecological site: R026XF053CA--Shallow granitic upland 9-12

Glean very stony loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Idaho fescue, antelope bitterbrush, mountain big sagebrush, needlegrass, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Corral very cobbly loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Rock pediments
Typical vegetation: Basin wildrye, Thurber needlegrass, bluebunch wheatgrass, big sagebrush
Ecological site: R023XF082CA--Stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

257--Inville very gravelly sandy loam, 0 to 5 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Alluvial plain
Elevation: 5,000 to 5,300
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Inville very gravelly sandy loam, 0 to 5 percent slopes--85 percent
Mountmed clay loam, 0 to 2 percent slopes--8 percent
Swainow very gravelly sandy loam, 2 to 9 percent slopes--7 percent

Component Description

Inville very gravelly sandy loam and similar soils
Landform: Alluvial fans
Slope: 0 to 5 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--snowbrush ceanothus, manzanita, whitethorn ceanothus
Site index: Jeffrey pine--90 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 60

Typical profile:
Layer 1--0 to 10 inches; very gravelly sandy loam
Layer 2--10 to 21 inches; very cobbly loam
Layer 3--21 to 30 inches; extremely gravelly loam
Layer 4--30 to 60 inches; very gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Low
Permeability class (root zone): Moderate
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mountmed clay loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Swainow very gravelly sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--mountain brome, needlegrass, manzanita, whitethorn ceanothus, snowbrush ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section

"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

258--Jauriga gravelly loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,800 to 6,000
Precipitation: 12 to 16 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Jauriga gravelly loam, 2 to 9 percent slopes--85 percent
Ninemile extremely cobbly loam, 2 to 9 percent slopes--8 percent
Ladd sandy loam, 2 to 5 percent slopes--7 percent

Component Description

Jauriga gravelly loam and similar soils
Landform: Toeslopes of mountains
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Antelope bitterbrush, bluegrass, Idaho fescue, mountain big sagebrush, needlegrass

Typical profile:
Layer 1--0 to 9 inches; gravelly loam
Layer 2--9 to 37 inches; gravelly loam
Layer 3--37 to 49 inches; gravelly clay loam
Layer 4--49 to 59 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ninemile extremely cobbly loam and similar soils
Composition: 0 to 8 percent
Slope: 2 to 9 percent
Landform: Backslopes of plateaus, summits of plateaus
Typical vegetation: Bluebunch wheatgrass, Idaho fescue, bluegrass, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass, low sagebrush, balsamroot
Ecological site: R021XE173CA--Shallow stony loam 12-16

Ladd sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Antelope bitterbrush, bluegrass, Idaho fescue, needlegrass, mountain big sagebrush
Ecological site: R021XE044CA--Cool loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

259--Jauriga-Buckbay-Fredonyer association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,300 to 6,000
Precipitation: 12 to 16 inches
Air temperature: 44 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Jauriga gravelly loam, 5 to 15 percent slopes--40 percent
Buckbay gravelly loam, 5 to 15 percent slopes--25 percent
Fredonyer very stony loam, 15 to 30 percent slopes--20 percent
Rubble land, 15 to 30 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Petescreek gravelly loam, 5 to 30 percent slopes--5 percent

Component Description

Jauriga gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 15 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Idaho fescue, needlegrass

Typical profile:
Layer 1--0 to 9 inches; gravelly loam
Layer 2--9 to 37 inches; gravelly loam
Layer 3--37 to 49 inches; gravelly clay loam
Layer 4--49 to 59 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Buckbay gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 15 percent, north aspect
Parent material: Colluvium derived from andesite and residuum weathered from andesite
Typical vegetation: Forest canopy--western juniper, Forest understory--antelope bitterbrush, Idaho fescue, mountain big sagebrush, needlegrass, bluebunch wheatgrass
Site index: Western juniper--24 at an age base of 50 years

Typical profile:
Surface rock fragments: About 2 percent cobbles
Layer 1--0 to 12 inches; gravelly loam
Layer 2--12 to 22 inches; gravelly loam
Layer 3--22 to 29 inches; cobbly loam
Layer 4--29 to 39 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Fredonyer very stony loam and similar soils
Landform: Ridges
Slope: 15 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush

Typical profile:
Surface rock fragments: About 3 percent cobbles, 25 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE178CA--Very stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Petescreek gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE176CA

Management

Major uses: Livestock grazing, juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

260--Keddie loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,200 to 5,300
Precipitation: 12 to 30 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Keddie loam, 0 to 2 percent slopes--95 percent
Dotta gravelly loam, 0 to 5 percent slopes--5 percent

Component Description

Keddie loam and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 34 inches; loam
Layer 2--34 to 50 inches; stratified sandy loam to clay loam
Layer 3--50 to 60 inches; stratified very gravelly loamy coarse sand to very gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Moderate
Available water capacity: About 9 inches
Present flooding: Rare
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 4w-2
Nonirrigated land capability: 4w-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dotta gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Landform: Stream terraces
Typical vegetation: Needlegrass, bluegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush
Ecological site: R021XE044CA--Cool loam 12-16

Management

Major uses: Livestock grazing, irrigated pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

261--Keddie clay loam, 0 to 1 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 4,100 to 4,200
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Keddie clay loam, 0 to 1 percent slopes--85 percent
Humboldt silty clay, 0 to 1 percent slopes--8 percent
Massack loam, 0 to 1 percent slopes--7 percent

Component Description

Keddie clay loam and similar soils
Landform: Flood plains

Slope: 0 to 1 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 8 inches; clay loam
Layer 2--8 to 42 inches; stratified sandy loam to clay loam
Layer 3--42 to 60 inches; silty clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 10 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 3w-2
Nonirrigated land capability: 5w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Humboldt silty clay and similar soils
Composition: 0 to 8 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Massack loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated hay and pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

262--Ladd sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmonts
Elevation: 4,880 to 4,950
Precipitation: 12 to 16 inches
Air temperature: 47 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Ladd sandy loam, 0 to 2 percent slopes--85 percent
Dotta gravelly loam, 0 to 2 percent slopes--6 percent
Bieber sandy loam, 0 to 2 percent slopes--3 percent
Ladd sandy loam, 5 to 9 percent slopes--6 percent

Component Description

Ladd sandy loam and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite
Typical vegetation: Needlegrass, bluegrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush

Typical profile:
Layer 1--0 to 8 inches; sandy loam
Layer 2--8 to 39 inches; sandy clay loam
Layer 3--39 to 72 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 9 inches
Present flooding: None
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3c-2
Nonirrigated land capability: 4c-2
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Dotta gravelly loam and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Bluegrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass
Ecological site: R021XE044CA--Cool loam 12-16

Ladd sandy loam and similar soils
Composition: 0 to 6 percent

Slope: 5 to 9 percent
Landform: Fan remnants
Typical vegetation: Mountain big sagebrush, needlegrass, Idaho fescue, antelope bitterbrush, bluegrass
Ecological site: R021XE044CA--Cool loam 12-16

Bieber sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Low sagebrush, bastardsage, Sandberg bluegrass, bottlebrush squirreltail
Ecological site: R021XE184CA

Management

Major uses: Livestock grazing, irrigated crops, alfalfa hay
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

263--Ladd-Bieber complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,880 to 4,920
Precipitation: 12 to 16 inches
Air temperature: 47 to 49 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Ladd sandy loam, 0 to 2 percent slopes--70 percent
Bieber sandy loam, 0 to 2 percent slopes--20 percent
Bieber cobbly loam, 2 to 9 percent slopes--7 percent
Fordney loamy sand, 0 to 9 percent slopes--3 percent

Component Description

Ladd sandy loam and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluegrass

Typical profile:
Layer 1--0 to 8 inches; sandy loam
Layer 2--8 to 39 inches; sandy clay loam
Layer 3--39 to 72 inches; sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 9 inches
Present flooding: None
Water table: Present
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3c-2
Nonirrigated land capability: 3c-2
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Bieber sandy loam and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Bastardsage, low sagebrush, bottlebrush squirreltail, Sandberg bluegrass

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 11 inches; clay loam
Layer 3--11 to 18 inches; clay
Layer 4--18 to 60 inches; indurated

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 12 to 20 inches
Permeability class (root zone): Very slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 4s-8
Nonirrigated land capability: 6s
Ecological site: R021XE184CA--Shallow loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bieber cobbly loam and similar soils
Composition: 0 to 7 percent
Slope: 2 to 9 percent
Landform: Fan remnants

Typical vegetation: Sandberg bluegrass, low sagebrush, bastardsage, bottlebrush squirreltail
Ecological site: R021XE184CA

Fordney loamy sand and similar soils
Composition: 0 to 3 percent
Slope: 0 to 9 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, antelope bitterbrush, Idaho fescue, beardless wildrye, mountain big sagebrush
Ecological site: R021XE180CA--Sandy loam fan 12-16

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

264--Lakeview loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 5,000 to 5,500
Precipitation: 12 to 16 inches
Air temperature: 45 to 48 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Lakeview loam, 0 to 2 percent slopes--85 percent
Keddie loam, 0 to 1 percent slopes--5 percent
Madeline very stony loam, 5 to 9 percent slopes--5 percent
Incy fine sand, 0 to 2 percent slopes--5 percent

Component Description

Lakeview loam and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock

Typical profile:
Layer 1--0 to 18 inches; loam
Layer 2--18 to 60 inches; clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 10 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 4c-2
Nonirrigated land capability: 4c-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Keddie loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Alluvial fans
Ecological site: None assigned

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Toeslopes of mountains
Typical vegetation: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Incy fine sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Dunes
Typical vegetation: Sand dropseed, antelope bitterbrush, arrowleaf balsamroot, needleandthread, Wyoming big sagebrush, western wheatgrass, Indian ricegrass
Ecological site: R026XF022CA--Granitic sand 9-12

Management

Major uses: Livestock grazing, irrigated hay and pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

265--Lakeview loam, warm, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Alluvial plain
Elevation: 4,100 to 4,200
Precipitation: 12 to 16 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Lakeview loam, 0 to 2 percent slopes--85 percent
Incy fine sand, 0 to 2 percent slopes--5 percent
Massack loam, 0 to 1 percent slopes--5 percent
Madeline very stony loam, 5 to 9 percent slopes--5 percent

Component Description

Lakeview loam and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock

Typical profile:
Layer 1--0 to 18 inches; loam
Layer 2--18 to 60 inches; clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 10 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 2w-2
Nonirrigated land capability: 4w-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Incy fine sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Dunes
Typical vegetation: Needleandthread, sand dropseed, antelope bitterbrush, Indian ricegrass, arrowleaf balsamroot, Wyoming big sagebrush, western wheatgrass
Ecological site: R026XF022CA--Granitic sand 9-12

Massack loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Flood plains
Ecological site: None assigned

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Toeslopes of mountains
Typical vegetation: Antelope bitterbrush, mountain big sagebrush, bluebunch wheatgrass, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing, irrigated hay and pasture, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

266--Lasco gravelly sandy loam, 2 to 15 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,000 to 5,200
Precipitation: 25 to 30 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Lasco gravelly sandy loam, 2 to 15 percent slopes--90 percent
Lasco gravelly sandy loam, 2 to 15 percent slopes, extremely stony--5 percent
Scaribou very gravelly loam, 5 to 15 percent slopes--5 percent

Component Description

Lasco gravelly sandy loam and similar soils
Landform: Mountains
Slope: 2 to 15 percent

Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--antelope bitterbrush, Idaho fescue, big sagebrush
Site index: Jeffrey pine--85 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 58

Typical profile:
Layer 1--0 to 9 inches; gravelly sandy loam
Layer 2--9 to 49 inches; gravelly sandy loam
Layer 3--49 to 59 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Lasco and similar soils
Composition: 0 to 5 percent
Slope: 2 to 15 percent
Landform: Mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--antelope bitterbrush, big sagebrush, Idaho fescue
Ecological site: None assigned

Scaribou very gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 15 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--needlegrass, snowbrush ceanothus, manzanita, mountain brome, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

267--Lasco gravelly sandy loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,300 to 6,000
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Lasco gravelly sandy loam, 30 to 50 percent slopes--95 percent
Bonta gravelly sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Lasco gravelly sandy loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus, needlegrass, mountain brome
Site index: Jeffrey pine--85 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 58

Typical profile:
Layer 1--0 to 9 inches; gravelly sandy loam
Layer 2--9 to 49 inches; gravelly sandy loam
Layer 3--49 to 59 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick

Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bonta gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine, white fir; Forest understory--mountain big sagebrush, mountain brome, whitethorn ceanothus, antelope bitterbrush, needlegrass, snowbrush ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

268--Lasco gravelly loam, 15 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,200 to 5,800
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Lasco gravelly loam, 15 to 30 percent slopes--90 percent
Waterman gravelly loamy coarse sand, 15 to 30 percent slopes--5 percent
Dotta gravelly loam, 5 to 9 percent slopes--5 percent

Component Description

Lasco gravelly loam and similar soils
Landform: Mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--mountain brome, whitethorn ceanothus, manzanita, snowbrush ceanothus, needlegrass
Site index: Jeffrey pine--85 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 58

Typical profile:
Layer 1--0 to 9 inches; gravelly loam
Layer 2--9 to 49 inches; gravelly sandy loam
Layer 3--49 to 59 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Waterman and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--squawcarpet, Idaho fescue, antelope bitterbrush, bottlebrush squirreltail, Columbia needlegrass, mountain big sagebrush
Ecological site: None assigned

Dotta gravelly loam and similar soils
Composition: 0 to 5 percent

Slope: 5 to 9 percent
Landform: Stream terraces
Typical vegetation: Idaho fescue, antelope bitterbrush, bluegrass, mountain big sagebrush, needlegrass
Ecological site: R021XE044CA--Cool loam 12-16

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

269--Lasco-Bonta complex, 15 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,300 to 4,900
Precipitation: 25 to 30 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Lasco sandy loam, 15 to 30 percent slopes--65 percent
Bonta coarse sandy loam, 15 to 30 percent slopes--25 percent
Chirpchatter sandy loam, 5 to 9 percent slopes--4 percent
Chimney gravelly loamy coarse sand, 15 to 30 percent slopes--3 percent
Cagwin loamy coarse sand, 15 to 30 percent slopes--3 percent

Component Description

Lasco sandy loam and similar soils
Landform: Toeslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--California black oak, Jeffrey pine, incense cedar, ponderosa pine; Forest understory--whitethorn ceanothus, needlegrass, manzanita, snowbrush ceanothus, mountain brome
Site index: Ponderosa pine--88 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 60

Typical profile:
Layer 1--0 to 9 inches; sandy loam
Layer 2--9 to 49 inches; sandy loam
Layer 3--49 to 59 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: None assigned

Component Description

Bonta coarse sandy loam and similar soils
Landform: Toeslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from granite and residuum weathered from granite
Typical vegetation: Forest canopy--California black oak, Douglas fir, Jeffrey pine, white fir; Forest understory--antelope bitterbrush, other perennial grasses, big sagebrush
Site index: Jeffrey pine--64 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 43

Typical profile:
Layer 1--0 to 12 inches; coarse sandy loam
Layer 2--12 to 36 inches; coarse sandy loam
Layer 3--36 to 40 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 4e-4
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Chirpchatter sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Fan remnants
Typical vegetation: Forest canopy--California black oak, Jeffrey pine, ponderosa pine; Forest understory--whitethorn ceanothus, greenleaf manzanita, needlegrass, other perennial grasses
Ecological site: None assigned

Chimney gravelly loamy coarse sand and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--squawcarpet, Idaho fescue, antelope bitterbrush, bottlebrush squirreltail, Columbia needlegrass, mountain big sagebrush
Ecological site: None assigned

Cagwin and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--pinemat manzanita, greenleaf manzanita, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

270--Lieberman fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,010
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Lieberman fine sandy loam, 0 to 2 percent slopes--85 percent
Playas silty clay, 0 to 1 percent slopes--5 percent
Mazuma loamy fine sand, 0 to 2 percent slopes--5 percent
Ardep fine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Lieberman fine sandy loam and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 12 inches; fine sandy loam
Layer 2--12 to 20 inches; clay loam
Layer 3--20 to 60 inches; stratified sand to fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA--Sodic flat 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Playas silty clay
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Playas
Ecological site: None assigned

Mazuma loamy fine sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, basin wildrye, black greasewood, seepweed, bottlebrush squirreltail

Ecological site: R023XG047CA--Sodic terrace 6-9

Ardep fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail
Ecological site: R023XG046CA--Sodic flat 6-9

Management

Major uses: Livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

271--Lieberman-Herlong complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,050
Precipitation: 6 to 9 inches
Air temperature: 49 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Lieberman fine sandy loam, 0 to 2 percent slopes--50 percent
Herlong fine sandy loam, 0 to 2 percent slopes--35 percent
Calneva silt loam, 0 to 1 percent slopes--8 percent
Ragtown loam, 0 to 2 percent slopes--7 percent

Component Description

Lieberman fine sandy loam and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Black greasewood, bottlebrush squirreltail, shadscale, bud sagebrush

Typical profile:
Layer 1--0 to 12 inches; fine sandy loam
Layer 2--12 to 20 inches; clay loam
Layer 3--20 to 60 inches; stratified sand to fine sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA--Sodic flat 6-9

Component Description

Herlong fine sandy loam and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 3 inches; fine sandy loam
Layer 2--3 to 9 inches; loam
Layer 3--9 to 12 inches; unweathered bedrock
Layer 4--12 to 68 inches; stratified gravelly sand to very gravelly sandy loam
Layer 5--68 to 72 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 9 to 14 inches
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 1.2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XG046CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calneva silt loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 1 percent
Landform: Basin floors

Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail
Ecological site: R023XG046CA--Sodic flat 6-9

Ragtown loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Shadscale, basin wildrye, spiny hopsage, black greasewood, bottlebrush squirreltail
Ecological site: R023XG047CA--Sodic terrace 6-9

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

272--Lodico very cobbly silt loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateaus
Elevation: 4,800 to 5,200
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Lodico very cobbly silt loam, 2 to 9 percent slopes--85 percent
Brubeck very cobbly clay, 2 to 9 percent slopes--5 percent
Devada very stony loam, 2 to 9 percent slopes--5 percent
Rubble land, 5 to 9 percent slopes--3 percent
Saddlerock silty clay, 0 to 2 percent slopes--2 percent

Component Description

Lodico very cobbly silt loam and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Low sagebrush, Thurber needlegrass, bluebunch wheatgrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 30 percent cobbles, 2 percent stones
Layer 1--0 to 3 inches; very cobbly silt loam
Layer 2--3 to 23 inches; clay
Layer 3--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Very slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Brubeck very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent, south aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, bluebunch wheatgrass
Ecological site: R023XF081CA

Rubble land
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Plateaus
Ecological site: None assigned

Saddlerock silty clay, drained and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Basin wildrye, basin big sagebrush
Ecological site: R023XF088CA

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

273--Longcreek-Devada-Rubble land complex, 9 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,500 to 5,610
Precipitation: 10 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Longcreek very cobbly loam, 9 to 30 percent slopes--35 percent
Devada very cobbly loam, 9 to 30 percent slopes--30 percent
Rubble land fragmental material, 15 to 30 percent slopes--20 percent
Rock outcrop, 15 to 30 percent slopes--3 percent
Shinnpeak very cobbly loam, 9 to 15 percent slopes--3 percent
Horsecamp cobbly silty clay, 5 to 9 percent slopes--3 percent
Cleghorn sandy loam, 2 to 5 percent slopes--3 percent
Brubeck very cobbly clay, 9 to 30 percent slopes--3 percent

Component Description

Longcreek very cobbly loam and similar soils
Landform: Plateaus
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, basin wildrye, Thurber needlegrass

Typical profile:
Surface rock fragments: About 25 percent cobbles, 5 percent stones
Layer 1--0 to 3 inches; very cobbly loam
Layer 2--3 to 7 inches; very cobbly clay loam
Layer 3--7 to 18 inches; very cobbly clay
Layer 4--18 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA

Component Description

Devada very cobbly loam and similar soils
Landform: Plateaus
Slope: 9 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Low sagebrush, bluegrass, bluebunch wheatgrass, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles, 5 percent stones
Layer 1--0 to 4 inches; very cobbly loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF081CA--Shallow stony loam 9-12

Component Description

Rubble land
Landform: Plateaus
Slope: 15 to 30 percent

Component Properties and Qualities
Runoff: Low

Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Shinnpeak very cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Fan remnants
Typical vegetation: Bluebunch wheatgrass, black sagebrush, other perennial forbs, Sandberg bluegrass, other perennial grasses, bottlebrush squirreltail, other shrubs, Thurber needlegrass
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Horsecamp cobbly silty clay and similar soils
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA

Cleghorn sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, Thurber needlegrass, basin wildrye, Wyoming big sagebrush
Ecological site: R023XF091CA

Brubeck very cobbly clay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Landform: Plateaus
Typical vegetation: Beardless wildrye, western wheatgrass, big sagebrush, rubber rabbitbrush, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

274--Longcreek-Devada-Rubble land complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 4,500 to 6,000
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Longcreek very cobbly loam, 30 to 50 percent slopes--35 percent
Devada very cobbly loam, 30 to 50 percent slopes--30 percent
Rubble land fragmental material, 30 to 50 percent slopes--20 percent
Shinnpeak very cobbly loam, 9 to 15 percent slopes--4 percent
Horsecamp cobbly silty clay, 5 to 9 percent slopes--4 percent
Brubeck very cobbly clay, 15 to 30 percent slopes--4 percent
Cleghorn sandy loam, 9 to 15 percent slopes--3 percent

Component Description

Longcreek very cobbly loam and similar soils
Landform: Mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Thurber needlegrass, basin wildrye, mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush

Typical profile:
Surface rock fragments: About 25 percent cobbles, 5 percent stones
Layer 1--0 to 3 inches; very cobbly loam
Layer 2--3 to 7 inches; very cobbly clay loam
Layer 3--7 to 18 inches; very cobbly clay
Layer 4--18 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 1.5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF082CA--Stony loam 9-12

Component Description

Devada very cobbly loam and similar soils
Landform: Mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Low sagebrush, bluegrass, Thurber needlegrass, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 30 percent cobbles, 5 percent stones
Layer 1--0 to 4 inches; very cobbly loam
Layer 2--4 to 13 inches; gravelly clay
Layer 3--13 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XF081CA

Component Description

Rubble land
Landform: Mountains
Slope: 30 to 50 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Shinnpeak very cobbly loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Landform: Fan remnants
Typical vegetation: Other shrubs, bluebunch wheatgrass, black sagebrush, Thurber needlegrass, bottlebrush squirreltail, Sandberg bluegrass, other perennial grasses, other perennial forbs
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Horsecamp cobbly silty clay and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Big sagebrush, littleleaf horsebrush, western wheatgrass, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass
Ecological site: R023XF084CA--Clay upland 9-16

Brubeck very cobbly clay and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Littleleaf horsebrush, Thurber needlegrass, bottlebrush squirreltail, beardless wildrye, rubber rabbitbrush, big sagebrush, western wheatgrass
Ecological site: R023XF084CA--Clay upland 9-16

Cleghorn sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Landform: Fan remnants
Typical vegetation: Basin wildrye, needleandthread, Wyoming big sagebrush, Thurber needlegrass
Ecological site: R023XF091CA--Loamy upland 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section

"Soil Properties" section

275--Loomis very cobbly loam, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateau
Elevation: 4,500 to 5,800
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Loomis very cobbly loam, 5 to 30 percent slopes--85 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Bucklake very stony loam, 15 to 30 percent slopes--5 percent
Brubeck very cobbly clay, 5 to 30 percent slopes--5 percent

Component Description

Loomis very cobbly loam and similar soils
Landform: Plateaus
Slope: 5 to 30 percent
Parent material: Colluvium derived from basalt over residuum weathered from basalt
Typical vegetation: Thurber needlegrass, bottlebrush squirreltail, Sandberg bluegrass, black sagebrush, bluebunch wheatgrass

Typical profile:
Surface rock fragments: About 25 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly loam
Layer 2--2 to 6 inches; very gravelly clay loam
Layer 3--6 to 11 inches; very gravelly clay
Layer 4--11 to 15 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 8 to 14 inches
Permeability class (root zone): Slow
Available water capacity: About 1.1 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF087CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Bucklake very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, basin wildrye, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush
Ecological site: R023XF082CA--Stony loam 9-12

Brubeck very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Plateaus
Typical vegetation: Littleleaf horsebrush, Thurber needlegrass, rubber rabbitbrush, big sagebrush, western wheatgrass, beardless wildrye, bottlebrush squirreltail
Ecological site: R023XF084CA

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

276--Loomis-Fivesprings association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Mountains
Elevation: 4,500 to 5,800
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Loomis very cobbly loam, 5 to 9 percent slopes--55 percent
Fivesprings very cobbly loam, 9 to 30 percent slopes--30 percent

Longcreek very cobbly loam, 5 to 30 percent slopes--4 percent
Rock outcrop, 15 to 30 percent slopes--3 percent
Tunnison very cobbly clay, 5 to 9 percent slopes--3 percent
Indiano stony fine sandy loam, 5 to 15 percent slopes--3 percent
Devada very cobbly loam, 5 to 15 percent slopes--2 percent

Component Description

Loomis very cobbly loam and similar soils
Landform: Backslopes of mountains, ridges
Slope: 5 to 9 percent
Parent material: Colluvium derived from basalt over residuum weathered from basalt
Typical vegetation: Sandberg bluegrass, black sagebrush, bluebunch wheatgrass, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 35 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly loam
Layer 2--2 to 6 inches; very gravelly clay loam
Layer 3--6 to 11 inches; very gravelly clay
Layer 4--11 to 15 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 8 to 14 inches
Permeability class (root zone): Slow
Available water capacity: About 1.1 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Component Description

Fivesprings very cobbly loam and similar soils
Landform: Backslopes of mountains, toeslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 5 percent stones
Layer 1--0 to 3 inches; very cobbly loam
Layer 2--3 to 8 inches; very gravelly clay loam
Layer 3--8 to 23 inches; very gravelly clay
Layer 4--23 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF082CA--Stony loam 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Longcreek very cobbly loam and similar soils
Composition: 0 to 4 percent
Slope: 5 to 30 percent
Landform: Mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, basin wildrye, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Tunnison very cobbly clay and similar soils
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush, big sagebrush, western wheatgrass, rubber rabbitbrush
Ecological site: R023XF093CA--Shallow clay 9-16

Indiano stony fine sandy loam and similar soils
Composition: 0 to 3 percent

Slope: 5 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, basin wildrye, bluebunch wheatgrass, Wyoming big sagebrush, other perennial forbs, other perennial grasses, antelope bitterbrush, other shrubs
Ecological site: R023XF082CA--Stony loam 9-12

Devada very cobbly loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 15 percent
Landform: Mountains
Typical vegetation: Low sagebrush, bluebunch wheatgrass, Thurber needlegrass, bluegrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

277--Loomis-Rubble land association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Plateaus
Elevation: 4,500 to 5,000
Precipitation: 9 to 12 inches
Air temperature: 46 to 48 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Loomis very cobbly loam, 5 to 30 percent slopes--65 percent
Rubble land fragmental material, 15 to 30 percent slopes--20 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Corral very cobbly loam, 15 to 30 percent slopes--5 percent
Bucklake very stony loam, 15 to 30 percent slopes--5 percent

Component Description

Loomis very cobbly loam and similar soils
Landform: Plateaus
Slope: 5 to 30 percent
Parent material: Colluvium derived from basalt over residuum weathered from basalt
Typical vegetation: Bluebunch wheatgrass, black sagebrush, Sandberg bluegrass, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 25 percent cobbles, 10 percent stones
Layer 1--0 to 2 inches; very cobbly loam
Layer 2--2 to 6 inches; very gravelly clay loam
Layer 3--6 to 11 inches; very gravelly clay
Layer 4--11 to 15 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 8 to 14 inches
Permeability class (root zone): Slow
Available water capacity: About 1.1 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Component Description

Rubble land
Landform: Plateaus
Slope: 15 to 30 percent

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Corral very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Rock pediments

Typical vegetation: Big sagebrush, bluebunch wheatgrass, Thurber needlegrass, basin wildrye
Ecological site: R023XF082CA--Stony loam 9-12

Bucklake very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, basin wildrye, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

278--Madeline-Glean-Devada association, 9 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,000 to 6,500
Precipitation: 10 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Madeline very stony loam, 15 to 30 percent slopes--35 percent
Glean very stony loam, 30 to 50 percent slopes--30 percent
Devada very cobbly loam, 9 to 30 percent slopes--20 percent
Rubble land, 30 to 50 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Sumine very stony loam, 30 to 50 percent slopes--5 percent

Component Description

Madeline very stony loam and similar soils
Landform: Toeslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 20 percent stones
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 9 inches; gravelly clay loam
Layer 3--9 to 16 inches; gravelly clay
Layer 4--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Glean very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 20 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 44 inches; very gravelly loam
Layer 3--44 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e

Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Devada very cobbly loam and similar soils
Landform: Toeslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Shoulders of mountains
Ecological site: None assigned

Sumine very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, basin wildrye, Idaho fescue, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

279--Madeline-Sumine association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,600 to 6,000
Precipitation: 12 to 14 inches
Air temperature: 41 to 45 degrees Fahrenheit
Frost-free period: 70 to 80 days

Composition

Madeline very stony loam, 9 to 30 percent slopes--45 percent
Sumine cobbly loam, 9 to 30 percent slopes--40 percent
Jauriga gravelly loam, 9 to 15 percent slopes--5 percent
Orhood very stony loam, 9 to 30 percent slopes--5 percent
Brubeck very cobbly clay, 15 to 30 percent slopes--5 percent

Component Description

Madeline very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 20 percent stones
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 9 inches; gravelly clay loam
Layer 3--9 to 16 inches; gravelly clay
Layer 4--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Sumine cobbly loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, mountain brome, basin wildrye, Idaho fescue, oceanspray, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles
Layer 1--0 to 5 inches; cobbly loam
Layer 2--5 to 11 inches; very gravelly loam
Layer 3--11 to 24 inches; very cobbly clay loam
Layer 4--24 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Jauriga gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, needlegrass
Ecological site: R021XE176CA--Loam 12-16

Orhood very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--rabbitbrush, Thurber needlegrass, mountain big sagebrush, arrowleaf balsamroot, bluebunch wheatgrass, Lemmon needlegrass, Sandberg bluegrass, Idaho fescue, antelope bitterbrush
Ecological site: R021XE174CA--Stony loam 12-16

Brubeck very cobbly clay and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Typical vegetation: Littleleaf horsebrush, bottlebrush squirreltail, Thurber needlegrass, beardless wildrye, rubber rabbitbrush, big sagebrush, western wheatgrass
Ecological site: R023XF084CA--Clay upland 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

280--Massack loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 4,300 to 4,750
Precipitation: 16 to 20 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 80 to 130 days

Composition

Massack loam, 0 to 2 percent slopes--95 percent
Keddie clay loam, 0 to 2 percent slopes--5 percent

Component Description

Massack loam and similar soils
Landform: Flood plains

Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 33 inches; loam
Layer 2--33 to 60 inches; stratified loamy sand to very fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Moderately rapid
Available water capacity: About 8 inches
Present flooding: Occasional
Present ponding: None
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 3w-2
Nonirrigated land capability: 4w-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Keddie clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated hay and pasture
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

281--Mazuma loamy sand, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 3,990 to 4,000
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mazuma loamy fine sand, 0 to 2 percent slopes--80 percent
Zorravista loamy sand, 0 to 2 percent slopes--10 percent
Honlak loam, 0 to 2 percent slopes--10 percent

Component Description

Mazuma loamy fine sand and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Inland saltgrass, black greasewood, bottlebrush squirreltail, seepweed

Typical profile:
Layer 1--0 to 5 inches; loamy fine sand
Layer 2--5 to 60 inches; stratified gravelly coarse sand to silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Sodicity: Sodic within 40 inches
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2s-6
Nonirrigated land capability: 6s
Ecological site: R023XG050CA--Saline-sodic flat 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Zorravista loamy sand and similar soils
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Dunes
Typical vegetation: Basin big sagebrush, basin wildrye, Indian ricegrass, black greasewood, needleandthread, littleleaf horsebrush
Ecological site: R023XG054CA--Sandy terrace 6-9

Honlak loam and similar soils
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Fan remnants

Typical vegetation: Rush, black greasewood, alkaligrass, beardless wildrye, western wheatgrass, inland saltgrass, bluegrass, basin wildrye
Ecological site: R023XG058CA--Saline-sodic subirrigated 6-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

282--Mazuma fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,050 to 4,100
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mazuma fine sandy loam, 0 to 2 percent slopes--85 percent
Ardep fine sandy loam, 0 to 2 percent slopes--5 percent
Zorravista sand, 0 to 2 percent slopes--5 percent
Calneva silt loam, 0 to 1 percent slopes--5 percent

Component Description

Mazuma fine sandy loam and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Black greasewood, bottlebrush squirreltail, seepweed, shadscale, basin wildrye

Typical profile:
Layer 1--0 to 7 inches; fine sandy loam
Layer 2--7 to 30 inches; sandy loam
Layer 3--30 to 60 inches; stratified gravelly coarse sand to silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Sodicity: Sodic within 40 inches
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2s-6
Nonirrigated land capability: 7s
Ecological site: R023XG050CA--Saline-sodic flat 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ardep fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bud sagebrush, shadscale, bottlebrush squirreltail, black greasewood
Ecological site: R023XG046CA--Sodic flat 6-9

Zorravista sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Dunes
Typical vegetation: Fourwing saltbush, needleandthread, basin big sagebrush, rubber rabbitbrush, basin wildrye, littleleaf horsebrush, black greasewood, Indian ricegrass, spiny hopsage
Ecological site: R023XG049CA--Sand dunes 6-9

Calneva silt loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Landform: Basin floors
Typical vegetation: Shadscale, black greasewood, bottlebrush squirreltail, bud sagebrush
Ecological site: R023XG046CA--Sodic flat 6-9

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

283--McConnel-Mottsville complex, 2 to 9 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,000 to 4,400
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

McConnel gravelly fine sandy loam, 2 to 9 percent slopes--60 percent
Mottsville gravelly loamy coarse sand, 2 to 9 percent slopes--25 percent
Devada very stony loam, 2 to 9 percent slopes--5 percent
McConnel gravelly fine sandy loam, 2 to 9 percent slopes, very stony--4 percent
Zorravista sand, 0 to 2 percent slopes--3 percent
Longcreek very cobbly loam, 5 to 9 percent slopes--3 percent

Component Description

McConnel gravelly fine sandy loam and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from mixed rocks and lacustrine deposits
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, yellow rabbitbrush, spiny hopsage, Indian ricegrass, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Layer 1--0 to 10 inches; gravelly fine sandy loam
Layer 2--10 to 60 inches; stratified extremely gravelly coarse sand to very gravelly sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderately rapid
Salinity: Saline within 40 inches
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 6e
Ecological site: R026XF052CA--Granitic upland 9-12

Component Description

Mottsville gravelly loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from granite
Typical vegetation: Indian ricegrass, antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 17 inches; gravelly loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 6e
Ecological site: R026XF051CA--Granitic fan 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, bluegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

McConnel and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Fan remnants
Typical vegetation: Yellow rabbitbrush, Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass, bottlebrush squirreltail, Indian ricegrass, spiny hopsage
Ecological site: R026XF052CA--Granitic upland 9-12

Zorravista sand and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent

Landform: Dunes
Typical vegetation: Needleandthread, littleleaf horsebrush, black greasewood, basin big sagebrush, rubber rabbitbrush, basin wildrye, fourwing saltbush, spiny hopsage, Indian ricegrass
Ecological site: R023XG049CA--Sand dunes 6-9

Longcreek very cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Thurber needlegrass, basin wildrye, mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush
Ecological site: R023XF082CA--Stony loam 9-12

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

284--McDermott silt loam, 0 to 5 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 4,100
Precipitation: 6 to 9 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

McDermott silt loam, 0 to 5 percent slopes--85 percent
Calnat sandy loam, 0 to 2 percent slopes--4 percent
Stiles clay loam, 0 to 2 percent slopes--4 percent
Standish fine sandy loam, 0 to 2 percent slopes--4 percent
Playas silty clay, 0 to 1 percent slopes--3 percent

Component Description

McDermott silt loam and similar soils
Landform: Lake terraces
Slope: 0 to 5 percent
Parent material: Lacustrine deposits
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 13 inches; silt loam
Layer 2--13 to 19 inches; clay loam
Layer 3--19 to 35 inches; silty clay loam
Layer 4--35 to 50 inches; clay loam
Layer 5--50 to 60 inches; silt loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Sodicity: Sodic within 40 inches
Available water capacity: About 10 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R023XG048CA--Sodic loam 6-9

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calnat sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Bottlebrush squirreltail, black greasewood, basin wildrye, basin big sagebrush
Ecological site: R023XG048CA--Sodic loam 6-9

Stiles clay loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Basin big sagebrush, basin wildrye, black greasewood, bottlebrush squirreltail
Ecological site: R023XG048CA--Sodic loam 6-9

Standish fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Lake terraces
Typical vegetation: Inland saltgrass, black greasewood, rabbitbrush, basin big sagebrush, basin wildrye
Ecological site: R023XG059CA--Saline-sodic loam 6-12

Playas silty clay
Composition: 0 to 3 percent
Slope: 0 to 1 percent
Landform: Playas
Ecological site: None assigned

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

285--Modoc-Truax complex, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Fan piedmont
Elevation: 4,020 to 4,250
Precipitation: 9 to 12 inches

Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Modoc sandy loam, 0 to 2 percent slopes--70 percent
Truax sandy loam, 0 to 2 percent slopes--20 percent
Bobert sandy loam, 0 to 2 percent slopes--4 percent
Ardep sandy loam, 0 to 2 percent slopes--4 percent
Fordney loamy fine sand, 0 to 2 percent slopes--2 percent

Component Description

Modoc sandy loam and similar soils
Landform: Lake terraces
Slope: 0 to 2 percent
Parent material: Lacustrine deposits
Typical vegetation: Bluebunch wheatgrass, basin big sagebrush, basin wildrye, Idaho fescue

Typical profile:
Layer 1--0 to 16 inches; sandy loam
Layer 2--16 to 28 inches; sandy clay loam
Layer 3--28 to 50 inches; indurated
Layer 4--50 to 60 inches; stratified gravelly coarse sandy loam to very fine sandy loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Duripan: 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-8
Nonirrigated land capability: 6e
Ecological site: R021XE186CA--Loamy terrace 12-16

Component Description

Truax sandy loam and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Basin big sagebrush, basin wildrye, antelope bitterbrush, bottlebrush squirreltail, needleandthread, Thurber needlegrass

Typical profile:
Layer 1--0 to 6 inches; sandy loam
Layer 2--6 to 27 inches; sandy clay loam
Layer 3--27 to 41 inches; sandy loam
Layer 4--41 to 52 inches; cemented
Layer 5--52 to 60 inches; stratified gravelly sandy loam to sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Cemented horizon: 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 3e-8
Nonirrigated land capability: 6e
Ecological site: R021XE186CA--Loamy terrace 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Bobert sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Inland saltgrass, rabbitbrush, basin big sagebrush, black greasewood, basin wildrye
Ecological site: R023XG059CA--Saline-sodic loam 6-12

Ardep sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Landform: Lake terraces

Typical vegetation: Littleleaf horsebrush, basin wildrye, fourwing saltbush, basin big sagebrush, needleandthread, Indian ricegrass
Ecological site: R023XG054CA--Sandy terrace 6-9

Fordney loamy fine sand and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

286--Mottsville loamy coarse sand, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmonts
Elevation: 4,050 to 4,400
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville loamy coarse sand, 0 to 2 percent slopes--85 percent
Springmeyer sandy loam, 0 to 2 percent slopes--5 percent
Chimney gravelly loamy coarse sand, 2 to 5 percent slopes--5 percent
Calpine sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Mottsville loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, bottlebrush squirreltail, other perennial forbs, other perennial grasses, other shrubs

Typical profile:
Layer 1--0 to 17 inches; loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Negligible
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-4
Nonirrigated land capability: 4e-4
Ecological site: R021XE181CA--Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Springmeyer sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fans remnants
Typical vegetation: Other shrubs, bottlebrush squirreltail, antelope bitterbrush, Thurber needlegrass, other annual forbs, big sagebrush, yellow rabbitbrush, basin wildrye, other perennial forbs, other perennial grasses
Ecological site: R021XE186CA--Loamy terrace 12-16

Chimney gravelly loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--Idaho fescue, bottlebrush squirreltail, Columbia needlegrass, squawcarpet, mountain big sagebrush, antelope bitterbrush
Ecological site: None assigned

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Western needlegrass, mountain big sagebrush, beardless wildrye, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R021XE181CA--Granitic fan 12-16

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat, urban development

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

287--Mottsville loamy coarse sand, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,200 to 4,400
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville loamy coarse sand, 2 to 9 percent slopes--85 percent
Springmeyer sandy loam, 2 to 5 percent slopes--4 percent
Calpine sandy loam, 2 to 9 percent slopes--4 percent
Janile gravelly loamy coarse sand, 30 to 50 percent slopes--4 percent
Artray sandy loam, 2 to 9 percent slopes--3 percent

Component Description

Mottsville loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent
Parent material: Alluvium derived from granite
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, bottlebrush squirreltail, other perennial forbs, other perennial grasses, other shrubs

Typical profile:
Layer 1--0 to 17 inches; loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 4e-4
Ecological site: R021XE181CA--Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Springmeyer sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Landform: Fans remnants
Typical vegetation: Thurber needlegrass, other shrubs, other perennial grasses, antelope bitterbrush, bottlebrush squirreltail, other perennial forbs, basin wildrye, yellow rabbitbrush, big sagebrush, other annual forbs
Ecological site: R021XE186CA--Loamy terrace 12-16

Calpine and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Landform: Alluvial fans
Typical vegetation: Antelope bitterbrush, mountain big sagebrush, Indian ricegrass, needleandthread, beardless wildrye, western needlegrass
Ecological site: R021XE181CA

Janile and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush, bottlebrush squirreltail, Columbia needlegrass
Ecological site: None assigned

Artray sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat, and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section

"Engineering" section
"Soil Properties" section

288--Mottsville gravelly loamy coarse sand, 0 to 2 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,200 to 4,400
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville gravelly loamy coarse sand, 0 to 2 percent slopes--80 percent
Xerolls loamy coarse sand, 0 to 1 percent slopes--10 percent
Calpine sandy loam, 0 to 2 percent slopes--10 percent

Component Description

Mottsville gravelly loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite
Typical vegetation: Indian ricegrass, antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 17 inches; gravelly loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Negligible
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-4
Nonirrigated land capability: 6e
Ecological site: R026XF051CA--Granitic fan 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Xerolls loamy coarse sand and similar soils
Composition: 0 to 10 percent
Slope: 0 to 1 percent
Landform: Lakeshores
Ecological site: None assigned

Calpine and similar soils
Composition: 0 to 10 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Western needlegrass, mountain big sagebrush, beardless wildrye, needleandthread, antelope bitterbrush, Indian ricegrass
Ecological site: R021XE181CA--Granitic fan 12-16

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

289--Mottsville gravelly loamy coarse sand, 2 to 9 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,100 to 5,000
Precipitation: 9 to 12 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville gravelly loamy coarse sand, 2 to 9 percent slopes--80 percent
Springmeyer loam, 2 to 9 percent slopes--5 percent
Longcreek very stony loam, 30 to 60 percent slopes--5 percent
Devada very stony loam, 2 to 5 percent slopes--5 percent
Corral loam, 2 to 9 percent slopes--5 percent

Component Description

Mottsville gravelly loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 2 to 9 percent

Parent material: Alluvium derived from granite
Typical vegetation: Indian ricegrass, antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 17 inches; gravelly loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 6e
Ecological site: R026XF051CA--Granitic fan 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Springmeyer loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Fans remnants
Typical vegetation: Needleandthread, big sagebrush, Thurber needlegrass, basin wildrye
Ecological site: R023XF091CA--Loamy upland 9-12

Longcreek very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 60 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Antelope bitterbrush, basin wildrye, mountain big sagebrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent, south aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Thurber needlegrass, low sagebrush, bluegrass, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Corral loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Escarpments
Typical vegetation: Basin wildrye, big sagebrush, needleandthread, Thurber needlegrass
Ecological site: R023XF091CA--Loamy upland 9-12

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing, livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

290--Mottsville gravelly loamy coarse sand, 9 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmonts
Elevation: 4,000 to 4,200
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville gravelly loamy coarse sand, 9 to 15 percent slopes--85 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Chimney gravelly loamy coarse sand, 15 to 30 percent slopes--5 percent
Calpine sandy loam, 15 to 30 percent slopes--5 percent

Component Description

Mottsville gravelly loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 9 to 15 percent
Parent material: Alluvium derived from granite
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, bottlebrush squirreltail, other perennial forbs, other perennial grasses, other shrubs

Typical profile:
Layer 1--0 to 17 inches; gravelly loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 6e
Ecological site: R021XE181CA--Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Chimney gravelly loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Forest canopy--California black oak, Jeffrey pine; Forest understory--antelope bitterbrush, mountain big sagebrush, Columbia needlegrass, squawcarpet, Idaho fescue, bottlebrush squirreltail
Ecological site: None assigned

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Alluvial fans
Typical vegetation: Needleandthread, mountain big sagebrush, Indian ricegrass, western needlegrass, beardless wildrye, antelope bitterbrush
Ecological site: R021XE181CA--Granitic fan 12-16

Management

Major uses: Livestock grazing, wildlife habitat, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

291--Mottsville gravelly loamy coarse sand, 15 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,200 to 4,400
Precipitation: 11 to 13 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville gravelly loamy coarse sand, 15 to 30 percent slopes--90 percent
Mottsville gravelly loamy coarse sand, 15 to 30 percent slopes, eroded--10 percent

Component Description

Mottsville gravelly loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 15 to 30 percent
Parent material: Alluvium derived from granite
Typical vegetation: Mountain big sagebrush, Indian ricegrass, antelope bitterbrush, needleandthread, bottlebrush squirreltail, other perennial forbs, other perennial grasses, other shrubs

Typical profile:
Layer 1--0 to 17 inches; gravelly loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Irrigated land capability: 4e-1
Nonirrigated land capability: 6e
Ecological site: R021XE181CA--Granitic fan 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville eroded and similar soils
Composition: 0 to 10 percent

Slope: 15 to 30 percent
Landform: Fan remnants
Typical vegetation: Antelope bitterbrush, needleandthread, bottlebrush squirreltail, other perennial forbs, other perennial grasses, other shrubs, mountain big sagebrush, Indian ricegrass
Ecological site: R021XE181CA

Management

Major uses: Livestock grazing, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

292--Mottsville-Galeppi association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Fan piedmont
Elevation: 4,100 to 4,200
Precipitation: 10 to 15 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Mottsville gravelly loamy coarse sand, 15 to 50 percent slopes--60 percent
Galeppi sandy loam, 15 to 50 percent slopes--30 percent
Mottsville gravelly loamy coarse sand, 15 to 30 percent slopes, eroded--10 percent

Component Description

Mottsville gravelly loamy coarse sand and similar soils
Landform: Fan remnants
Slope: 15 to 50 percent
Parent material: Alluvium derived from granite
Typical vegetation: Indian ricegrass, antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail

Typical profile:
Layer 1--0 to 17 inches; gravelly loamy coarse sand
Layer 2--17 to 60 inches; stratified gravelly coarse sand to loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Rapid
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R026XF051CA--Granitic fan 9-12

Component Description

Galeppi sandy loam and similar soils
Landform: Fan remnants
Slope: 15 to 50 percent
Parent material: Alluvium derived from granite
Typical vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, green ephedra, Anderson peachbrush, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 18 inches; sandy loam
Layer 2--18 to 36 inches; sandy clay loam
Layer 3--36 to 52 inches; sandy loam
Layer 4--52 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R026XF052CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville eroded and similar soils
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Landform: Fan remnants
Typical vegetation: Desert needlegrass, desert peach, needleandthread, bottlebrush squirreltail, antelope bitterbrush, Indian ricegrass, basin big sagebrush
Ecological site: R026XF051CA--Granitic fan 9-12

Management

Major uses: Livestock grazing, wildlife habitat

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

293--Mountmed peat, 0 to 1 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,200 to 5,300
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Mountmed peat, 0 to 1 percent slopes--85 percent
Keddie loam, 0 to 1 percent slopes--8 percent
Inville very gravelly sandy loam, 0 to 1 percent slopes--7 percent

Component Description

Mountmed peat and similar soils
Landform: Flood plains
Slope: 0 to 1 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 6 inches; peat
Layer 2--6 to 16 inches; clay
Layer 3--16 to 38 inches; clay
Layer 4--38 to 47 inches; clay loam
Layer 5--47 to 60 inches; stratified sand to very gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 9 inches
Present flooding: None
Water table: Present
Natural drainage class: Very poorly drained

Interpretive Groups
Nonirrigated land capability: 5w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Keddie loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 1 percent
Landform: Alluvial fans
Ecological site: None assigned

Inville very gravelly sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 1 percent
Landform: Alluvial fans
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--snowbrush ceanothus, whitethorn ceanothus, manzanita
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated grass hay, and pasture, and wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

294--Mountmed loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,200 to 5,300
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Mountmed loam, 0 to 2 percent slopes--85 percent
Inville very gravelly sandy loam, 0 to 2 percent slopes--8 percent
Keddie loam, 0 to 2 percent slopes--7 percent

Component Description

Mountmed loam and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 6 inches; loam

Layer 2--6 to 35 inches; clay
Layer 3--35 to 60 inches; stratified sand to very gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 7 inches
Present flooding: Frequent
Water table: Present
Natural drainage class: Very poorly drained

Interpretive Groups
Nonirrigated land capability: 5w
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Inville very gravelly sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus
Ecological site: None assigned

Keddie loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated hay and pasture, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
“Engineering” section
“Soil Properties” section

295--Mountmed clay loam, 0 to 3 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,000 to 5,200
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Mountmed clay loam, 0 to 3 percent slopes--90 percent
Mountmed clay loam, 0 to 3 percent slopes, nonflooded--6 percent
Keddie loam, 0 to 3 percent slopes--4 percent

Component Description

Mountmed clay loam and similar soils
Landform: Flood plains
Slope: 0 to 3 percent
Parent material: Alluvium derived from mixed rocks

Typical profile:
Layer 1--0 to 12 inches; clay loam
Layer 2--12 to 31 inches; clay
Layer 3--31 to 60 inches; stratified very gravelly sandy loam to extremely gravelly sandy clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 8 inches
Present flooding: Frequent
Present ponding: Frequent
Water table: Present
Natural drainage class: Very poorly drained

Interpretive Groups
Irrigated land capability: 4w-1
Nonirrigated land capability: 4w-1
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mountmed clay loam and similar soils
Composition: 0 to 6 percent
Slope: 0 to 3 percent
Landform: Flood plain
Ecological site: None assigned

Keddie loam and similar soils
Composition: 0 to 4 percent

Slope: 0 to 3 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Livestock grazing, irrigated hay and pasture, urban development, wildlife habitat
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

296--Newlands-Hapgood association, 5 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,000 to 7,000
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 50 to 70 days

Composition

Newlands stony loam, 5 to 30 percent slopes--50 percent
Hapgood stony loam, 5 to 30 percent slopes--40 percent
Home Camp stony loam, 5 to 30 percent slopes--5 percent
Ninemile very stony loam, 5 to 30 percent slopes--5 percent

Component Description

Newlands stony loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 5 percent cobbles, 5 percent stones
Layer 1--0 to 8 inches; stony loam
Layer 2--8 to 43 inches; gravelly clay loam
Layer 3--43 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Hapgood stony loam and similar soils
Landform: Backslopes of mountains, ridges
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, arrowleaf balsamroot, basin wildrye, Idaho fescue, lupine, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 5 percent stones
Layer 1--0 to 4 inches; stony loam
Layer 2--4 to 41 inches; very gravelly loam
Layer 3--41 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderate
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Home Camp stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent, north aspect
Landform: Backslopes of mountains

Typical vegetation: Antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass, needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Ninemile very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Backslopes of plateaus, summits of plateaus
Typical vegetation: Idaho fescue, bluebunch wheatgrass, low sagebrush, Thurber needlegrass, bottlebrush squirreltail, antelope bitterbrush, bluegrass, balsamroot
Ecological site: R021XE173CA--Shallow stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

297--Ninemile-Home Camp-Newlands association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,000 to 7,000
Precipitation: 12 to 16 inches
Air temperature: 42 to 44 degrees Fahrenheit
Frost-free period: 50 to 70 days

Composition

Ninemile very stony loam, 2 to 15 percent slopes--45 percent
Home Camp stony loam, 5 to 30 percent slopes--25 percent
Newlands stony loam, 5 to 30 percent slopes--20 percent
Rubble land, 15 to 30 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--5 percent

Component Description

Ninemile very stony loam and similar soils
Landform: Ridges
Slope: 2 to 15 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, low sagebrush, balsamroot, Idaho fescue, bluegrass, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 25 percent stones
Layer 1--0 to 2 inches; very stony loam
Layer 2--2 to 11 inches; clay
Layer 3--11 to 18 inches; gravelly clay
Layer 4--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Impermeable
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Home Camp stony loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 5 percent stones
Layer 1--0 to 3 inches; stony loam
Layer 2--3 to 9 inches; cobbly loam
Layer 3--9 to 17 inches; very cobbly clay loam
Layer 4--17 to 28 inches; very gravelly clay
Layer 5--28 to 32 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Newlands stony loam and similar soils
Landform: Toeslopes of mountains
Slope: 5 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 5 percent cobbles, 5 percent stones
Layer 1--0 to 8 inches; stony loam
Layer 2--8 to 43 inches; gravelly clay loam
Layer 3--43 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 40 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
“Engineering” section
“Soil Properties” section

298--Ninemile-Petescreek-Fiddler association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 6,000 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Ninemile very stony loam, 2 to 5 percent slopes--30 percent
Petescreek gravelly loam, 5 to 15 percent slopes--30 percent
Fiddler very stony loam, 15 to 30 percent slopes--25 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Fredonyer very stony loam, 15 to 30 percent slopes--5 percent
Devada very stony loam, 5 to 30 percent slopes--5 percent

Component Description

Ninemile very stony loam and similar soils
Landform: Plateaus
Slope: 2 to 5 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, low sagebrush, balsamroot, Idaho fescue, bluegrass, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 30 percent stones
Layer 1--0 to 2 inches; very stony loam
Layer 2--2 to 11 inches; clay
Layer 3--11 to 18 inches; gravelly clay
Layer 4--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Impermeable
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Petescreek gravelly loam and similar soils
Landform: Backslopes of plateaus
Slope: 5 to 15 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 2 percent stones
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Fiddler very stony loam and similar soils
Landform: Backslopes of plateaus
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, Nevada bluegrass, Sandberg bluegrass, bottlebrush squirreltail, Idaho fescue, mountain big sagebrush, Thurber needlegrass, arrowleaf balsamroot, antelope bitterbrush, rabbitbrush
Site index: Western juniper--20 at an age base of 50 years

Typical profile:
Surface rock fragments: About 20 percent cobbles, 15 percent stones
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 14 inches; very cobbly clay loam
Layer 3--14 to 23 inches; clay
Layer 4--23 to 28 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Fredonyer very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush
Ecological site: R021XE178CA--Very stony loam 12-16

Devada very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent, south aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Thurber needlegrass, low sagebrush, bluebunch wheatgrass, Idaho fescue, bluegrass, antelope bitterbrush
Ecological site: R021XE173CA--Shallow stony loam 12-16

Management

Major uses: Livestock grazing, juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

299--Ninemile-Weste complex, 0 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,200 to 5,300
Precipitation: 30 to 35 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Ninemile extremely cobbly loam, 0 to 2 percent slopes--50 percent
Weste very gravelly sandy loam, 2 to 9 percent slopes--35 percent
Mountmed clay loam, 0 to 2 percent slopes--8 percent
Rock outcrop, 5 to 9 percent slopes--7 percent

Component Description

Ninemile extremely cobbly loam and similar soils
Landform: Backslopes of plateaus, summits of plateaus
Slope: 0 to 2 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, low sagebrush, balsamroot, Idaho fescue, bluegrass, antelope bitterbrush, bottlebrush squirreltail, Thurber needlegrass

Typical profile:
Surface rock fragments: About 35 percent cobbles, 15 percent stones
Layer 1--0 to 2 inches; extremely cobbly loam
Layer 2--2 to 11 inches; clay
Layer 3--11 to 18 inches; gravelly clay
Layer 4--18 to 22 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Impermeable
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA

Component Description

Weste very gravelly sandy loam and similar soils
Landform: Backslopes of plateaus
Slope: 2 to 9 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, sugar pine, white fir
Site index: Jeffrey pine--101 at an age base of 100 years
Site index: White fir--53 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 70

Typical profile:
Layer 1--0 to 14 inches; very gravelly sandy loam
Layer 2--14 to 24 inches; very gravelly loam
Layer 3--24 to 34 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mountmed clay loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent

Landform: Flood plains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 7 percent
Slope: 5 to 9 percent
Landform: Ridges
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

300--Observation-Searles-Madeline association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains, plateau
Elevation: 5,600 to 6,000
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Observation very stony loam, 9 to 30 percent slopes--35 percent
Searles very stony loam, 9 to 30 percent slopes--30 percent
Madeline very stony loam, 9 to 30 percent slopes--20 percent
Glean very stony loam, 9 to 30 percent slopes--5 percent
Ninemile very stony loam, 9 to 15 percent slopes--4 percent
Rubble land, 15 to 30 percent slopes--3 percent
Puls very stony loam, 5 to 9 percent slopes--3 percent

Component Description

Observation very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 12 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 9 inches; loam
Layer 3--9 to 18 inches; clay loam
Layer 4--18 to 35 inches; gravelly clay
Layer 5--35 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s

Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Madeline very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 25 percent stones
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 9 inches; gravelly clay loam
Layer 3--9 to 16 inches; gravelly clay
Layer 4--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Glean very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Ninemile very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Landform: Plateaus
Typical vegetation: Bluegrass, bluebunch wheatgrass, Idaho fescue, balsamroot, low sagebrush, antelope bitterbrush, Thurber needlegrass, bottlebrush squirreltail
Ecological site: R021XE173CA--Shallow stony loam 12-16

Rubble land
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Puls very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Idaho fescue, low sagebrush, bluebunch wheatgrass, bluegrass, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

301--Observation-Searles-Madeline association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,000 to 6,700
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Observation very stony loam, 30 to 50 percent slopes--35 percent
Searles very stony loam, 30 to 50 percent slopes--30 percent
Madeline very stony loam, 30 to 50 percent slopes--20 percent
Rubble land, 30 to 50 percent slopes--5 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Glean very stony loam, 30 to 50 percent slopes--5 percent

Component Description

Observation very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect

Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 25 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 9 inches; loam
Layer 3--9 to 18 inches; clay loam
Layer 4--18 to 35 inches; gravelly clay
Layer 5--35 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 20 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Madeline very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 20 percent stones
Layer 1--0 to 5 inches; very stony loam
Layer 2--5 to 9 inches; gravelly clay loam
Layer 3--9 to 16 inches; gravelly clay
Layer 4--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent

Landform: Mountains
Ecological site: None assigned

Glean very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, bluebunch wheatgrass, antelope bitterbrush, Idaho fescue, needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

302--Orhood very stony sandy loam, 5 to 15 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 4,200 to 5,600
Precipitation: 12 to 16 inches
Air temperature: 44 to 50 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Orhood very stony sandy loam, 5 to 15 percent slopes--80 percent
Incy fine sand, 5 to 15 percent slopes--8 percent
Searles very stony loam, 9 to 15 percent slopes--6 percent
Puls very stony loam, 5 to 9 percent slopes--6 percent

Component Description

Orhood very stony sandy loam and similar soils
Landform: Toeslopes of mountains
Slope: 5 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, Lemmon needlegrass, Idaho fescue, antelope bitterbrush, Sandberg bluegrass, arrowleaf balsamroot, Thurber needlegrass
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony sandy loam
Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Incy fine sand and similar soils
Composition: 0 to 8 percent
Slope: 5 to 15 percent
Landform: Dunes
Typical vegetation: Western wheatgrass, Wyoming big sagebrush, arrowleaf balsamroot, Indian ricegrass, antelope bitterbrush, sand dropseed, needleandthread
Ecological site: R026XF022CA--Granitic sand 9-12

Searles very stony loam and similar soils
Composition: 0 to 6 percent
Slope: 9 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Thurber needlegrass, antelope bitterbrush
Ecological site: R021XE179CA--Warm stony loam 12-16

Puls very stony loam and similar soils
Composition: 0 to 6 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Management

Major uses: Livestock grazing, urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section

"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

303--Orr sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 26
Landscape: Fan piedmont
Elevation: 4,200 to 4,300
Precipitation: 9 to 12 inches
Air temperature: 49 to 51 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Orr sandy loam, 0 to 2 percent slopes--85 percent
Calpine sandy loam, 0 to 2 percent slopes--5 percent
Mottsville gravelly loamy coarse sand, 0 to 2 percent slopes--5 percent
Bobert sandy loam, 0 to 2 percent slopes--3 percent
Galeppi sandy loam, 2 to 5 percent slopes--2 percent

Component Description

Orr sandy loam and similar soils
Landform: Fan remnants
Slope: 0 to 2 percent
Parent material: Alluvium derived from mixed rocks
Typical vegetation: Wyoming big sagebrush, yellow rabbitbrush, beardless wildrye, Indian ricegrass, Anderson peachbrush, antelope bitterbrush, needleandthread

Typical profile:
Surface rock fragments: About 5 percent cobbles, 20 percent stones
Layer 1--0 to 8 inches; sandy loam
Layer 2--8 to 21 inches; sandy clay loam
Layer 3--21 to 30 inches; sandy loam
Layer 4--30 to 36 inches; sandy loam
Layer 5--36 to 60 inches; loamy sand

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Permeability class (root zone): Moderately slow
Available water capacity: About 7 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Irrigated land capability: 2e-1
Nonirrigated land capability: 6e
Ecological site: R026XF051CA--Granitic fan 9-12

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Calpine and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Alluvial fans
Typical vegetation: Western needlegrass, Indian ricegrass, antelope bitterbrush, needleandthread, beardless wildrye, mountain big sagebrush
Ecological site: R021XE181CA--Granitic fan 12-16

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail, Indian ricegrass
Ecological site: R026XF051CA--Granitic fan 9-12

Bobert sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Landform: Stream terraces
Typical vegetation: Black greasewood, basin wildrye, inland saltgrass, basin big sagebrush, rabbitbrush
Ecological site: R023XG059CA--Saline-sodic loam 6-12

Galeppi sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent
Landform: Fan remnants
Typical vegetation: Needleandthread, Indian ricegrass, Anderson peachbrush, antelope bitterbrush, beardless wildrye, rubber rabbitbrush, Wyoming big sagebrush
Ecological site: R026XF051CA--Granitic fan 9-12

Management

Major uses: Irrigated crops, alfalfa hay, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

304--Outland very stony loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,200 to 6,200
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Outland very stony loam, 30 to 50 percent slopes--75 percent
Rock outcrop, 30 to 50 percent slopes--10 percent
Rubble land, 30 to 50 percent slopes--10 percent
Eaglelake very gravelly loam, 30 to 50 percent slopes--5 percent

Component Description

Outland very stony loam and similar soils
Landform: Mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--greenleaf manzanita, Sierra chinkapin, whitethorn ceanothus, squawcarpet, snowbrush ceanothus, antelope bitterbrush, sharpleaf snowberry, snowberry
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Surface rock fragments: About 5 percent cobbles, 20 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 18 inches; very cobbly sandy loam
Layer 3--18 to 36 inches; extremely cobbly loam
Layer 4--36 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Landform: Shoulders of canyons, shoulders of mountains
Ecological site: None assigned

Rubble land
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Eaglelake very gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--greenleaf manzanita, whitethorn ceanothus, snowbrush ceanothus, needlegrass, other perennial grasses
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

305--Outland complex, 5 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Plateau
Elevation: 5,400 to 6,400
Precipitation: 20 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Outland gravelly sandy loam, 5 to 15 percent slopes--60 percent

Outland very stony loam, 15 to 30 percent slopes--30 percent
Eaglelake very gravelly loam, 15 to 30 percent slopes--5 percent
Rock outcrop, 15 to 30 percent slopes--5 percent

Component Description

Outland gravelly sandy loam and similar soils
Landform: Summits of plateaus, backslopes of plateaus
Slope: 5 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--greenleaf manzanita, Sierra chinkapin, whitethorn ceanothus, squawcarpet, snowbrush ceanothus, sharpleaf snowberry, snowberry
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Layer 1--0 to 4 inches; gravelly sandy loam
Layer 2--4 to 18 inches; very gravelly loam
Layer 3--18 to 36 inches; extremely gravelly loam
Layer 4--36 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Outland very stony loam and similar soils
Landform: Plateaus
Slope: 15 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Jeffrey pine, ponderosa pine, white fir; Forest understory--greenleaf manzanita, Sierra chinkapin, whitethorn ceanothus, squawcarpet, snowbrush ceanothus, antelope bitterbrush, sharpleaf snowberry, snowberry
Site index: Jeffrey pine--88 at an age base of 100 years
Site index: White fir--47 at an age base of 50 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Surface rock fragments: About 10 percent cobbles, 20 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 18 inches; very cobbly sandy loam
Layer 3--18 to 36 inches; extremely cobbly loam
Layer 4--36 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 3 inches thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Eaglelake very gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, sugar pine, white fir; Forest understory--other perennial grasses, needlegrass, snowbrush ceanothus, whitethorn ceanothus, greenleaf manzanita
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Plateaus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

306--Outland-Penstock complex, 15 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,900 to 5,500
Precipitation: 25 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Outland very stony loam, 15 to 30 percent slopes--60 percent
Penstock very gravelly sandy loam, 15 to 30 percent slopes--25 percent
Deadwood very gravelly sandy loam, 15 to 30 percent slopes--8 percent
Easte very gravelly sandy loam, 15 to 30 percent slopes--7 percent

Component Description

Outland very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine; Forest understory--greenleaf manzanita, Sierra chinkapin, whitethorn ceanothus, squawcarpet, snowbrush ceanothus, antelope bitterbrush, sharpleaf snowberry, snowberry
Site index: Douglas fir--83 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 55

Typical profile:
Surface rock fragments: About 10 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 18 inches; very cobbly sandy loam
Layer 3--18 to 36 inches; extremely cobbly loam
Layer 4--36 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Penstock very gravelly sandy loam and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--manzanita, snowbrush ceanothus, whitethorn ceanothus, needlegrass, mountain brome
Site index: Douglas fir--92 at an age base of 100 years
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--58 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Layer 1--0 to 12 inches; very gravelly sandy loam
Layer 2--12 to 63 inches; very gravelly loam
Layer 3--63 to 73 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 61 to 73 inches
Permeability class (root zone): Moderate
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Deadwood very gravelly sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine, Forest understory--California nutmeg, greenleaf manzanita, pinemat manzanita
Ecological site: None assigned

Easte very gravelly sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--greenleaf manzanita, needlegrass, other perennial grasses, whitethorn ceanothus, snowbrush ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

307--Outland-Penstock complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,900 to 5,500
Precipitation: 25 to 30 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Outland very stony loam, 30 to 50 percent slopes--60 percent
Penstock very gravelly sandy loam, 30 to 50 percent slopes--25 percent
Fiddler, 30 to 50 percent slopes--8 percent
Easte, 30 to 50 percent slopes--7 percent

Component Description

Outland very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, ponderosa pine; Forest understory--greenleaf manzanita, Sierra chinkapin, whitethorn ceanothus, squawcarpet, snowbrush ceanothus, antelope bitterbrush, sharpleaf snowberry, snowberry
Site index: Douglas fir--83 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 5

Typical profile:
Surface rock fragments: About 10 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 18 inches; very cobbly sandy loam
Layer 3--18 to 36 inches; extremely cobbly loam
Layer 4--36 to 46 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Component Description

Penstock very gravelly sandy loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--manzanita, snowbrush ceanothus, whitethorn ceanothus, needlegrass, mountain brome
Site index: Douglas fir--92 at an age base of 100 years
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--58 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Layer 1--0 to 12 inches; very gravelly sandy loam

Layer 2--12 to 63 inches; very gravelly loam
Layer 3--63 to 73 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 61 to 73 inches
Permeability class (root zone): Moderate
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fiddler very stony loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Landform: Ridges
Ecological site: None assigned

Easte deep to bedrock and similar soils
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Timber production, watershed, wildlife habitat, and recreation
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

308--Papeek clay loam, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Hills
Elevation: 4,700 to 5,000
Precipitation: 20 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Papeek clay loam, 9 to 30 percent slopes--85 percent
Ulhalf very gravelly sandy loam, 9 to 30 percent slopes--8 percent
Papeek clay loam, 15 to 30 percent slopes, eroded--7 percent

Component Description

Papeek clay loam and similar soils
Landform: Toeslopes of hills
Slope: 9 to 30 percent
Parent material: Colluvium derived from metasedimentary rock and residuum weathered from metasedimentary rock
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush
Site index: Jeffrey pine--79 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 51

Typical profile:
Layer 1--0 to 3 inches; clay loam
Layer 2--3 to 24 inches; clay
Layer 3--24 to 33 inches; sandy clay loam
Layer 4--33 to 43 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ulhalf very gravelly sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 9 to 30 percent

Landform: Toeslopes of plateaus
Typical vegetation: Forest canopy--Jeffrey pine, incense cedar, ponderosa pine; Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush
Ecological site: None assigned

Papeek clay loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Landform: Toeslopes of hills
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

309--Papeek cobbly clay loam, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,200 to 5,800
Precipitation: 20 to 25 inches
Air temperature: 48 to 50 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Papeek clay loam, 30 to 50 percent slopes--95 percent
Deadwood very gravelly sandy loam, 30 to 50 percent slopes--5 percent

Component Description

Papeek clay loam and similar soils
Landform: Mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metasedimentary rock and residuum weathered from metasedimentary rock
Typical vegetation: Forest canopy--Jeffrey pine, Forest understory--mountain big sagebrush, Idaho fescue, antelope bitterbrush
Site index: Jeffrey pine--79 at an age base of 100 years
Additional forest note: Dunning site class: III
Additional forest note: Cactos site index: 51

Typical profile:
Layer 1--0 to 3 inches; clay loam
Layer 2--3 to 24 inches; clay
Layer 3--24 to 33 inches; sandy clay loam
Layer 4--33 to 43 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very high
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Deadwood very gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine, Forest understory--California nutmeg, greenleaf manzanita, pinemat manzanita
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Forest land" section
"Engineering" section
"Soil Properties" section

310--Penstock-Deadwood association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains

Elevation: 5,200 to 5,600
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Penstock very gravelly sandy loam, 9 to 30 percent slopes--65 percent
Deadwood very gravelly sandy loam, 9 to 30 percent slopes--25 percent
Rock outcrop, 15 to 30 percent slopes--5 percent
Scaribou very gravelly loam, 9 to 30 percent slopes--5 percent

Component Description

Penstock very gravelly sandy loam and similar soils
Landform: Mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--manzanita, snowbrush ceanothus, whitethorn ceanothus, needlegrass, mountain brome
Site index: Douglas fir--92 at an age base of 100 years
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--58 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Layer 1--0 to 12 inches; very gravelly sandy loam
Layer 2--12 to 63 inches; very gravelly loam
Layer 3--63 to 73 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 61 to 73 inches
Permeability class (root zone): Moderate
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Deadwood very gravelly sandy loam and similar soils
Landform: Ridges
Slope: 9 to 30 percent
Parent material: Colluvium derived from metasedimentary rock and residuum weathered from metasedimentary rock
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine, Forest understory--pinemat manzanita, greenleaf manzanita, California nutmeg
Site index: Ponderosa pine--40 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 46

Typical profile:
Layer 1--0 to 9 inches; very gravelly sandy loam
Layer 2--9 to 16 inches; extremely gravelly sandy loam
Layer 3--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 0.6 inch
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Ridges
Ecological site: None assigned

Scaribou very gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--mountain brome, needlegrass, snowbrush ceanothus, manzanita, whitethorn ceanothus
Ecological site: None assigned

Management

Major uses: Timber production, livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

311--Penstock-Deadwood-Rock outcrop association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,400 to 5,800
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Penstock very gravelly sandy loam, 30 to 50 percent slopes--50 percent
Deadwood very gravelly sandy loam, 30 to 50 percent slopes--20 percent
Rock outcrop unweathered bedrock, 15 to 50 percent slopes--15 percent
Weste very gravelly sandy loam, 30 to 50 percent slopes--8 percent
Tahand gravelly sandy loam, 30 to 50 percent slopes--7 percent

Component Description

Penstock very gravelly sandy loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--manzanita, snowbrush ceanothus, whitethorn ceanothus, needlegrass, mountain brome
Site index: Douglas fir--92 at an age base of 100 years
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--58 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Layer 1--0 to 12 inches; very gravelly sandy loam
Layer 2--12 to 63 inches; very gravelly loam
Layer 3--63 to 73 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 61 to 73 inches
Permeability class (root zone): Moderate
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Deadwood very gravelly sandy loam and similar soils
Landform: Ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from metasedimentary rock and residuum weathered from metasedimentary rock
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine, Forest understory--pinemat manzanita, greenleaf manzanita, California nutmeg
Site index: Ponderosa pine--40 at an age base of 100 years
Additional forest note: Dunning site class: IV
Additional forest note: Cactos site index: 46

Typical profile:
Layer 1--0 to 9 inches; very gravelly sandy loam
Layer 2--9 to 16 inches; extremely gravelly sandy loam
Layer 3--16 to 20 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 10 to 20 inches
Permeability class (root zone): Moderately rapid
Available water capacity: About 0.6 inch
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Rock outcrop
Landform: Mountains
Slope: 15 to 50 percent

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 60 inches

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Weste very gravelly sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--greenleaf manzanita, squawcarpet, whitethorn ceanothus
Ecological site: None assigned

Tahand and similar soils
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Landform: Mountains
Typical vegetation: Forest canopy--Jeffrey pine, white fir
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

312--Penstock-Scaribou complex, 5 to 30 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,100 to 6,000
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Penstock very gravelly loam, 5 to 30 percent slopes--50 percent
Scaribou very gravelly loam, 5 to 30 percent slopes--40 percent
Inville very gravelly loam, 2 to 5 percent slopes--5 percent
Aquolls gravelly sandy loam, 0 to 2 percent slopes--5 percent

Component Description

Penstock stony loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--whitethorn ceanothus, snowbrush ceanothus, needlegrass, sharpleaf snowberry, manzanita
Site index: Douglas fir--92 at an age base of 100 years
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--58 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Surface rock fragments: About 10 percent stones
Layer 1--0 to 12 inches; very gravelly loam
Layer 2--12 to 63 inches; very gravelly loam
Layer 3--63 to 73 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Medium
Depth to restrictive feature: Bedrock (paralithic): 61 to 73 inches
Permeability class (root zone): Moderate
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Scaribou stony loam and similar soils
Landform: Backslopes of mountains
Slope: 5 to 30 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus, sharpleaf snowberry, needlegrass, mountain brome
Site index: Douglas fir--102 at an age base of 100 years

Site index: Jeffrey pine--96 at an age base of 100 years
Site index: White fir--57 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 65

Typical profile:
Surface rock fragments: About 10 percent stones
Layer 1--0 to 6 inches; very gravelly loam
Layer 2--6 to 17 inches; very cobbly loam
Layer 3--17 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Permeability class (root zone): Moderately slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Inville very gravelly loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Landform: Basin floors, drainageways
Typical vegetation: Forest canopy--Jeffrey pine, lodgepole pine, ponderosa pine; Forest understory--mountain brome, whitethorn ceanothus, needlegrass, manzanita, snowbrush ceanothus
Ecological site: None assigned

Aquolls gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Landform: Lakeshores
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

313--Penstock-Scaribou complex, 30 to 50 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 4,500 to 6,300
Precipitation: 30 to 40 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Penstock very gravelly loam, 30 to 50 percent slopes--45 percent
Scaribou very gravelly loam, 30 to 50 percent slopes--40 percent
Deadwood very gravelly sandy loam, 30 to 50 percent slopes--8 percent
Rock outcrop, 30 to 50 percent slopes--7 percent

Component Description

Penstock stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--whitethorn ceanothus, snowbrush ceanothus, needlegrass, sharpleaf snowberry, manzanita, mountain brome
Site index: Douglas fir--92 at an age base of 100 years
Site index: Jeffrey pine--87 at an age base of 100 years
Site index: White fir--58 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 59

Typical profile:
Surface rock fragments: About 10 percent stones
Layer 1--0 to 12 inches; very gravelly loam
Layer 2--12 to 63 inches; very gravelly loam
Layer 3--63 to 73 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 61 to 73 inches

Permeability class (root zone): Moderate
Available water capacity: About 6 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Component Description

Scaribou stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Douglas fir, Jeffrey pine, white fir; Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus, sharpleaf snowberry, needlegrass, mountain brome
Site index: Douglas fir--102 at an age base of 100 years
Site index: Jeffrey pine--96 at an age base of 100 years
Site index: White fir--57 at an age base of 50 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 65

Typical profile:
Surface rock fragments: About 10 percent stones
Layer 1--0 to 6 inches; very gravelly loam
Layer 2--6 to 17 inches; very cobbly loam
Layer 3--17 to 60 inches; very cobbly clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 1 inch thick
Runoff: Very high
Permeability class (root zone): Moderately slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Deadwood very gravelly sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Landform: Ridges
Typical vegetation: Forest canopy--Douglas fir, canyon live oak, incense cedar, ponderosa pine, sugar pine, Forest understory--greenleaf manzanita, California nutmeg, pinemat manzanita
Ecological site: None assigned

Rock outcrop
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Timber production
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
“Engineering” section
“Soil Properties” section

314--Pequop-Observation association, 15 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,400 to 7,000
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Pequop very cobbly loam, 15 to 30 percent slopes--55 percent
Observation very stony loam, 15 to 30 percent slopes--30 percent
Glean gravelly sandy loam, 15 to 30 percent slopes--5 percent
Fredonyer very stony loam, 15 to 30 percent slopes--5 percent
Madeline very stony loam, 15 to 30 percent slopes--5 percent

Component Description

Pequop very cobbly loam and similar soils
Landform: Toeslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock

Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 25 percent cobbles
Layer 1--0 to 3 inches; very cobbly loam
Layer 2--3 to 19 inches; very gravelly loam
Layer 3--19 to 36 inches; very gravelly clay loam
Layer 4--36 to 50 inches; very cobbly clay loam
Layer 5--50 to 55 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 50 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE187CA--Cool stony loam 12-16

Component Description

Observation very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 15 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 9 inches; loam
Layer 3--9 to 18 inches; clay loam
Layer 4--18 to 35 inches; gravelly clay
Layer 5--35 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE187CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Glean gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, antelope bitterbrush, needlegrass, mountain big sagebrush, Idaho fescue
Ecological site: R021XE176CA--Loam 12-16

Fredonyer very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush
Ecological site: R021XE178CA--Very stony loam 12-16

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Mountain big sagebrush, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

315--Pequop-Observation association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,800 to 7,900

Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Pequop very cobbly loam, 30 to 50 percent slopes--55 percent
Observation very stony loam, 30 to 50 percent slopes--30 percent
Puls very cobbly loam, 5 to 9 percent slopes--5 percent
Madeline very stony loam, 30 to 50 percent slopes--5 percent
Glean very stony loam, 30 to 50 percent slopes--5 percent

Component Description

Pequop very cobbly loam and similar soils
Landform: Toeslopes of mountains
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 25 percent cobbles, 5 percent stones
Layer 1--0 to 3 inches; very cobbly loam
Layer 2--3 to 19 inches; very gravelly loam
Layer 3--19 to 36 inches; very gravelly clay loam
Layer 4--36 to 50 inches; very cobbly clay loam
Layer 5--50 to 55 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 50 to 60 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE187CA--Cool stony loam 12-16

Component Description

Observation very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 20 percent cobbles, 15 percent stones
Layer 1--0 to 3 inches; very stony loam
Layer 2--3 to 9 inches; loam
Layer 3--9 to 18 inches; clay loam
Layer 4--18 to 35 inches; gravelly clay
Layer 5--35 to 45 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE187CA--Cool stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Puls very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Landform: Plateaus
Typical vegetation: Antelope bitterbrush, Idaho fescue, low sagebrush, bluebunch wheatgrass, Thurber needlegrass, bluegrass
Ecological site: R021XE173CA

Madeline very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Thurber needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Glean very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains

Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

316--Petescreek-Bucklake-Devada association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,200 to 6,000
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 80 to 100 days

Composition

Petescreek gravelly loam, 30 to 50 percent slopes--40 percent
Bucklake very cobbly loam, 30 to 50 percent slopes--25 percent
Devada very cobbly loam, 15 to 30 percent slopes--20 percent
Madeline very stony loam, 30 to 50 percent slopes--8 percent
Orhood very stony loam, 15 to 30 percent slopes--7 percent

Component Description

Petescreek gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 5 percent cobbles, 5 percent stones
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Bucklake very cobbly loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles
Layer 1--0 to 8 inches; very cobbly loam
Layer 2--8 to 12 inches; gravelly clay loam
Layer 3--12 to 24 inches; gravelly clay
Layer 4--24 to 34 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE179CA--Warm stony loam 12-16

Component Description

Devada very cobbly loam and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite

Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 30 percent cobbles
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Madeline very stony loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Idaho fescue, Thurber needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Orhood very stony loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains, ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Thurber needlegrass, arrowleaf balsamroot, antelope bitterbrush, Lemmon needlegrass, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

317--Petescreek-Devada-Searles association, 15 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,200 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek very gravelly loam, 30 to 50 percent slopes--40 percent
Devada very cobbly loam, 15 to 30 percent slopes--25 percent
Searles very stony loam, 30 to 50 percent slopes--20 percent
Rock outcrop, 30 to 50 percent slopes--5 percent
Orhood very stony loam, 5 to 30 percent slopes--5 percent
Fredonyer very stony loam, 15 to 30 percent slopes--5 percent

Component Description

Petescreek very gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 10 inches; very gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches

Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Devada very cobbly loam and similar soils
Landform: Backslopes of mountains, ridges
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 10 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE179CA--Warm stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Orhood very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 30 percent
Landform: Backslopes of mountains, ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Thurber needlegrass, arrowleaf balsamroot, Sandberg bluegrass, antelope bitterbrush, Idaho fescue, Lemmon needlegrass, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Fredonyer very stony loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Idaho fescue, curlleaf mountain mahogany, mountain big sagebrush
Ecological site: R021XE178CA--Very stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section

"Engineering" section
"Soil Properties" section

318--Petescreek-Devada-Searles association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,200 to 6,200
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek gravelly loam, 15 to 30 percent slopes--45 percent
Devada very cobbly loam, 9 to 30 percent slopes--20 percent
Searles very stony loam, 9 to 30 percent slopes--20 percent
Glean gravelly sandy loam, 9 to 15 percent slopes--5 percent
Orhood very stony loam, 15 to 30 percent slopes--4 percent
Rubble land, 15 to 30 percent slopes--2 percent
Rock outcrop, 15 to 30 percent slopes--2 percent
Hart Camp gravelly loam, 15 to 30 percent slopes--2 percent

Component Description

Petescreek gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE176CA--Loam 12-16

Component Description

Devada very cobbly loam and similar soils
Landform: Backslopes of mountains, ridges
Slope: 9 to 30 percent, south aspect
Parent material: Colluvium derived from andesite and basalt and residuum weathered from basalt or andesite
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 7 inches; very cobbly loam
Layer 2--7 to 15 inches; gravelly clay
Layer 3--15 to 19 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 12 to 20 inches
Permeability class (root zone): Slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam

Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE179CA--Warm stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Glean gravelly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Mountain big sagebrush, needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass
Ecological site: R021XE176CA--Loam 12-16

Orhood very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains, ridges
Typical vegetation: Forest canopy--western juniper, Forest understory--Lemmon needlegrass, rabbitbrush, mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, Thurber needlegrass, arrowleaf balsamroot, Sandberg bluegrass, antelope bitterbrush
Ecological site: R021XE174CA

Rubble land
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Hart Camp gravelly loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Ecological site: R021XE176CA--Loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

319--Petescreek-Fredonyer association, 2 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,200 to 7,000
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek gravelly loam, 9 to 30 percent slopes--60 percent
Fredonyer very stony loam, 2 to 15 percent slopes--25 percent
Newlands stony loam, 5 to 30 percent slopes--4 percent
Glean gravelly sandy loam, 5 to 30 percent slopes--4 percent
Observation very stony loam, 9 to 30 percent slopes--3 percent
Rock outcrop, 15 to 30 percent slopes--2 percent
Pequop very cobbly loam, 15 to 30 percent slopes--2 percent

Component Description

Petescreek gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam

Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Fredonyer vey stony loam and similar soils
Landform: Ridges
Slope: 2 to 15 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, curlleaf mountain mahogany, Idaho fescue

Typical profile:
Surface rock fragments: About 10 percent cobbles, 40 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 32 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Medium
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE178CA--Very stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Newlands stony loam and similar soils
Composition: 0 to 4 percent
Slope: 5 to 30 percent, north aspect
Landform: Toeslopes of mountains
Typical vegetation: Antelope bitterbrush, Idaho fescue, needlegrass, mountain big sagebrush, bluegrass
Ecological site: R021XE044CA--Cool loam 12-16

Glean gravelly sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 5 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush
Ecological site: R021XE176CA--Loam 12-16

Observation very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, Idaho fescue, antelope bitterbrush, needlegrass, mountain big sagebrush
Ecological site: R021XE174CA--Stony loam 12-16

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains, ridges
Ecological site: None assigned

Pequop very cobbly loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Landform: Toeslopes of mountains
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass, bluebunch wheatgrass
Ecological site: R021XE187CA--Cool stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

320--Petescreek-Fredonyer association, 30 to 50 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,200 to 7,000
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek very gravelly loam, 30 to 50 percent slopes--60 percent
Fredonyer very stony loam, 30 to 50 percent slopes--25 percent
Hapgood stony loam, 15 to 30 percent slopes--4 percent
Rock outcrop, 30 to 50 percent slopes--3 percent
Pequop very cobbly loam, 30 to 50 percent slopes--3 percent
Observation very stony loam, 30 to 50 percent slopes--3 percent
Rubble land, 30 to 50 percent slopes--2 percent

Component Description

Petescreek very gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 30 to 50 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 5 percent cobbles, 25 percent stones
Layer 1--0 to 10 inches; very gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Fredonyer very stony loam and similar soils
Landform: Backslopes of mountains, ridges
Slope: 30 to 50 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, curlleaf mountain mahogany, Idaho fescue

Typical profile:
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 32 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7e
Ecological site: R021XE178CA--Very stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Hapgood stony loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains, ridges
Typical vegetation: Lupine, bluebunch wheatgrass, mountain big sagebrush, arrowleaf balsamroot, basin wildrye, Idaho fescue, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE044CA--Cool loam 12-16

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Pequop very cobbly loam and similar soils
Composition: 0 to 3 percent

Slope: 30 to 50 percent
Landform: Toeslopes of mountains
Typical vegetation: Bluebunch wheatgrass, needlegrass, antelope bitterbrush, bluegrass, Idaho fescue, mountain big sagebrush
Ecological site: R021XE187CA--Cool stony loam 12-16

Observation very stony loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Needlegrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Rubble land
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

321--Petescreek-Orhood-Fredonyer association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 6,000 to 6,500
Precipitation: 12 to 16 inches
Air temperature: 43 to 45 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek stony loam, 9 to 30 percent slopes--35 percent
Orhood very stony loam, 9 to 30 percent slopes--25 percent
Fredonyer very stony loam, 9 to 30 percent slopes--20 percent
Searles very cobbly loam, 15 to 30 percent slopes--4 percent
Easte very gravelly sandy loam, 15 to 30 percent slopes--4 percent
Indiano stony fine sandy loam, 9 to 30 percent slopes--4 percent
Glean very stony loam, 9 to 30 percent slopes--4 percent
Alomax very stony sandy loam, 15 to 30 percent slopes--4 percent

Component Description

Petescreek stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 5 percent stones
Layer 1--0 to 10 inches; stony loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE174CA

Component Description

Orhood very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, Lemmon needlegrass, Idaho fescue, antelope bitterbrush, Sandberg bluegrass, arrowleaf balsamroot, Thurber needlegrass
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam

Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Fredonyer very stony loam and similar soils
Landform: Ridges
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, curlleaf mountain mahogany, Idaho fescue

Typical profile:
Surface rock fragments: About 15 percent cobbles, 25 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 12 inches; very gravelly loam
Layer 3--12 to 28 inches; very cobbly loam
Layer 4--28 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE178CA--Very stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Searles very cobbly loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE179CA--Warm stony loam 12-16

Easte very gravelly sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--California red fir, white fir; Forest understory--snowbrush ceanothus, whitethorn ceanothus, greenleaf manzanita, needlegrass, other perennial grasses
Ecological site: None assigned

Indiano stony fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Wyoming big sagebrush, Thurber needlegrass, other shrubs, antelope bitterbrush, other perennial grasses, other perennial forbs, basin wildrye, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Glean very stony loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 30 percent, north aspect
Landform: Backslopes of mountains
Typical vegetation: Bluebunch wheatgrass, antelope bitterbrush, Idaho fescue, mountain big sagebrush, needlegrass
Ecological site: R021XE174CA--Stony loam 12-16

Alomax very stony sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Landform: Backslopes of mountains, ridges
Typical vegetation: Needlegrass, mountain big sagebrush, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing and juniper wood products
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section

"Soil Properties" section

322--Petescreek-Searles association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,400 to 6,500
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek gravelly loam, 9 to 30 percent slopes--50 percent
Searles very stony loam, 9 to 30 percent slopes--30 percent
Rock outcrop, 15 to 30 percent slopes--10 percent
Orhood very stony loam, 9 to 15 percent slopes--10 percent

Component Description

Petescreek gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 8 inches; very stony loam
Layer 2--8 to 40 inches; very cobbly clay loam
Layer 3--40 to 50 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rock outcrop
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Landform: Mountains
Ecological site: None assigned

Orhood very stony loam and similar soils
Composition: 0 to 10 percent
Slope: 9 to 15 percent
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--mountain big sagebrush, bluebunch wheatgrass, Lemmon needlegrass, antelope bitterbrush, Sandberg bluegrass, arrowleaf balsamroot, Thurber needlegrass, rabbitbrush, Idaho fescue
Ecological site: R021XE174CA--Stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

323--Petescreek-Searles-Orhood association, 9 to 30 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Mountains
Elevation: 5,100 to 6,500
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Petescreek gravelly loam, 9 to 30 percent slopes--45 percent
Searles very stony loam, 15 to 30 percent slopes--25 percent
Orhood very stony loam, 9 to 30 percent slopes--20 percent
Fredonyer very stony loam, 15 to 30 percent slopes--10 percent

Component Description

Petescreek gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent, north aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Mountain big sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, needlegrass

Typical profile:
Layer 1--0 to 10 inches; gravelly loam
Layer 2--10 to 17 inches; gravelly loam
Layer 3--17 to 27 inches; cobbly loam
Layer 4--27 to 60 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Moderate
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: R021XE044CA--Cool loam 12-16

Component Description

Searles very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 15 to 30 percent, south aspect
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Bluebunch wheatgrass, mountain big sagebrush, Idaho fescue, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent stones, 10 percent cobbles
Layer 1--0 to 13 inches; very stony loam
Layer 2--13 to 29 inches; very cobbly clay loam
Layer 3--29 to 33 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 3 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA--Stony loam 12-16

Component Description

Orhood very stony loam and similar soils
Landform: Backslopes of mountains
Slope: 9 to 30 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Forest canopy--western juniper, Forest understory--bluebunch wheatgrass, mountain big sagebrush, rabbitbrush, Lemmon needlegrass, Idaho fescue, antelope bitterbrush, Sandberg bluegrass, arrowleaf balsamroot, Thurber needlegrass
Site index: Western juniper--26 at an age base of 50 years

Typical profile:
Surface rock fragments: About 10 percent cobbles, 15 percent stones
Layer 1--0 to 4 inches; very stony loam
Layer 2--4 to 9 inches; very cobbly loam
Layer 3--9 to 19 inches; very cobbly clay loam
Layer 4--19 to 23 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 14 to 20 inches
Permeability class (root zone): Moderately slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE174CA

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Fredonyer very stony loam and similar soils
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Landform: Ridges
Typical vegetation: Curlleaf mountain mahogany, Idaho fescue, mountain big sagebrush
Ecological site: R021XE178CA--Very stony loam 12-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

324--Pit clay, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 5,280 to 5,300
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Pit clay, 0 to 2 percent slopes--80 percent
Ravendale silty clay, 0 to 2 percent slopes--7 percent
Lakeview loam, 0 to 2 percent slopes--7 percent
Termo silty clay, 0 to 2 percent slopes--6 percent

Component Description

Pit clay and similar soils
Landform: Flood plains
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Western wheatgrass, silver sagebrush, beardless wildrye, Nevada bluegrass

Typical profile:
Layer 1--0 to 24 inches; clay
Layer 2--24 to 37 inches; clay
Layer 3--37 to 60 inches; clay loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Sodicity: Sodic within 40 inches
Available water capacity: About 10 inches
Present flooding: Occasional
Water table: Present
Natural drainage class: Poorly drained

Interpretive Groups
Irrigated land capability: 4w-2
Nonirrigated land capability: 4w-2
Ecological site: R023XF092CA--Clay floodplain 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Ravendale silty clay, ponded and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Basin floors
Ecological site: None assigned

Lakeview loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Termo silty clay and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent

Landform: Lake terraces
Typical vegetation: Big sagebrush, shadscale, rubber rabbitbrush, basin wildrye, spiny hopsage, Sandberg bluegrass, black greasewood, bottlebrush squirreltail
Ecological site: R023XF089CA--Sodic flat 9-12

Management

Major uses: Irrigated crops, alfalfa hay and livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

325--Pits and Dumps

Map Unit Setting

MLRA: 23
Landscape: Lake plain
Elevation: 4,000 to 5,300
Precipitation: 6 to 14 inches
Air temperature: 47 to 52 degrees Fahrenheit
Frost-free period: 60 to 130 days

Composition

Pits variable, 2 to 15 percent slopes--50 percent
Dumps variable, 2 to 15 percent slopes--40 percent
McConnel gravelly fine sandy loam, 2 to 15 percent slopes--2 percent
Cochran gravelly loam, 2 to 15 percent slopes--2 percent
Badenaugh stony sandy loam, 5 to 15 percent slopes--2 percent
Zorravista sand, 2 to 15 percent slopes--1 percent
Devada very stony loam, 2 to 15 percent slopes--1 percent
Fiddler very stony loam, 5 to 15 percent slopes--1 percent
Toulon very gravelly fine sandy loam, 2 to 15 percent slopes--1 percent

Component Description

Pits
Landform: Lake terraces
Slope: 2 to 15 percent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Component Description

Dumps
Landform: Lake terraces
Slope: 2 to 15 percent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

McConnel gravelly fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 15 percent
Landform: Fan remnants
Typical vegetation: Thurber needlegrass, bluebunch wheatgrass, Wyoming big sagebrush, yellow rabbitbrush, spiny hopsage, Indian ricegrass, bottlebrush squirreltail
Ecological site: R026XF052CA--Granitic upland 9-12

Cochran gravelly loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 15 percent
Landform: Lake terraces
Typical vegetation: Antelope bitterbrush, needlegrass, mountain big sagebrush, bluegrass, Idaho fescue
Ecological site: R021XE044CA--Cool loam 12-16

Badenaugh stony sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 15 percent
Landform: Fan remnants
Typical vegetation: Needlegrass, antelope bitterbrush, Anderson peachbrush, green ephedra, big sagebrush, bluebunch wheatgrass
Ecological site: R026XF052CA--Granitic upland 9-12

Zorravista sand and similar soils
Composition: 0 to 1 percent
Slope: 2 to 15 percent
Landform: Dunes
Typical vegetation: Basin big sagebrush, fourwing saltbush, rubber rabbitbrush, basin wildrye, spiny hopsage, Indian ricegrass, black greasewood, needleandthread, littleleaf horsebrush
Ecological site: R023XG049CA--Sand dunes 6-9

Devada very stony loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 15 percent
Landform: Mountains
Typical vegetation: Bluegrass, Thurber needlegrass, low sagebrush, bluebunch wheatgrass
Ecological site: R023XF081CA--Shallow stony loam 9-12

Fiddler very stony loam and similar soils
Composition: 0 to 1 percent
Slope: 5 to 15 percent, south aspect
Landform: Backslopes of mountains
Typical vegetation: Forest canopy--western juniper, Forest understory--rabbitbrush, antelope bitterbrush, arrowleaf balsamroot, Thurber needlegrass, mountain big sagebrush, Idaho fescue, bottlebrush squirreltail, Nevada bluegrass, bluebunch wheatgrass, Sandberg bluegrass
Ecological site: R021XE174CA

Toulon very gravelly fine sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 15 percent
Landform: Fan remnants
Typical vegetation: Spiny hopsage, Indian ricegrass, bottlebrush squirreltail, shadscale
Ecological site: R023XG057CA--Sodic gravelly sand 6-9

Management

Major uses: Sand and gravel pits, refuse dumps and rock quarries
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

326--Playas

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 4,000 to 5,800
Precipitation: 6 to 14 inches
Air temperature: 47 to 52 degrees Fahrenheit
Frost-free period: 60 to 130 days

Composition

Playas silty clay loam, 0 to 1 percent slopes--90 percent
Epot very fine sandy loam, 0 to 1 percent slopes--3 percent
Calneva silt loam, 0 to 1 percent slopes--3 percent
Biscaro silt loam, 0 to 1 percent slopes--2 percent
Termo silty clay, 0 to 1 percent slopes--2 percent

Component Description

Playas
Landform: Playas
Slope: 0 to 1 percent

Component Properties and Qualities
Runoff: Negligible
Salinity: Saline within 40 inches
Present ponding: Frequent

Interpretive Groups
Nonirrigated land capability: 8
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Epot very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail
Ecological site: R023XG046CA

Calneva silt loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 1 percent
Landform: Basin floors
Typical vegetation: Bud sagebrush, shadscale, black greasewood, bottlebrush squirreltail
Ecological site: R023XG046CA--Sodic flat 6-9

Biscaro silt loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Typical vegetation: Big sagebrush, shadscale, rubber rabbitbrush, basin wildrye, spiny hopsage, Sandberg bluegrass, black greasewood, bottlebrush squirreltail
Ecological site: R023XF089CA

Termo silty clay and similar soils
Composition: 0 to 2 percent
Slope: 0 to 1 percent
Landform: Lake terraces
Typical vegetation: Big sagebrush, shadscale, rubber rabbitbrush, basin wildrye, spiny hopsage, Sandberg bluegrass, black greasewood, bottlebrush squirreltail
Ecological site: R023XF089CA--Sodic flat 9-12

Management

Major uses: Recreation
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

327--Plinco gravelly sandy loam, 0 to 2 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 4,100 to 4,200
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Plinco gravelly sandy loam, 0 to 2 percent slopes--85 percent
Mottsville gravelly loamy coarse sand, 0 to 2 percent slopes--8 percent
Fluvents stratified very fine sandy loam, 0 to 2 percent slopes--7 percent

Component Description

Plinco gravelly sandy loam and similar soils
Landform: Alluvial fans
Slope: 0 to 2 percent
Parent material: Alluvium derived from granite

Typical profile:
Layer 1--0 to 5 inches; gravelly sandy loam
Layer 2--5 to 11 inches; sandy loam
Layer 3--11 to 47 inches; gravelly sandy loam
Layer 4--47 to 64 inches; gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very low
Permeability class (root zone): Moderately rapid
Available water capacity: About 6 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 2w-2
Nonirrigated land capability: 4c-2
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Mottsville gravelly loamy coarse sand and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Landform: Fan remnants
Typical vegetation: Indian ricegrass, antelope bitterbrush, needleandthread, desert peach, desert needlegrass, basin big sagebrush, bottlebrush squirreltail
Ecological site: R026XF051CA--Granitic fan 9-12

Fluvents and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Landform: Flood plains
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, pasture and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

328--Plinco loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Alluvial plain
Elevation: 4,200 to 4,400
Precipitation: 12 to 16 inches
Air temperature: 50 to 52 degrees Fahrenheit
Frost-free period: 100 to 130 days

Composition

Plinco loam, 2 to 9 percent slopes--90 percent
Plinco loam, 5 to 9 percent slopes, extremely stony--10 percent

Component Description

Plinco loam and similar soils
Landform: Alluvial fans
Slope: 2 to 9 percent
Parent material: Alluvium derived from granite

Typical profile:
Layer 1--0 to 5 inches; loam
Layer 2--5 to 11 inches; sandy loam
Layer 3--11 to 47 inches; gravelly sandy loam
Layer 4--47 to 64 inches; gravelly loam

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Permeability class (root zone): Moderately rapid
Available water capacity: About 7 inches
Present flooding: None
Water table: Present
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 3e-1
Nonirrigated land capability: 4e-1
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Plinco and similar soils
Composition: 0 to 10 percent
Slope: 5 to 9 percent
Landform: Alluvial fans
Ecological site: None assigned

Management

Major uses: Irrigated crops, alfalfa hay, pasture and urban development
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Crops and Pasture" section
"Engineering" section
"Soil Properties" section

329--Puls very cobbly loam, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,000 to 5,500
Precipitation: 12 to 16 inches
Air temperature: 45 to 47 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Puls very cobbly loam, 2 to 9 percent slopes--85 percent
Devada very cobbly loam, 2 to 9 percent slopes--5 percent
Rubble land, 5 to 9 percent slopes--4 percent
Longcreek very cobbly loam, 2 to 9 percent slopes--4 percent
Aquolls gravelly sandy loam, 2 to 5 percent slopes--2 percent

Component Description

Puls very cobbly loam and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Volcanic rock
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 40 percent cobbles
Layer 1--0 to 2 inches; very cobbly loam
Layer 2--2 to 6 inches; clay loam
Layer 3--6 to 15 inches; silty clay
Layer 4--15 to 31 inches; indurated
Layer 5--31 to 35 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 10 to 20 inches, Bedrock (lithic): 11 to 40 inches
Permeability class (root zone): Very slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Ridges
Typical vegetation: Low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Rubble land
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Landform: Plateaus
Ecological site: None assigned

Longcreek very cobbly loam and similar soils
Composition: 0 to 4 percent

Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Mountain big sagebrush, basin wildrye, antelope bitterbrush, Thurber needlegrass, bluebunch wheatgrass
Ecological site: R023XF082CA--Stony loam 9-12

Aquolls gravelly sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent
Landform: Lakeshores
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

330--Puls-Ninekar complex, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,000 to 5,800
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Puls very stony loam, 2 to 9 percent slopes--55 percent
Ninekar very cobbly silt loam, 2 to 9 percent slopes--30 percent
Devada extremely stony loam, 2 to 9 percent slopes--8 percent
Tunnison very cobbly clay, 2 to 9 percent slopes--7 percent

Component Description

Puls very stony loam and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Volcanic rock
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 10 percent cobbles, 30 percent stones
Layer 1--0 to 2 inches; very stony loam
Layer 2--2 to 6 inches; clay loam
Layer 3--6 to 15 inches; silty clay
Layer 4--15 to 31 inches; indurated
Layer 5--31 to 35 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 10 to 20 inches, Bedrock (lithic): 11 to 40 inches
Permeability class (root zone): Very slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Ninekar very cobbly silt loam and similar soils
Landform: Plateaus
Slope: 2 to 9 percent
Parent material: Residuum weathered from basalt
Typical vegetation: Bluebunch wheatgrass, low sagebrush, beardless wildrye, Idaho fescue, Nevada bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 35 percent cobbles, 5 percent stones
Layer 1--0 to 3 inches; very cobbly silt loam
Layer 2--3 to 6 inches; clay loam
Layer 3--6 to 21 inches; clay
Layer 4--21 to 28 inches; clay loam
Layer 5--28 to 38 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Bedrock (lithic): 20 to 40 inches
Permeability class (root zone): Impermeable
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Devada extremely stony loam and similar soils
Composition: 0 to 8 percent
Slope: 2 to 9 percent
Landform: Ridges
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Tunnison very cobbly clay and similar soils
Composition: 0 to 7 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Rubber rabbitbrush, bottlebrush squirreltail, Thurber needlegrass, beardless wildrye, western wheatgrass, littleleaf horsebrush, big sagebrush
Ecological site: R023XF093CA--Shallow clay 9-16

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

331--Puls-Tunnison complex, 2 to 9 percent slopes

Map Unit Setting

MLRA: 21
Landscape: Plateau
Elevation: 5,000 to 5,500
Precipitation: 12 to 16 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Puls very stony loam, 5 to 9 percent slopes--50 percent
Tunnison very cobbly clay, 2 to 5 percent slopes--35 percent
Horsecamp very cobbly silty clay, 2 to 9 percent slopes--5 percent
Devada very cobbly loam, 2 to 9 percent slopes--5 percent
Loomis very cobbly loam, 5 to 9 percent slopes--3 percent
Rock outcrop, 5 to 9 percent slopes--2 percent

Component Description

Puls very stony loam and similar soils
Landform: Plateaus
Slope: 5 to 9 percent
Parent material: Volcanic rock
Typical vegetation: Bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, antelope bitterbrush, Thurber needlegrass

Typical profile:
Surface rock fragments: About 15 percent cobbles, 25 percent stones
Layer 1--0 to 2 inches; very stony loam
Layer 2--2 to 6 inches; clay loam
Layer 3--6 to 15 inches; silty clay
Layer 4--15 to 31 inches; indurated
Layer 5--31 to 35 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Very high
Depth to restrictive feature: Duripan: 10 to 20 inches, Bedrock (lithic): 11 to 40 inches
Permeability class (root zone): Very slow
Available water capacity: About 2 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R021XE173CA--Shallow stony loam 12-16

Component Description

Tunnison very cobbly clay and similar soils
Landform: Plateaus
Slope: 2 to 5 percent
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush

Typical profile:
Surface rock fragments: About 30 percent cobbles, 5 percent stones
Layer 1--0 to 1 inch; very cobbly clay
Layer 2--1 to 31 inches; clay
Layer 3--31 to 38 inches; weathered bedrock
Layer 4--38 to 48 inches; unweathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High

Depth to restrictive feature: Bedrock (paralithic): 20 to 35 inches
Bedrock (lithic): 30 to 40 inches
Permeability class (root zone): Slow
Available water capacity: About 4 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 7s
Ecological site: R023XF093CA--Shallow clay 9-16

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Horsecamp very cobbly silty clay and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Plateaus
Typical vegetation: Western wheatgrass, big sagebrush, rubber rabbitbrush, beardless wildrye, bottlebrush squirreltail, Thurber needlegrass, littleleaf horsebrush
Ecological site: R023XF084CA--Clay upland 9-16

Devada very cobbly loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Landform: Ridges
Typical vegetation: Thurber needlegrass, antelope bitterbrush, bluegrass, Idaho fescue, low sagebrush, bluebunch wheatgrass
Ecological site: R021XE173CA--Shallow stony loam 12-16

Loomis very cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 5 to 9 percent
Landform: Backslopes of plateaus
Typical vegetation: Bluebunch wheatgrass, black sagebrush, Sandberg bluegrass, bottlebrush squirreltail, Thurber needlegrass
Ecological site: R023XF087CA--Very shallow stony loam 9-12

Rock outcrop
Composition: 0 to 2 percent
Slope: 5 to 9 percent
Landform: Plateaus
Ecological site: None assigned

Management

Major uses: Livestock grazing
For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Engineering" section
"Soil Properties" section

332--Quartzburg-Scaribou complex, 50 to 75 percent slopes

Map Unit Setting

MLRA: 22
Landscape: Mountains
Elevation: 5,400 to 6,800
Precipitation: 25 to 30 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Quartzburg stony loamy sand, 50 to 75 percent slopes--60 percent
Scaribou very gravelly loam, 50 to 75 percent slopes--30 percent
Rubble land, 50 to 75 percent slopes--5 percent
Rock outcrop, 50 to 75 percent slopes--5 percent

Component Description

Quartzburg stony loamy sand and similar soils
Landform: Backslopes of mountains
Slope: 50 to 75 percent, north aspect
Parent material: Granite
Typical vegetation: Forest canopy--Jeffrey pine
Site index: Jeffrey pine--64 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 52

Typical profile:
Surface rock fragments: About 5 percent cobbles, 10 percent stones
Layer 1--0 to 7 inches; stony loamy sand
Layer 2--7 to 26 inches; very gravelly loamy coarse sand
Layer 3--26 to 30 inches; weathered bedrock

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: Low
Depth to restrictive feature: Bedrock (paralithic): 20 to 40 inches
Permeability class (root zone): Rapid
Available water capacity: About 1.0 inch
Present flooding: None
Natural drainage class: Somewhat excessively drained

Interpretive Groups
Nonirrigated land capability: 6e

Ecological site: None assigned

Component Description

Scaribou very gravelly loam and similar soils
Landform: Backslopes of mountains
Slope: 50 to 75 percent
Parent material: Colluvium derived from metavolcanics and residuum weathered from metavolcanics
Typical vegetation: Forest canopy--Jeffrey pine, white fir, Forest understory--whitethorn ceanothus, manzanita, snowbrush ceanothus, needlegrass, mountain brome
Site index: Jeffrey pine--96 at an age base of 100 years
Additional forest note: Dunning site class: II
Additional forest note: Cactos site index: 65

Typical profile:
Layer 1--0 to 12 inches; very gravelly loam
Layer 2--12 to 40 inches; very gravelly clay loam
Layer 3--40 to 60 inches; very gravelly clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Surface features: The surface is covered with duff 2 inches thick
Runoff: Very high
Permeability class (root zone): Slow
Available water capacity: About 5 inches
Present flooding: None
Natural drainage class: Well drained

Interpretive Groups
Nonirrigated land capability: 6e
Ecological site: None assigned

Typical soil descriptions including ranges in characteristics are in the "Classification of the Soils" section.

Contrasting Inclusions

Rubble land
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Landform: Mountains
Ecological site: None assigned

Rock outcrop
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Landform: Mountains
Ecological site: None assigned

Management

Major uses: Timber production

For information about managing this map unit, see the following sections and associated tables in Part II of this publication:
"Range" section
"Forest land" section
"Engineering" section
"Soil Properties" section

333--Ravendale silty clay, 0 to 2 percent slopes

Map Unit Setting

MLRA: 23
Landscape: Bolson
Elevation: 5,200 to 5,400
Precipitation: 12 to 14 inches
Air temperature: 44 to 46 degrees Fahrenheit
Frost-free period: 60 to 80 days

Composition

Ravendale silty clay, 0 to 2 percent slopes--80 percent
Dryvalley silty clay loam, 0 to 2 percent slopes--10 percent
Gerlach silty clay, 2 to 5 percent slopes--10 percent

Component Description

Ravendale silty clay, drained and similar soils
Landform: Basin floors
Slope: 0 to 2 percent
Parent material: Alluvium derived from volcanic rock
Typical vegetation: Western wheatgrass, basin big sagebrush, rubber rabbitbrush, beardless wildrye, Nevada bluegrass

Typical profile:
Layer 1--0 to 16 inches; silty clay
Layer 2--16 to 48 inches; silty clay
Layer 3--48 to 60 inches; silty clay

See "Chemical Properties of Soils" table and the "Physical Properties of Soils" table for more information.

Component Properties and Qualities
Runoff: High
Permeability class (root zone): Slow
Available water capacity: About 9 inches
Present flooding: Rare
Present ponding: Rare
Natural drainage class: Moderately well drained

Interpretive Groups
Irrigated land capability: 4s-2
Nonirrigated land capability: 4s-2
Ecological site: R021XE189CA--Clay fan 12-16

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For additional information dealing with Supplemental Nutrition Assistance Program (SNAP) issues, call either the USDA SNAP Hotline Number at (800) 221-5689, which is also in Spanish, or the State Information/Hotline Numbers (http://directives.sc.egov.usda.gov/33085.wba).

All Other Inquires

For information not pertaining to civil rights, please refer to the listing of the USDA Agencies and Offices (http://directives.sc.egov.usda.gov/33086.wba).