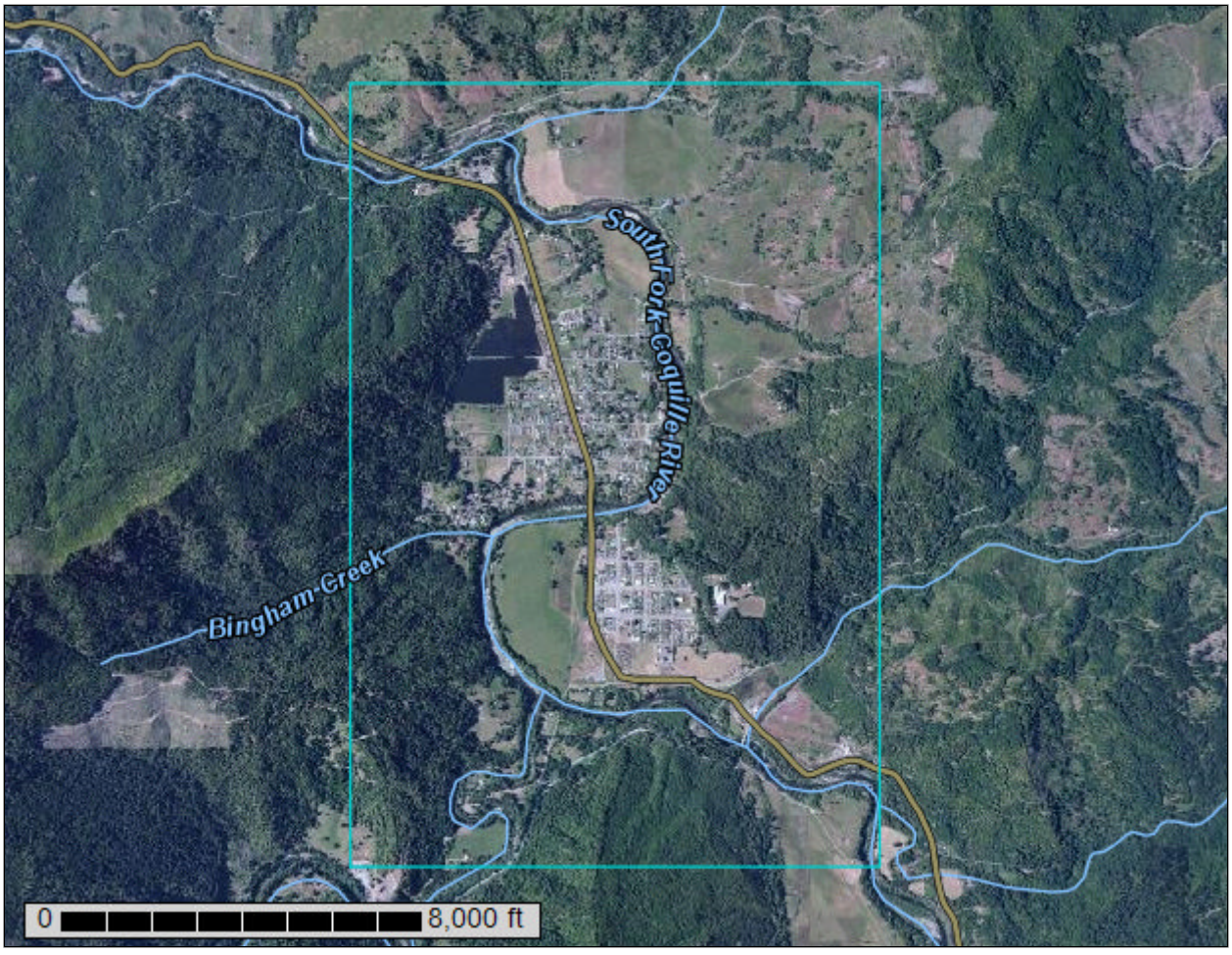
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product 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 participants

Custom Soil Resource Report for Coos County, Oregon



November 9, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is 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.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. 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.

The National Cooperative Soil Survey is 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 (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various 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 observed and described many soil profiles. A soil profile 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 or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur 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 soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

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

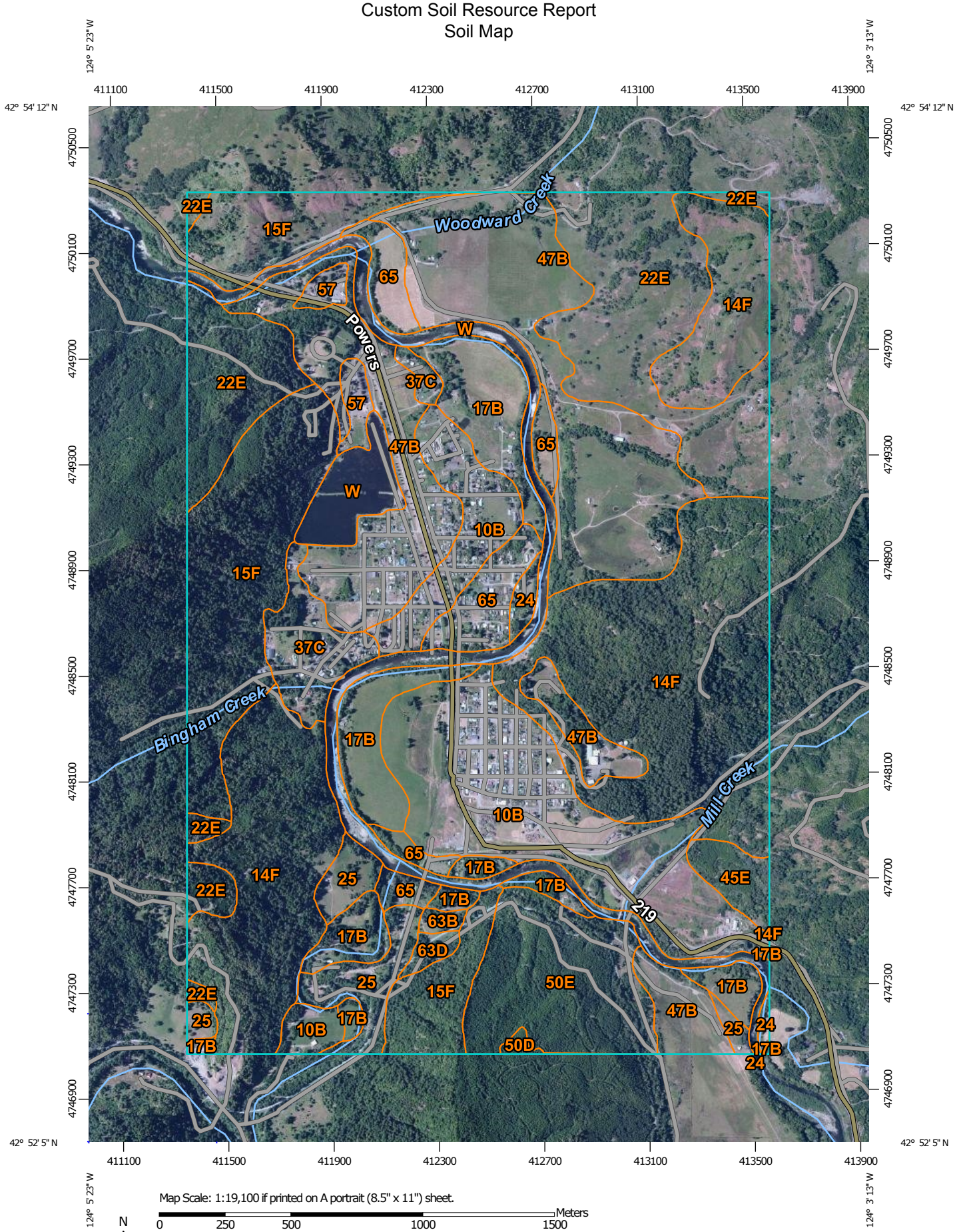
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree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

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

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:19,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Coos County, Oregon
Survey Area Data: Version 10, Sep 18, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 30, 2010—Jul 13, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Coos County, Oregon (OR011)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
10B	Chismore silt loam, 3 to 7 percent slopes	215.2	12.0%
14F	Digger-Preacher-Umpcoos association, 50 to 80 percent slopes	390.5	21.8%
15F	Digger-Umpcoos-Rock outcrop association, 50 to 90 percent slopes	199.2	11.1%
17B	Eilertsen silt loam, 0 to 7 percent slopes	113.5	6.3%
22E	Etelka-Whobrey-Remote complex, 30 to 60 percent slopes	199.2	11.1%
24	Gardiner sandy loam	7.1	0.4%
25	Gauldy variant loam	44.3	2.5%
37C	Meda loam, 3 to 15 percent slopes	38.6	2.2%
45E	Preacher-Blachly-Digger association, 30 to 60 percent slopes	15.9	0.9%
47B	Pyburn silty clay, 0 to 8 percent slopes	301.6	16.9%
50D	Remote-Digger-Preacher complex, 12 to 30 percent slopes	2.1	0.1%
50E	Remote-Digger-Preacher complex, 30 to 50 percent slopes	86.8	4.9%
57	Udorthents, level	13.5	0.8%
63B	Wintley silt loam, 0 to 8 percent slopes	3.4	0.2%
63D	Wintley silt loam, 15 to 30 percent slopes	5.2	0.3%
65	Zyzzug silt loam	59.1	3.3%
W	Water	93.9	5.2%
Totals for Area of Interest		**1,789.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

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

Most minor soils have properties 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, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. 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. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components 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 minor components 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 landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, 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 and gives important soil properties and qualities.

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, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

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. Alpha-Beta complex, 0 to 6 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. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Coos County, Oregon

10B—Chismore silt loam, 3 to 7 percent slopes

Map Unit Setting

National map unit symbol: 21m2
Elevation: 100 to 380 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Chismore and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chismore

Setting

Landform: Terraces, fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 60 inches: silty clay loam

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Other vegetative classification: Moderately Well Drained < 15% Slopes (G001XY006OR)
Hydric soil rating: No

14F—Digger-Preacher-Umpcoos association, 50 to 80 percent slopes

Map Unit Setting

National map unit symbol: 21mh
Elevation: 200 to 3,600 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Digger and similar soils: 30 percent
Preacher and similar soils: 30 percent
Umpcoos and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Digger

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 7 inches: gravelly loam
H2 - 7 to 10 inches: gravelly loam
H3 - 10 to 32 inches: very gravelly loam
H4 - 32 to 42 inches: weathered bedrock

Properties and qualities

Slope: 50 to 80 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Preacher

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Convex, concave
Across-slope shape: Convex, concave
Parent material: Colluvium and residuum derived from arkosic sandstone

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
H1 - 4 to 18 inches: loam
H2 - 18 to 52 inches: clay loam
H3 - 52 to 64 inches: clay loam

Properties and qualities

Slope: 50 to 80 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Umpcoos

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
H1 - 2 to 5 inches: very gravelly sandy loam
H2 - 5 to 18 inches: very gravelly sandy loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 80 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Hydric soil rating: No

15F—Digger-Umpcoos-Rock outcrop association, 50 to 90 percent slopes

Map Unit Setting

National map unit symbol: 21ml
Elevation: 200 to 3,800 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Digger and similar soils: 30 percent
Umpcoos and similar soils: 25 percent
Rock outcrop: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Digger

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 7 inches: gravelly loam
H2 - 7 to 10 inches: gravelly loam
H3 - 10 to 32 inches: very gravelly loam
H4 - 32 to 42 inches: weathered bedrock

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Umpcoos

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
H1 - 2 to 5 inches: very gravelly sandy loam
H2 - 5 to 18 inches: very gravelly sandy loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: Unranked

17B—Eilertsen silt loam, 0 to 7 percent slopes

Map Unit Setting

National map unit symbol: 21mn
Elevation: 50 to 120 feet
Mean annual precipitation: 60 to 70 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Eilertsen and similar soils: 75 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eilertsen

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 59 inches: silt loam
H3 - 59 to 65 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Other vegetative classification: Well Drained < 15% Slopes (G001XY004OR)
Hydric soil rating: No

22E—Etelka-Whobrey-Remote complex, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 21my
Elevation: 200 to 1,600 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Etelka and similar soils: 40 percent
Whobrey and similar soils: 25 percent
Remote and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Etelka

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and residuum derived from sedimentary rock

Typical profile

H1 - 0 to 13 inches: silt loam
H2 - 13 to 24 inches: silt loam
H3 - 24 to 60 inches: silty clay

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Other vegetative classification: Moderately Well Drained > 15% Slopes (G001XY005OR)
Hydric soil rating: No

Description of Whobrey

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum and colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 12 inches: silt loam
H2 - 12 to 21 inches: silt loam
H3 - 21 to 61 inches: clay

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: No

Description of Remote

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 14 inches: gravelly clay loam
H3 - 14 to 45 inches: very gravelly clay loam
H4 - 45 to 68 inches: extremely gravelly loam
H5 - 68 to 78 inches: weathered bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 60 to 80 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Other vegetative classification: Well Drained > 15% Slopes (G001XY003OR)
Hydric soil rating: No

24—Gardiner sandy loam

Map Unit Setting

National map unit symbol: 21n0
Elevation: 20 to 750 feet
Mean annual precipitation: 60 to 90 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Gardiner and similar soils: 85 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gardiner

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A
Other vegetative classification: Well Drained < 15% Slopes (G001XY004OR)
Hydric soil rating: No

Minor Components

Quosatana

Percent of map unit: 7 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: Yes

25—Gauldy variant loam

Map Unit Setting

National map unit symbol: 21n1
Elevation: 10 to 400 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Gauldy, variant, and similar soils: 75 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gauldy, Variant

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 17 inches: loam
H3 - 17 to 28 inches: very gravelly sandy loam
H4 - 28 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Other vegetative classification: Somewhat Excessively Drained (G001XY002OR)
Hydric soil rating: No

Minor Components

Pyburn

Percent of map unit: 12 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: Yes

37C—Meda loam, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 21nx
Elevation: 100 to 380 feet
Mean annual precipitation: 60 to 90 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Meda and similar soils: 85 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Meda

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 32 inches: gravelly clay loam
H3 - 32 to 60 inches: very gravelly loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Other vegetative classification: Well Drained < 15% Slopes (G001XY004OR)
Hydric soil rating: No

Minor Components

Pyburn

Percent of map unit: 4 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: Yes

45E—Preacher-Blachly-Digger association, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 21p7
Elevation: 250 to 3,000 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Preacher and similar soils: 35 percent
Blachly and similar soils: 25 percent
Digger and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Preacher

Setting

Landform: Ridges on mountains, rotational slides on mountains
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Mountaintop, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from arkosic sandstone

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
H1 - 4 to 18 inches: loam
H2 - 18 to 52 inches: clay loam
H3 - 52 to 64 inches: clay loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Blachly

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Colluvium derived from sedimentary rock and basalt

Typical profile

H1 - 0 to 7 inches: silty clay loam
H2 - 7 to 52 inches: silty clay
H3 - 52 to 60 inches: silty clay loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Digger

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 7 inches: gravelly loam
H2 - 7 to 10 inches: gravelly loam
H3 - 10 to 32 inches: very gravelly loam
H4 - 32 to 42 inches: weathered bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

47B—Pyburn silty clay, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 21pc
Elevation: 100 to 380 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pyburn and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyburn

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 7 inches: silty clay
H2 - 7 to 38 inches: clay
H3 - 38 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: Yes

Minor Components

Pyburn, 8-15% slopes

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: Yes

50D—Remote-Digger-Preacher complex, 12 to 30 percent slopes

Map Unit Setting

National map unit symbol: 21pk
Elevation: 250 to 3,600 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Remote and similar soils: 35 percent
Digger and similar soils: 30 percent
Preacher and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Remote

Setting

Landform: Ridges on mountains, mountain slopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 14 inches: gravelly clay loam
H3 - 14 to 45 inches: very gravelly clay loam
H4 - 45 to 68 inches: extremely gravelly loam
H5 - 68 to 78 inches: weathered bedrock

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: 60 to 80 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Other vegetative classification: Well Drained > 15% Slopes (G001XY003OR)
Hydric soil rating: No

Description of Digger

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 7 inches: gravelly loam
H2 - 7 to 10 inches: gravelly loam
H3 - 10 to 32 inches: very gravelly loam
H4 - 32 to 42 inches: weathered bedrock

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Preacher

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Colluvium and residuum derived from arkosic sandstone

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
H1 - 4 to 18 inches: loam
H2 - 18 to 52 inches: clay loam
H3 - 52 to 64 inches: clay loam

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Other vegetative classification: Well Drained > 15% Slopes (G001XY003OR)
Hydric soil rating: No

50E—Remote-Digger-Preacher complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 21pl
Elevation: 250 to 3,600 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Remote and similar soils: 35 percent
Digger and similar soils: 25 percent
Preacher and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Remote

Setting

Landform: Ridges on mountains, mountain slopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 14 inches: gravelly clay loam
H3 - 14 to 45 inches: very gravelly clay loam
H4 - 45 to 68 inches: extremely gravelly loam
H5 - 68 to 78 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 60 to 80 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Other vegetative classification: Well Drained > 15% Slopes (G001XY003OR)
Hydric soil rating: No

Description of Digger

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 7 inches: gravelly loam
H2 - 7 to 10 inches: gravelly loam
H3 - 10 to 32 inches: very gravelly loam
H4 - 32 to 42 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Preacher

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Parent material: Colluvium and residuum derived from arkosic sandstone

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
H1 - 4 to 18 inches: loam
H2 - 18 to 52 inches: clay loam

H3 - 52 to 64 inches: clay loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

57—Udorthents, level

Map Unit Composition

Udorthents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform: Flood plains, marshes, tidal flats
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium, dredging spoil, dune sand, and wood chips

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

63B—Wintley silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 21qh
Elevation: 50 to 420 feet

Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Wintley and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wintley

Setting
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile
Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 5 inches: silt loam
H2 - 5 to 48 inches: silty clay loam
H3 - 48 to 61 inches: very gravelly loam

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.2 inches)

Interpretive groups
Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Other vegetative classification: Well Drained < 15% Slopes (G001XY004OR)
Hydric soil rating: No

63D—Wintley silt loam, 15 to 30 percent slopes

Map Unit Setting
National map unit symbol: 21qk
Elevation: 50 to 420 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wintley and similar soils: 75 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wintley

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 5 inches: silt loam
H2 - 5 to 48 inches: silty clay loam
H3 - 48 to 61 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Well Drained > 15% Slopes (G001XY003OR)
Hydric soil rating: No

65—Zyzzug silt loam

Map Unit Setting

National map unit symbol: 21qm
Elevation: 50 to 120 feet
Mean annual precipitation: 50 to 70 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Zyzzug and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zyzzug

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 30 inches: silty clay loam
H3 - 30 to 45 inches: silty clay
H4 - 45 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Other vegetative classification: Poorly Drained (G001XY008OR)
Hydric soil rating: Yes

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Physical Soil Properties (Powers Area)

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as

a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
10B—Chismore silt loam, 3 to 7 percent slopes														
Chismore	0-14	-25-	-53-	18-23- 27	1.10-1.18-1.25	1.40-3.00-4.00	0.19-0.20-0.21	3.0- 4.5- 5.9	4.0- 6.0-8.0	.37	.37	5	6	48
	14-60	- 7-	-54-	35-39- 45	1.20-1.33-1.45	0.42-0.91-1.40	0.15-0.17-0.18	6.0- 7.5- 8.9	1.0- 2.5-4.0	.32	.32			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
14F—Digger-Preacher-Umpcoos association, 50 to 80 percent slopes														
Digger	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			3	7	38
	1-7	-42-	-38-	15-20- 25	0.90-1.00-1.10	14.00-28.00-42.00	0.10-0.12-0.14	0.0- 1.5- 2.9	3.0- 4.0- 5.0	.15	.24			
	7-10	-42-	-38-	15-20- 25	0.95-1.03-1.10	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	1.0- 2.5- 4.0	.10	.28			
	10-32	-42-	-38-	15-20- 25	1.00-1.20-1.40	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	0.2- 1.1- 2.0	.10	.32			
	32-42	—	—	—	—	—	—	—	—					
Preacher	0-4	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			5	6	48
	4-18	-39-	-37-	20-24- 27	0.85-0.90-0.95	4.00-9.00-14.00	0.25-0.30-0.35	0.0- 1.5- 2.9	5.0- 6.5- 8.0	.28	.28			
	18-52	-34-	-37-	25-30- 35	1.10-1.20-1.30	4.00-9.00-14.00	0.16-0.19-0.21	3.0- 4.5- 5.9	0.5- 1.8- 3.0	.28	.28			
	52-64	-34-	-38-	7-28- 30	1.20-1.25-1.30	14.00-28.00-42.00	0.10-0.14-0.17	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.32	.32			
Umpcoos	0-2	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			1	6	48
	2-5	-64-	-31-	2- 6- 10	1.00-1.10-1.20	14.00-28.00-42.00	0.04-0.05-0.06	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.10	.32			
	5-18	-68-	-24-	2- 9- 15	1.00-1.10-1.20	14.00-28.00-42.00	0.04-0.07-0.10	0.0- 1.5- 2.9	0.5- 1.3- 2.0	.10	.37			
	18-22	—	—	—	—	—	—	—	—					

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
15F—Digger-Umpcoos-Rock outcrop association, 50 to 90 percent slopes														
Digger	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			3	7	38
	1-7	-42-	-38-	15-20- 25	0.90-1.00-1.10	14.00-28.00-42.00	0.10-0.12-0.14	0.0- 1.5- 2.9	3.0- 4.0- 5.0	.15	.24			
	7-10	-42-	-38-	15-20- 25	0.95-1.03-1.10	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	1.0- 2.5- 4.0	.10	.28			
	10-32	-42-	-38-	15-20- 25	1.00-1.20-1.40	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	0.2- 1.1- 2.0	.10	.32			
	32-42	—	—	—	—	—	—	—	—					
Rock outcrop	0-60	—	—	—	—	—	—	—	—					
Umpcoos	0-2	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			1	6	48
	2-5	-64-	-31-	2- 6- 10	1.00-1.10-1.20	14.00-28.00-42.00	0.04-0.05-0.06	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.10	.32			
	5-18	-68-	-24-	2- 9- 15	1.00-1.10-1.20	14.00-28.00-42.00	0.04-0.07-0.10	0.0- 1.5- 2.9	0.5- 1.3- 2.0	.10	.37			
	18-22	—	—	—	—	—	—	—	—					

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
17B—Eilertsen silt loam, 0 to 7 percent slopes														
Eilertsen	0-11	-14-	-70-	12-16- 20	1.10-1.20-1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	2.0- 3.5- 5.0	.43	.43	5	5	56
	11-59	- 9-	-65-	18-27- 35	1.20-1.25-1.30	4.00-9.00-14.00	0.19-0.20-0.21	3.0- 4.5- 5.9	0.5- 0.8- 1.0	.49	.49			
	59-65	-63-	-19-	10-18- 25	1.20-1.25-1.30	4.00-9.00-14.00	0.15-0.18-0.21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.28	.28			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
22E—Etelka-Whobrey-Remote complex, 30 to 60 percent slopes														
Etelka	0-13	-25-	-52-	20-24- 27	0.90-0.95-1.00	4.00-9.00-14.00	0.20-0.22-0.23	0.0- 1.5- 2.9	2.0- 3.5- 5.0	.32	.32	5	6	48
	13-24	-24-	-50-	25-26- 40	1.20-1.30-1.40	1.40-3.00-4.00	0.19-0.20-0.21	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.43	.43			
	24-60	- 6-	-47-	35-48- 60	1.30-1.40-1.50	0.42-0.91-1.40	0.15-0.16-0.17	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.32	.32			
Whobrey	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			4	6	48
	1-12	- 9-	-67-	20-24- 27	0.90-0.95-1.00	4.00-9.00-14.00	0.19-0.20-0.21	0.0- 1.5- 2.9	2.0- 3.5- 5.0	.32	.32			
	12-21	- 9-	-66-	20-25- 30	1.10-1.20-1.30	4.00-9.00-14.00	0.19-0.20-0.21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.49	.49			
	21-61	-16-	-26-	50-58- 65	1.30-1.40-1.50	0.01-0.20-0.42	0.10-0.11-0.12	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.24	.24			
Remote	0-5	-42-	-38-	15-20- 25	1.20-1.35-1.50	4.00-9.00-14.00	0.14-0.16-0.17	0.0- 1.5- 2.9	2.0- 3.5- 5.0	.24	.24	4	6	48
	5-14	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.10-0.12-0.13	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.15	.32			
	14-45	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.08-0.10-0.11	0.0- 1.5- 2.9	0.2- 0.6- 1.0	.10	.32			
	45-68	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.08-0.10-0.11	0.0- 1.5- 2.9	0.2- 0.6- 1.0	.05	.32			
	68-78	—	—	—	—	—	—	—	—					

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
24—Gardiner sandy loam														
Gardiner	0-9	-67-	-24-	8- 9- 10	1.40-1.55-1.70	14.00-28.00-42.00	0.12-0.14-0.15	0.0- 1.5- 2.9	2.0- 2.5- 3.0	.24	.24	5	3	86
	9-60	-84-	- 9-	5- 8- 10	1.30-1.35-1.40	42.00-92.00-141.00	0.09-0.10-0.10	0.0- 1.5- 2.9	0.1- 1.5- 3.0	.05	.05			
25—Gauldy variant loam														
Gauldy, variant	0-10	-44-	-40-	10-16- 22	1.15-1.25-1.35	4.00-9.00-14.00	0.16-0.19-0.21	0.0- 1.5- 2.9	3.0- 4.5- 6.0	.32	.32	3	5	56
	10-17	-46-	-44-	5-10- 15	1.20-1.28-1.35	4.00-9.00-14.00	0.14-0.16-0.17	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43			
	17-28	-69-	-24-	5- 8- 10	1.20-1.35-1.50	14.00-28.00-42.00	0.07-0.08-0.09	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.10	.28			
	28-60	-82-	-11-	4- 7- 10	1.20-1.33-1.45	14.00-78.00-141.00	0.04-0.05-0.06	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.02	.02			
37C—Meda loam, 3 to 15 percent slopes														
Meda	0-10	-40-	-38-	20-23- 25	1.30-1.33-1.35	4.00-9.00-14.00	0.14-0.16-0.17	0.0- 1.5- 2.9	1.0- 3.0- 5.0	.28	.28	4	6	48
	10-32	-35-	-38-	20-28- 35	1.30-1.33-1.35	4.00-9.00-14.00	0.08-0.11-0.14	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.15	.32			
	32-60	-47-	-44-	3- 9- 15	1.25-1.28-1.30	42.00-92.00-141.00	0.07-0.09-0.10	0.0- 1.5- 2.9	0.1- 0.3- 0.5	.15	.43			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
45E—Preacher-Blachly-Digger association, 30 to 60 percent slopes														
Preacher	0-4	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			5	6	48
	4-18	-39-	-37-	20-24- 27	0.85-0.90-0.95	4.00-9.00-14.00	0.25-0.30-0.35	0.0- 1.5- 2.9	5.0- 6.5-8.0	.28	.28			
	18-52	-34-	-37-	25-30- 35	1.10-1.20-1.30	4.00-9.00-14.00	0.16-0.19-0.21	3.0- 4.5- 5.9	0.5- 1.8-3.0	.28	.28			
	52-64	-34-	-38-	7-28- 30	1.20-1.25-1.30	14.00-28.00-42.00	0.10-0.14-0.17	0.0- 1.5- 2.9	0.0- 0.3-0.5	.32	.32			
Blachly	0-7	-19-	-48-	27-34- 40	1.10-1.15-1.20	4.00-9.00-14.00	0.17-0.19-0.21	0.0- 1.5- 2.9	3.0- 4.5-6.0	.32	.32	5	6	48
	7-52	- 7-	-48-	40-45- 50	1.10-1.20-1.30	1.40-3.00-4.00	0.11-0.12-0.13	3.0- 4.5- 5.9	1.0- 2.0-3.0	.28	.28			
	52-60	- 7-	-53-	35-40- 45	1.10-1.20-1.30	1.40-3.00-4.00	0.14-0.17-0.20	3.0- 4.5- 5.9	0.0- 0.3-0.5	.37	.37			
Digger	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			3	7	38
	1-7	-42-	-38-	15-20- 25	0.90-1.00-1.10	14.00-28.00-42.00	0.10-0.12-0.14	0.0- 1.5- 2.9	3.0- 4.0-5.0	.15	.24			
	7-10	-42-	-38-	15-20- 25	0.95-1.03-1.10	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	1.0- 2.5-4.0	.10	.28			
	10-32	-42-	-38-	15-20- 25	1.00-1.20-1.40	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	0.2- 1.1-2.0	.10	.32			
	32-42	—	—	—	—	—	—	—	—					

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
47B—Pyburn silty clay, 0 to 8 percent slopes														
Pyburn	0-7	- 7-	-48-	40-45- 50	1.20-1.25-1.30	0.42-0.91-1.40	0.15-0.16-0.17	6.0- 7.5- 8.9	5.0- 7.5-10.0	.28	.28	5	4	86
	7-38	-12-	-28-	50-60- 70	1.25-1.33-1.40	0.01-0.20-0.42	0.14-0.16-0.17	6.0- 7.5- 8.9	2.0- 3.5- 5.0	.20	.20			
	38-60	-28-	-30-	35-43- 50	1.20-1.28-1.35	0.42-0.91-1.40	0.14-0.18-0.21	6.0- 7.5- 8.9	0.5- 1.3- 2.0	.24	.24			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
50D—Remote-Digger-Preacher complex, 12 to 30 percent slopes														
Remote	0-5	-42-	-38-	15-20- 25	1.20-1.35-1.50	4.00-9.00-14.00	0.14-0.16-0.17	0.0- 1.5- 2.9	2.0- 3.5-5.0	.24	.24	4	6	48
	5-14	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.10-0.12-0.13	0.0- 1.5- 2.9	1.0- 1.5-2.0	.15	.32			
	14-45	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.08-0.10-0.11	0.0- 1.5- 2.9	0.2- 0.6-1.0	.10	.32			
	45-68	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.08-0.10-0.11	0.0- 1.5- 2.9	0.2- 0.6-1.0	.05	.32			
	68-78	—	—	—	—	—	—	—	—					
Digger	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			3	7	38
	1-7	-42-	-38-	15-20- 25	0.90-1.00-1.10	14.00-28.00-42.00	0.10-0.12-0.14	0.0- 1.5- 2.9	3.0- 4.0-5.0	.15	.24			
	7-10	-42-	-38-	15-20- 25	0.95-1.03-1.10	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	1.0- 2.5-4.0	.10	.28			
	10-32	-42-	-38-	15-20- 25	1.00-1.20-1.40	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	0.2- 1.1-2.0	.10	.32			
	32-42	—	—	—	—	—	—	—	—					
Preacher	0-4	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			5	6	48
	4-18	-39-	-37-	20-24- 27	0.85-0.90-0.95	4.00-9.00-14.00	0.25-0.30-0.35	0.0- 1.5- 2.9	5.0- 6.5-8.0	.28	.28			
	18-52	-34-	-37-	25-30- 35	1.10-1.20-1.30	4.00-9.00-14.00	0.16-0.19-0.21	3.0- 4.5- 5.9	0.5- 1.8-3.0	.28	.28			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
	52-64	-34-	-38-	7-28- 30	1.20-1.25-1.30	14.00-28.00-42.00	0.10-0.14-0.17	0.0- 1.5- 2.9	0.0- 0.3-0.5	.32	.32			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
50E—Remote-Digger-Preacher complex, 30 to 50 percent slopes														
Remote	0-5	-42-	-38-	15-20- 25	1.20-1.35-1.50	4.00-9.00-14.00	0.14-0.16-0.17	0.0- 1.5- 2.9	2.0- 3.5-5.0	.24	.24	4	6	48
	5-14	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.10-0.12-0.13	0.0- 1.5- 2.9	1.0- 1.5-2.0	.15	.32			
	14-45	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.08-0.10-0.11	0.0- 1.5- 2.9	0.2- 0.6-1.0	.10	.32			
	45-68	-35-	-38-	22-28- 33	1.30-1.40-1.50	4.00-9.00-14.00	0.08-0.10-0.11	0.0- 1.5- 2.9	0.2- 0.6-1.0	.05	.32			
	68-78	—	—	—	—	—	—	—	—					
Digger	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			3	7	38
	1-7	-42-	-38-	15-20- 25	0.90-1.00-1.10	14.00-28.00-42.00	0.10-0.12-0.14	0.0- 1.5- 2.9	3.0- 4.0-5.0	.15	.24			
	7-10	-42-	-38-	15-20- 25	0.95-1.03-1.10	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	1.0- 2.5-4.0	.10	.28			
	10-32	-42-	-38-	15-20- 25	1.00-1.20-1.40	14.00-28.00-42.00	0.10-0.11-0.12	0.0- 1.5- 2.9	0.2- 1.1-2.0	.10	.32			
	32-42	—	—	—	—	—	—	—	—					
Preacher	0-4	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			5	6	48
	4-18	-39-	-37-	20-24- 27	0.85-0.90-0.95	4.00-9.00-14.00	0.25-0.30-0.35	0.0- 1.5- 2.9	5.0- 6.5-8.0	.28	.28			
	18-52	-34-	-37-	25-30- 35	1.10-1.20-1.30	4.00-9.00-14.00	0.16-0.19-0.21	3.0- 4.5- 5.9	0.5- 1.8-3.0	.28	.28			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
	52-64	-34-	-38-	7-28- 30	1.20-1.25-1.30	14.00-28.00-42.00	0.10-0.14-0.17	0.0- 1.5- 2.9	0.0- 0.3-0.5	.32	.32			
57—Udorthents, level														
Udorthents	—	—	—	—	—	—	—	—	—					
63B—Wintley silt loam, 0 to 8 percent slopes														
Wintley	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			4	6	48
	1-5	-25-	-52-	20-24- 27	1.10-1.18-1.25	4.00-9.00-14.00	0.19-0.20-0.21	0.0- 1.5- 2.9	3.0- 4.5-6.0	.37	.37			
	5-48	- 7-	-54-	35-39- 50	1.20-1.33-1.45	1.40-3.00-4.00	0.15-0.16-0.17	6.0- 7.5- 8.9	2.0- 3.0-4.0	.28	.28			
	48-61	-44-	-41-	10-15- 20	1.15-1.23-1.30	4.00-9.00-14.00	0.07-0.09-0.10	0.0- 1.5- 2.9	0.0- 0.3-0.5	.17	.43			
63D—Wintley silt loam, 15 to 30 percent slopes														
Wintley	0-1	-35-	-50-	0-15- 25	0.10-0.20-0.30	42.00-373.00-705.00	0.30-0.45-0.60	—	60.0-75.0-95.0			4	6	48
	1-5	-25-	-52-	20-24- 27	1.10-1.18-1.25	4.00-9.00-14.00	0.19-0.20-0.21	0.0- 1.5- 2.9	3.0- 4.5-6.0	.37	.37			
	5-48	- 7-	-54-	35-39- 50	1.20-1.33-1.45	1.40-3.00-4.00	0.15-0.16-0.17	6.0- 7.5- 8.9	2.0- 3.0-4.0	.28	.28			
	48-61	-44-	-41-	10-15- 20	1.15-1.23-1.30	4.00-9.00-14.00	0.07-0.09-0.10	0.0- 1.5- 2.9	0.0- 0.3-0.5	.17	.43			

Physical Soil Properties–Coos County, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
65—Zyzzug silt loam														
Zyzzug	0-12	- 9-	-67-	20-24- 27	1.10-1.18-1.25	4.00-9.00-14.00	0.19-0.20-0.21	0.0- 1.5- 2.9	4.0- 6.0- 8.0	.37	.37	5	6	48
	12-30	- 7-	-63-	25-30- 35	1.20-1.25-1.30	4.00-9.00-14.00	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 2.5- 4.0	.37	.37			
	30-45	- 8-	-54-	30-38- 45	1.25-1.35-1.45	1.40-3.00-4.00	0.15-0.18-0.21	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.37	.37			
	45-60	- 8-	-59-	25-33- 40	1.30-1.35-1.40	1.40-3.00-4.00	0.19-0.20-0.21	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.43	.43			
W—Water														
Water	—	—	—	—	—	—	—	—	—					

Engineering Properties (Powers Area)

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	**Pct. of map unit**	**Hydrologic group**	**Depth**	**USDA texture**	**Classification**		**Pct Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
					Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
10B—Chismore silt loam, 3 to 7 percent slopes														
Chismore	80	D	0-14	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	80-88-95	25-30-35	10-13-15
			14-60	Silty clay loam, silty clay	CL	A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	85-90-95	40-45-50	20-25-30

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
14F—Digger-Preacher-Umpcoos association, 50 to 80 percent slopes														
Digger	30	B	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-7	Gravelly loam	GM, ML, SM	A-4	0- 0- 0	0- 8- 15	60-73-85	60-65-70	50-58-65	40-50-60	30-35-40	NP-5-10
			7-10	Gravelly loam, very gravelly loam	GM, ML, SM	A-2, A-4	0- 0- 0	0-13- 25	45-65-85	35-55-75	30-50-70	25-43-60	30-35-40	NP-5-10
			10-32	Very gravelly loam, very cobbly silt loam, extremely gravelly loam, extremely cobbly loam	SM, GM	A-2, A-4	0- 3- 5	10-33-55	35-60-85	30-53-75	25-45-65	20-35-50	35-38-40	5-7 -10
			32-42	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Preacher	30	B	0-4	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			4-18	Loam	ML	A-6, A-4	0- 0- 0	0- 3- 5	95-98-100	90-95-100	80-90-100	60-70-80	30-35-40	5-10-15
			18-52	Loam, clay loam	MH, ML	A-7	0- 0- 0	0- 3- 5	90-95-100	80-90-100	70-85-100	55-68-80	45-53-60	10-15-20
			52-64	Sandy loam, loam, clay loam	ML, SM	A-2, A-4	0- 0- 0	0- 8- 15	85-93-100	80-88-100	45-70-95	30-53-75	0-5 -10	NP
Umpcoos	25	D	0-2	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			2-5	Very gravelly sandy loam	GM	A-1	0- 0- 0	0- 8- 15	30-43-55	25-38-50	15-25-35	10-15-20	0-5 -10	NP

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
			5-18	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam, very gravelly loam	GM	A-1, A-2, A-4	0- 0- 0	10-25-40	40-58-75	35-48-60	25-40-55	15-33-50	20-23-25	NP-3 -5
			18-22	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
15F—Digger-Umpcoos-Rock outcrop association, 50 to 90 percent slopes														
Digger	30	B	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-7	Gravelly loam	GM, ML, SM	A-4	0- 0- 0	0- 8- 15	60-73-85	60-65-70	50-58-65	40-50-60	30-35-40	NP-5-10
			7-10	Gravelly loam, very gravelly loam	GM, ML, SM	A-2, A-4	0- 0- 0	0-13- 25	45-65-85	35-55-75	30-50-70	25-43-60	30-35-40	NP-5-10
			10-32	Very gravelly loam, very cobbly silt loam, extremely gravelly loam, extremely cobbly loam	SM, GM	A-2, A-4	0- 3- 5	10-33-55	35-60-85	30-53-75	25-45-65	20-35-50	35-38-40	5-7 -10
			32-42	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Rock outcrop	25		0-60	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Umpcoos	25	D	0-2	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			2-5	Very gravelly sandy loam	GM	A-1	0- 0- 0	0- 8- 15	30-43-55	25-38-50	15-25-35	10-15-20	0-5 -10	NP
			5-18	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam, very gravelly loam	GM	A-1, A-2, A-4	0- 0- 0	10-25-40	40-58-75	35-48-60	25-40-55	15-33-50	20-23-25	NP-3 -5
			18-22	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
17B—Eilertsen silt loam, 0 to 7 percent slopes														
Eilertsen	75	B	0-11	Silt loam	CL, CL-ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-80-85	25-28-30	5-8 -10
			11-59	Silt loam, silty clay loam, clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-85-95	30-35-40	10-15-20
			59-65	Fine sandy loam, loam, silt loam	CL, CL-ML, SC, SC-SM	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	40-65-90	20-25-30	5-8 -10

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
22E—Etelka-Whobrey-Remote complex, 30 to 60 percent slopes														
Etelka	40	C	0-13	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	90-95-100	85-93-100	65-78-90	30-35-40	5-7 -10
			13-24	Silty clay loam, silt loam	ML	A-7	0- 0- 0	0- 3- 5	90-95-100	85-93-100	80-90-100	75-85-95	40-45-50	10-13-15
			24-60	Silty clay, silty clay loam, clay	MH	A-7	0- 0- 0	0- 3- 5	90-95-100	85-93-100	80-90-100	75-85-95	50-60-70	15-23-30
Whobrey	25	D	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-12	Silt loam	ML	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	80-85-90	30-35-40	5-10-15
			12-21	Silt loam, silty clay loam	ML	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	80-88-95	30-35-40	5-10-15
			21-61	Clay, silty clay	CH	A-7	0- 0- 0	0- 0- 0	100-100-100	95-98-100	85-93-100	70-83-95	55-63-70	35-40-45
Remote	15	B	0-5	Loam	ML	A-4	0- 0- 0	0- 3- 5	85-90-95	80-88-95	70-78-85	55-60-65	25-30-35	NP-5 -10
			5-14	Gravelly clay loam, gravelly loam	GM, ML, SM	A-4, A-6	0- 0- 0	5- 8- 10	65-75-85	60-70-80	55-68-80	40-50-60	30-35-40	5-10-15
			14-45	Very gravelly clay loam, extremely gravelly loam, very gravelly loam, extremely gravelly clay loam	GM	A-2, A-4, A-6	0- 0- 0	5-13- 20	35-48-60	30-43-55	25-40-55	20-33-45	30-35-40	5-10-15

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
			45-68	Very gravelly clay loam, extremely gravelly loam, very gravelly loam, extremely gravelly clay loam	GM	A-2, A-4, A-6	0- 0- 0	5-13- 20	35-48-60	30-43-55	25-40-55	20-33-45	30-35 -40	5-10-15
			68-78	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
24—Gardiner sandy loam														
Gardiner	85	A	0-9	Sandy loam	SM	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	65-75-85	35-43-50	0-5 -10	NP
			9-60	Loamy fine sand, loamy sand, fine sand	SM	A-2	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	50-63-75	15-25-35	0-5 -10	NP

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
25—Gauldy variant loam														
Gauldy, variant	75	B	0-10	Loam	ML, CL-ML	A-4	0- 0- 0	0- 0- 0	90-95-100	85-93-100	70-83-95	50-70-90	25-30 -35	5-7 -10
			10-17	Loam, sandy loam, very gravelly sandy loam, very gravelly loam, gravelly sandy loam, gravelly loam	ML, SM	A-2, A-4	0- 0- 0	0- 5- 10	90-95-100	85-93-100	50-73-95	25-50-75	20-25 -30	NP-3 -5
			17-28	Very gravelly sandy loam, stratified extremely gravelly sand to extremely gravelly loamy coarse sand to very gravelly loamy sand to very gravelly	GM	A-1, A-2	0- 0- 0	10-13-15	40-50-60	40-48-55	35-43-50	20-25-30	0-5 -10	NP
			28-60	Very gravelly loamy coarse sand, stratified extremely gravelly sand to extremely gravelly loamy coarse sand to very gravelly loamy sand	GM, GP-GM, GW-GM	A-1	0- 0- 0	15-18-20	35-45-55	25-35-45	10-18-25	5-10- 15	0-5 -10	NP

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
37C—Meda loam, 3 to 15 percent slopes														
Meda	85	B	0-10	Loam	ML	A-4	0- 0- 0	0- 0- 0	80-85-90	75-80-85	60-68-75	50-58-65	25-33-40	NP-5-10
			10-32	Gravelly clay loam, gravelly loam, clay loam	GM, ML, SM	A-2, A-4	0- 0- 0	0-13- 25	55-68-80	50-63-75	40-55-70	25-40-55	30-35-40	NP-5-10
			32-60	Very gravelly sandy loam, very gravelly loam, gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2	0- 0- 0	0-13- 25	25-50-75	20-45-70	10-35-60	10-23-35	15-18-20	NP-3 -5

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
45E—Preacher-Blachly-Digger association, 30 to 60 percent slopes														
Preacher	35	B	0-4	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			4-18	Loam	ML	A-6, A-4	0- 0- 0	0- 3- 5	95-98-100	90-95-100	80-90-100	60-70-80	30-35-40	5-10-15
			18-52	Loam, clay loam	MH, ML	A-7	0- 0- 0	0- 3- 5	90-95-100	80-90-100	70-85-100	55-68-80	45-53-60	10-15-20
			52-64	Sandy loam, loam, clay loam	ML, SM	A-2, A-4	0- 0- 0	0- 8- 15	85-93-100	80-88-100	45-70-95	30-53-75	0-5 -10	NP
Blachly	25	C	0-7	Silty clay loam	MH	A-5, A-7	0- 0- 0	0- 0- 0	100-100-100	95-98-100	95-98-100	85-90-95	50-58-65	5-10-15
			7-52	Silty clay, clay	MH	A-7	0- 0- 0	0- 0- 0	85-93-100	75-88-100	65-83-100	50-70-90	50-58-65	10-15-20
			52-60	Silty clay, clay, silty clay loam	MH	A-7	0- 0- 0	0- 0- 0	85-93-100	75-88-100	65-83-100	50-70-90	50-58-65	10-15-20
Digger	25	B	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-7	Gravelly loam	GM, ML, SM	A-4	0- 0- 0	0- 8- 15	60-73-85	60-65-70	50-58-65	40-50-60	30-35-40	NP-5-10
			7-10	Gravelly loam, very gravelly loam	GM, ML, SM	A-2, A-4	0- 0- 0	0-13- 25	45-65-85	35-55-75	30-50-70	25-43-60	30-35-40	NP-5-10
			10-32	Very gravelly loam, very cobbly silt loam, extremely gravelly loam, extremely cobbly loam	SM, GM	A-2, A-4	0- 3- 5	10-33-55	35-60-85	30-53-75	25-45-65	20-35-50	35-38-40	5-7 -10
			32-42	Weathered bedrock	—	—	—	—	—	—	—	—	—	—

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
47B—Pyburn silty clay, 0 to 8 percent slopes														
Pyburn	85	D	0-7	Silty clay	CL	A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	90-93-95	40-45-50	20-23-25
			7-38	Clay, silty clay, silty clay loam	CH	A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	85-90-95	50-55-60	25-30-35
			38-60	Clay, silty clay, clay loam	CH, CL	A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	70-83-95	40-48-55	20-25-30

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
50D—Remote-Digger-Preacher complex, 12 to 30 percent slopes														
Remote	35	B	0-5	Loam	ML	A-4	0- 0- 0	0- 3- 5	85-90-95	80-88-95	70-78-85	55-60-65	25-30-35	NP-5-10
			5-14	Gravelly clay loam, gravelly loam	GM, ML, SM	A-4, A-6	0- 0- 0	5- 8- 10	65-75-85	60-70-80	55-68-80	40-50-60	30-35-40	5-10-15
			14-45	Very gravelly clay loam, extremely gravelly loam, very gravelly loam, extremely gravelly clay loam	GM	A-2, A-4, A-6	0- 0- 0	5-13- 20	35-48-60	30-43-55	25-40-55	20-33-45	30-35-40	5-10-15
			45-68	Very gravelly clay loam, extremely gravelly loam, very gravelly loam, extremely gravelly clay loam	GM	A-2, A-4, A-6	0- 0- 0	5-13- 20	35-48-60	30-43-55	25-40-55	20-33-45	30-35-40	5-10-15

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
			68-78	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Digger	30	B	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-7	Gravelly loam	GM, ML, SM	A-4	0- 0- 0	0- 8- 15	60-73-85	60-65-70	50-58-65	40-50-60	30-35-40	NP-5-10
			7-10	Gravelly loam, very gravelly loam	GM, ML, SM	A-2, A-4	0- 0- 0	0-13- 25	45-65-85	35-55-75	30-50-70	25-43-60	30-35-40	NP-5-10
			10-32	Very gravelly loam, very cobbly silt loam, extremely gravelly loam, extremely cobbly loam	SM, GM	A-2, A-4	0- 3- 5	10-33-55	35-60-85	30-53-75	25-45-65	20-35-50	35-38-40	5-7 -10
			32-42	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Preacher	25	B	0-4	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			4-18	Loam	ML	A-6, A-4	0- 0- 0	0- 3- 5	95-98-100	90-95-100	80-90-100	60-70-80	30-35-40	5-10-15
			18-52	Loam, clay loam	MH, ML	A-7	0- 0- 0	0- 3- 5	90-95-100	80-90-100	70-85-100	55-68-80	45-53-60	10-15-20
			52-64	Sandy loam, loam, clay loam	ML, SM	A-2, A-4	0- 0- 0	0- 8- 15	85-93-100	80-88-100	45-70-95	30-53-75	0-5 -10	NP

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
50E—Remote-Digger-Preacher complex, 30 to 50 percent slopes														
Remote	35	B	0-5	Loam	ML	A-4	0- 0- 0	0- 3- 5	85-90-95	80-88-95	70-78-85	55-60-65	25-30-35	NP-5-10
			5-14	Gravelly clay loam, gravelly loam	GM, ML, SM	A-4, A-6	0- 0- 0	5- 8- 10	65-75-85	60-70-80	55-68-80	40-50-60	30-35-40	5-10-15
			14-45	Very gravelly clay loam, extremely gravelly loam, very gravelly loam, extremely gravelly clay loam	GM	A-2, A-4, A-6	0- 0- 0	5-13- 20	35-48-60	30-43-55	25-40-55	20-33-45	30-35-40	5-10-15
			45-68	Very gravelly clay loam, extremely gravelly loam, very gravelly loam, extremely gravelly clay loam	GM	A-2, A-4, A-6	0- 0- 0	5-13- 20	35-48-60	30-43-55	25-40-55	20-33-45	30-35-40	5-10-15

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
			68-78	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Digger	25	B	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-7	Gravelly loam	GM, ML, SM	A-4	0- 0- 0	0- 8- 15	60-73-85	60-65-70	50-58-65	40-50-60	30-35-40	NP-5-10
			7-10	Gravelly loam, very gravelly loam	GM, ML, SM	A-2, A-4	0- 0- 0	0-13- 25	45-65-85	35-55-75	30-50-70	25-43-60	30-35-40	NP-5-10
			10-32	Very gravelly loam, very cobbly silt loam, extremely gravelly loam, extremely cobbly loam	SM, GM	A-2, A-4	0- 3- 5	10-33-55	35-60-85	30-53-75	25-45-65	20-35-50	35-38-40	5-7 -10
			32-42	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Preacher	20	B	0-4	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			4-18	Loam	ML	A-6, A-4	0- 0- 0	0- 3- 5	95-98-100	90-95-100	80-90-100	60-70-80	30-35-40	5-10-15
			18-52	Loam, clay loam	MH, ML	A-7	0- 0- 0	0- 3- 5	90-95-100	80-90-100	70-85-100	55-68-80	45-53-60	10-15-20
			52-64	Sandy loam, loam, clay loam	ML, SM	A-2, A-4	0- 0- 0	0- 8- 15	85-93-100	80-88-100	45-70-95	30-53-75	0-5 -10	NP

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
63B—Wintley silt loam, 0 to 8 percent slopes														
Wintley	85	C	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-5	Silt loam	CL, CL-ML	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	85-93-100	80-90-100	70-80-90	25-30-35	5-10-15
			5-48	Silty clay loam, silty clay, clay	CH, CL	A-7	0- 0- 0	0- 0- 0	90-95-100	75-88-100	70-85-100	60-78-95	40-48-55	20-25-30
			48-61	Very gravelly loam, very gravelly sandy loam, gravelly loam	GM, SM	A-1, A-2, A-4	0- 0- 0	0- 5- 10	40-53-65	30-45-60	25-40-55	15-28-40	20-25-30	NP-3 -5
63D—Wintley silt loam, 15 to 30 percent slopes														
Wintley	75	C	0-1	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	60-75-100	50-65-90	—	—
			1-5	Silt loam	CL, CL-ML	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	85-93-100	80-90-100	70-80-90	25-30-35	5-10-15
			5-48	Silty clay loam, silty clay, clay	CH, CL	A-7	0- 0- 0	0- 0- 0	90-95-100	75-88-100	70-85-100	60-78-95	40-48-55	20-25-30
			48-61	Very gravelly loam, very gravelly sandy loam, gravelly loam	GM, SM	A-1, A-2, A-4	0- 0- 0	0- 5- 10	40-53-65	30-45-60	25-40-55	15-28-40	20-25-30	NP-3 -5

Engineering Properties–Coos County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
65—Zyzzug silt loam														
Zyzzug	80	C/D	0-12	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-83-90	30-33-35	5-7 -10
			12-30	Silty clay loam, silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-83-90	30-35-40	10-13-15
			30-45	Silty clay loam, silty clay	CL	A-6, A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	85-90-95	35-43-50	15-20-25
			45-60	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-83-90	35-40-45	15-18-20

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