



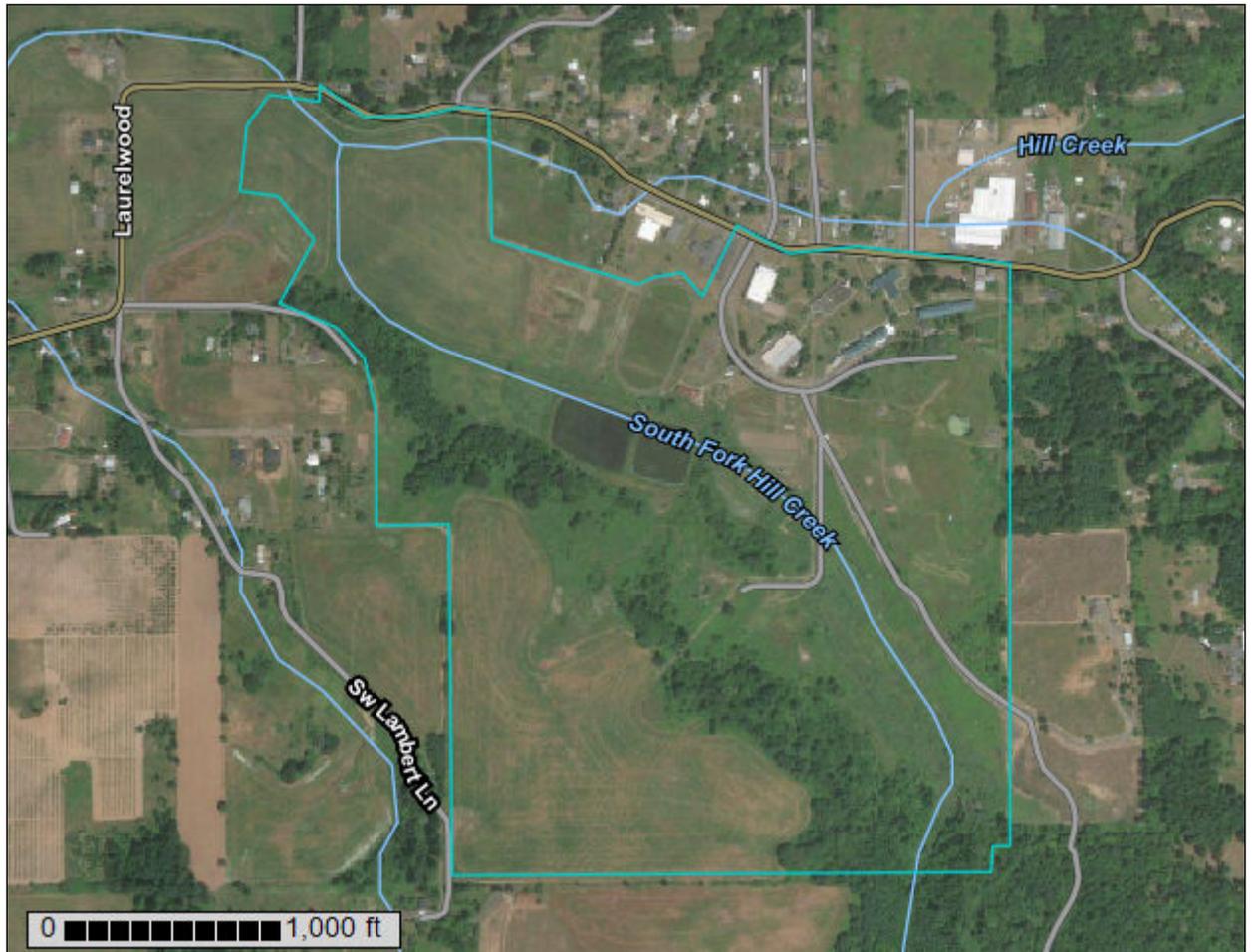
United States
Department of
Agriculture

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 **Washington County, Oregon**



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 (<https://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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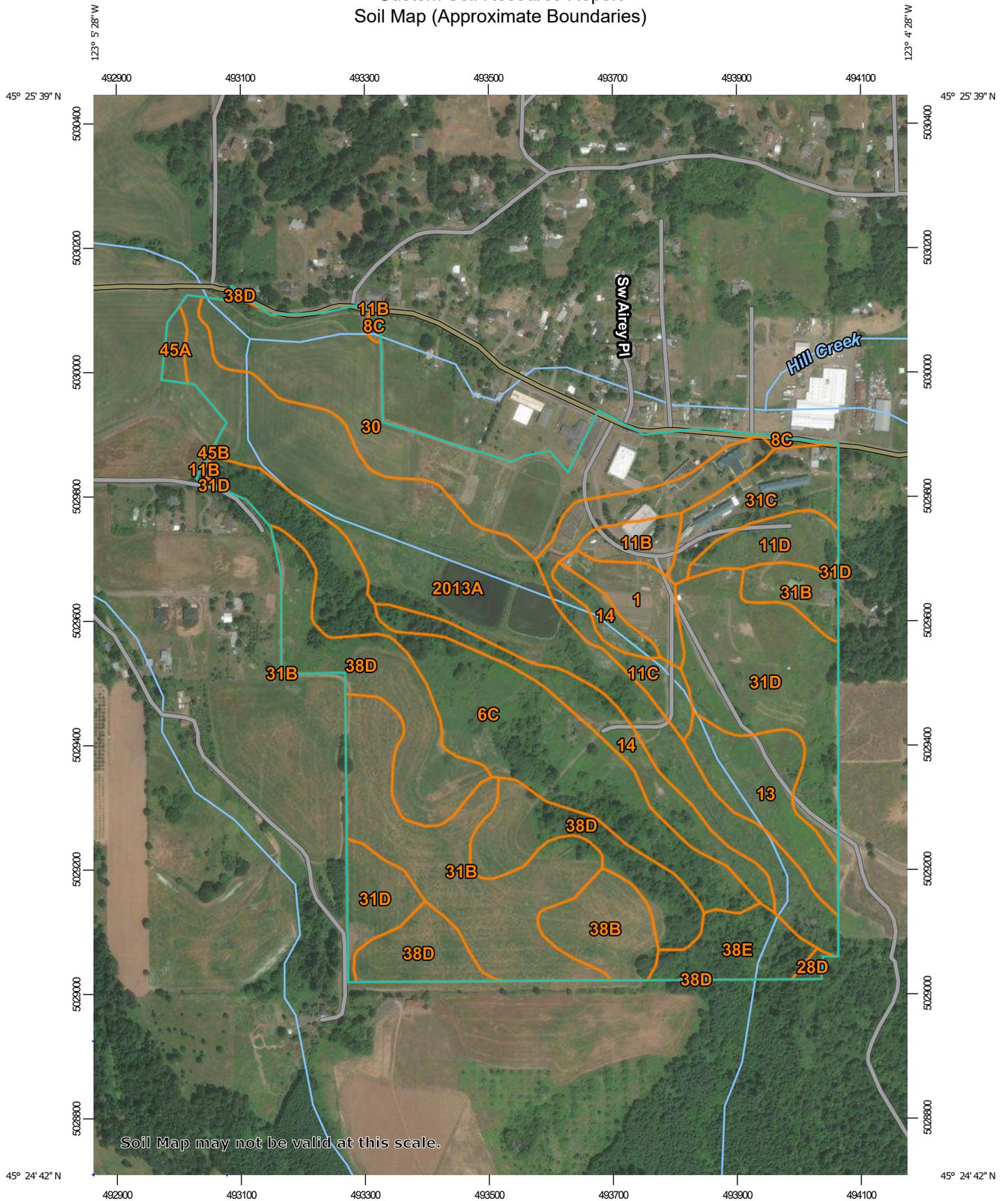
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Soil Map

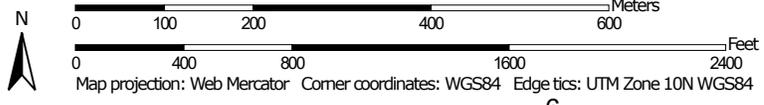
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (Approximate Boundaries)



Soil Map may not be valid at this scale.

Map Scale: 1:8,460 if printed on A portrait (8.5" x 11") sheet.



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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Washington County, Oregon
 Survey Area Data: Version 17, Sep 10, 2019

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

Date(s) aerial images were photographed: Apr 16, 2015—Feb 12, 2017

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 (Approximate Boundaries)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Aloha silt loam	3.9	1.9%
6C	Carlton silt loam, 7 to 12 percent slopes	24.2	12.0%
8C	Chehalem silty clay loam	0.5	0.3%
11B	Cornelius and Kinton silt loams, 2 to 7 percent slopes	2.6	1.3%
11C	Cornelius and Kinton silt loams, 7 to 12 percent slopes	8.0	4.0%
11D	Cornelius and Kinton silt loams, 12 to 20 percent slopes	4.0	2.0%
13	Cove silty clay loam	7.5	3.7%
14	Cove clay	9.3	4.6%
28D	Laurelwood silt loam, 12 to 20 percent slopes	0.4	0.2%
30	McBee silty clay loam	24.3	12.1%
31B	Melbourne silty clay loam, 2 to 7 percent slopes	20.7	10.3%
31C	Melbourne silty clay loam, 7 to 12 percent slopes	6.4	3.2%
31D	Melbourne silty clay loam, 12 to 20 percent slopes	19.5	9.7%
38B	Saum silt loam, 2 to 7 percent slopes	5.6	2.8%
38D	Saum silt loam, 12 to 20 percent slopes	23.6	11.7%
38E	Saum silt loam, 20 to 30 percent slopes	5.3	2.6%
45A	Woodburn silt loam, 0 to 3 percent slopes	1.0	0.5%
45B	Woodburn silt loam, 3 to 7 percent slopes	0.0	0.0%
2013A	Wapato silty clay loam, 0 to 3 percent slopes	34.4	17.1%
Totals for Area of Interest		201.1	100.0%

Map Unit Descriptions (Approximate Boundaries)

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

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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.

Washington County, Oregon

1—Aloha silt loam

Map Unit Setting

National map unit symbol: 21x8
Elevation: 150 to 250 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Aloha and similar soils: 90 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aloha

Setting

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

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 46 inches: silt loam
H3 - 46 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat 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 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: Somewhat Poorly Drained (G002XY005OR)
Hydric soil rating: No

Minor Components

Huberly

Percent of map unit: 1 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear

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Across-slope shape: Linear
Hydric soil rating: Yes

6C—Carlton silt loam, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 220m
Elevation: 150 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Carlton and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlton

Setting

Landform: Hills
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium

Typical profile

H1 - 0 to 22 inches: silt loam
H2 - 22 to 48 inches: silty clay loam
H3 - 48 to 65 inches: silty clay

Properties and qualities

Slope: 7 to 12 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 high (0.20 to 0.57 in/hr)
Depth to water table: About 24 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

8C—Chehalem silty clay loam

Map Unit Setting

National map unit symbol: 220t

Elevation: 150 to 300 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Chehalem and similar soils: 90 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chehalem

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey mixed alluvium

Typical profile

H1 - 0 to 20 inches: silty clay loam

H2 - 20 to 60 inches: silty clay

Properties and qualities

Slope: 3 to 12 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat poorly 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 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Forage suitability group: Somewhat Poorly Drained (G002XY005OR)

Hydric soil rating: No

Minor Components

Cove, silty clay loam surface

Percent of map unit: 2 percent

Landform: Flood plains

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Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

11B—Cornelius and Kinton silt loams, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: 21xb
Elevation: 250 to 1,400 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Cornelius and similar soils: 45 percent
Kinton and similar soils: 40 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cornelius

Setting

Landform: Hills
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over fine-silty old alluvium

Typical profile

H1 - 0 to 17 inches: silt loam
H2 - 17 to 38 inches: silty clay loam
H3 - 38 to 60 inches: silt loam

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 30 to 40 inches to fragipan
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 27 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C

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Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Description of Kinton

Setting

Landform: Hills
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over fine-silty old alluvium

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
H₁ - 1 to 11 inches: silt loam
H₂ - 11 to 31 inches: silt loam
H₃ - 31 to 61 inches: silt loam

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 31 to 41 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (K_{sat}): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 27 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Minor Components

Delena

Percent of map unit: 4 percent
Landform: Swales
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

11C—Cornelius and Kinton silt loams, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 21xc

Elevation: 250 to 1,400 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Cornelius and similar soils: 45 percent

Kinton and similar soils: 40 percent

Minor components: 4 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cornelius

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope, shoulder

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over fine-silty old alluvium

Typical profile

H1 - 0 to 17 inches: silt loam

H2 - 17 to 38 inches: silty clay loam

H3 - 38 to 60 inches: silt loam

Properties and qualities

Slope: 7 to 12 percent

Depth to restrictive feature: 30 to 40 inches to fragipan

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 27 to 37 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)

Hydric soil rating: No

Description of Kinton

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope, shoulder

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over fine-silty old alluvium

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material

H₁ - 1 to 11 inches: silt loam

H₂ - 11 to 31 inches: silt loam

H₃ - 31 to 61 inches: silt loam

Properties and qualities

Slope: 7 to 12 percent

Depth to restrictive feature: 31 to 41 inches to fragipan

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (K_{sat}): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 27 to 37 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)

Hydric soil rating: No

Minor Components

Delena

Percent of map unit: 4 percent

Landform: Swales

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

11D—Cornelius and Kinton silt loams, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: 21xd

Elevation: 250 to 1,400 feet

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Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Cornelius and similar soils: 45 percent
Kinton and similar soils: 40 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cornelius

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over fine-silty old alluvium

Typical profile

H1 - 0 to 17 inches: silt loam
H2 - 17 to 38 inches: silty clay loam
H3 - 38 to 60 inches: silt loam

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: 30 to 40 inches to fragipan
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 27 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Forage suitability group: Moderately Well Drained >15% Slopes (G002XY003OR)
Hydric soil rating: No

Description of Kinton

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over fine-silty old alluvium

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 11 inches: silt loam

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H2 - 11 to 31 inches: silt loam

H3 - 31 to 61 inches: silt loam

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: 31 to 41 inches to fragipan

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 27 to 37 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Forage suitability group: Moderately Well Drained >15% Slopes (G002XY003OR)

Hydric soil rating: No

Minor Components

Delena

Percent of map unit: 4 percent

Landform: Swales

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

13—Cove silty clay loam

Map Unit Setting

National map unit symbol: 21xl

Elevation: 100 to 300 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Cove and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cove

Setting

Landform: Flood plains

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

Typical profile

H1 - 0 to 8 inches: silty clay loam
H2 - 8 to 60 inches: clay

Properties and qualities

Slope: 0 to 1 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 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Cove, clay surface

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Labish

Percent of map unit: 3 percent
Landform: Flood plains, lakebeds (relict)
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Cove, peat substratum

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

14—Cove clay

Map Unit Setting

National map unit symbol: 21xm

Elevation: 100 to 300 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Cove and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cove

Setting

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Recent clayey alluvium

Typical profile

H1 - 0 to 8 inches: clay

H2 - 8 to 60 inches: clay

Properties and qualities

Slope: 0 to 1 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 12 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): 4w

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: D

Forage suitability group: Poorly Drained (G002XY006OR)

Hydric soil rating: Yes

Minor Components

Labish

Percent of map unit: 6 percent

Custom Soil Resource Report

Landform: Flood plains, lakebeds (relict)
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Cove, silty clay loam surface

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

28D—Laurelwood silt loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: 21yr
Elevation: 200 to 1,500 feet
Mean annual precipitation: 45 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Laurelwood and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Laurelwood

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 52 inches: silty clay loam
H3 - 52 to 72 inches: silty clay

Properties and qualities

Slope: 12 to 20 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

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Frequency of ponding: None

Available water storage in profile: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Forage suitability group: Well Drained > 15% Slopes (G002XY001OR)

Hydric soil rating: No

30—McBee silty clay loam

Map Unit Setting

National map unit symbol: 21yw

Elevation: 100 to 300 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Mcbee and similar soils: 85 percent

Minor components: 9 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbee

Setting

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium

Typical profile

H1 - 0 to 11 inches: silty clay loam

H2 - 11 to 45 inches: silty clay loam

H3 - 45 to 65 inches: clay loam

Properties and qualities

Slope: 0 to 3 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 high (0.20 to 0.57 in/hr)

Depth to water table: About 24 to 36 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w

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Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C

Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)

Hydric soil rating: No

Minor Components

Cove

Percent of map unit: 5 percent

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Wapato

Percent of map unit: 4 percent

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

31B—Melbourne silty clay loam, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: 21yx

Elevation: 300 to 800 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Melbourne and similar soils: 80 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melbourne

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope, summit

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Residuum and colluvium derived from sedimentary rock

Typical profile

H1 - 0 to 10 inches: silty clay loam

H2 - 10 to 18 inches: silty clay loam

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H3 - 18 to 66 inches: silty clay

Properties and qualities

Slope: 2 to 7 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 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

Minor Components

Aqualfs, poorly drained

Percent of map unit: 2 percent

Landform: Depressions

Hydric soil rating: Yes

31C—Melbourne silty clay loam, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 21yy

Elevation: 300 to 800 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 160 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Melbourne and similar soils: 80 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melbourne

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope, shoulder

Landform position (three-dimensional): Interfluvium, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Residuum and colluvium derived from sedimentary rock

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Typical profile

H1 - 0 to 10 inches: silty clay loam
H2 - 10 to 18 inches: silty clay loam
H3 - 18 to 66 inches: silty clay

Properties and qualities

Slope: 7 to 12 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 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Forage suitability group: Well drained < 15% Slopes (G002XY002OR)
Hydric soil rating: No

Minor Components

Aqualfs, poorly drained

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

31D—Melbourne silty clay loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: 21yz
Elevation: 300 to 800 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Melbourne and similar soils: 80 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melbourne

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope

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Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum and colluvium derived from sedimentary rock

Typical profile

H1 - 0 to 10 inches: silty clay loam
H2 - 10 to 18 inches: silty clay loam
H3 - 18 to 66 inches: silty clay

Properties and qualities

Slope: 12 to 20 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 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Forage suitability group: Well Drained > 15% Slopes (G002XY001OR)
Hydric soil rating: No

Minor Components

Aqualfs, poorly drained

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

38B—Saum silt loam, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: 21zq
Elevation: 250 to 1,200 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Saum

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope, summit

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed loess, old alluvium, and residuum weathered from basalt

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 23 inches: silty clay loam

H3 - 23 to 50 inches: stony silty clay loam

H4 - 50 to 54 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 7 percent

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

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 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

38D—Saum silt loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: 21zs

Elevation: 250 to 1,200 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Saum and similar soils: 80 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saum

Setting

Landform: Hills

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Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed loess, old alluvium, and residuum weathered from basalt

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 23 inches: silty clay loam

H3 - 23 to 50 inches: stony silty clay loam

H4 - 50 to 54 inches: unweathered bedrock

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

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 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Forage suitability group: Well Drained > 15% Slopes (G002XY001OR)

Hydric soil rating: No

38E—Saum silt loam, 20 to 30 percent slopes

Map Unit Setting

National map unit symbol: 21zt

Elevation: 250 to 1,200 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Saum and similar soils: 75 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saum

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

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Parent material: Mixed loess, old alluvium, and residuum weathered from basalt

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 23 inches: silty clay loam
H3 - 23 to 50 inches: stony silty clay loam
H4 - 50 to 54 inches: unweathered bedrock

Properties and qualities

Slope: 20 to 30 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
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 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Forage suitability group: Well Drained > 15% Slopes (G002XY001OR)
Hydric soil rating: No

45A—Woodburn silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2208
Elevation: 150 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodburn and similar soils: 85 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

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

Typical profile

H1 - 0 to 16 inches: silt loam
H2 - 16 to 31 inches: silty clay loam

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H3 - 31 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 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 25 to 32 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): 2w

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C

Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)

Hydric soil rating: No

Minor Components

Dayton

Percent of map unit: 1 percent

Landform: Terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

45B—Woodburn silt loam, 3 to 7 percent slopes

Map Unit Setting

National map unit symbol: 2209

Elevation: 150 to 400 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Woodburn and similar soils: 85 percent

Minor components: 1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

Landform: Terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

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Across-slope shape: Linear
Parent material: Old alluvium

Typical profile

H1 - 0 to 16 inches: silt loam
H2 - 16 to 31 inches: silty clay loam
H3 - 31 to 60 inches: silt 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 25 to 32 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): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Minor Components

Dayton

Percent of map unit: 1 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

2013A—Wapato silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2dgl9
Elevation: 50 to 1,200 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Wapato and similar soils: 90 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wapato

Setting

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

Typical profile

Ap - 0 to 9 inches: silty clay loam
A - 9 to 16 inches: silty clay loam
Bg1 - 16 to 22 inches: silty clay loam
Bg2 - 22 to 32 inches: silty clay loam
BCg - 32 to 60 inches: silty clay

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 9 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 12.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Forage suitability group: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Minor Components

Waldo

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes