



APPENDIX A – Reference Info



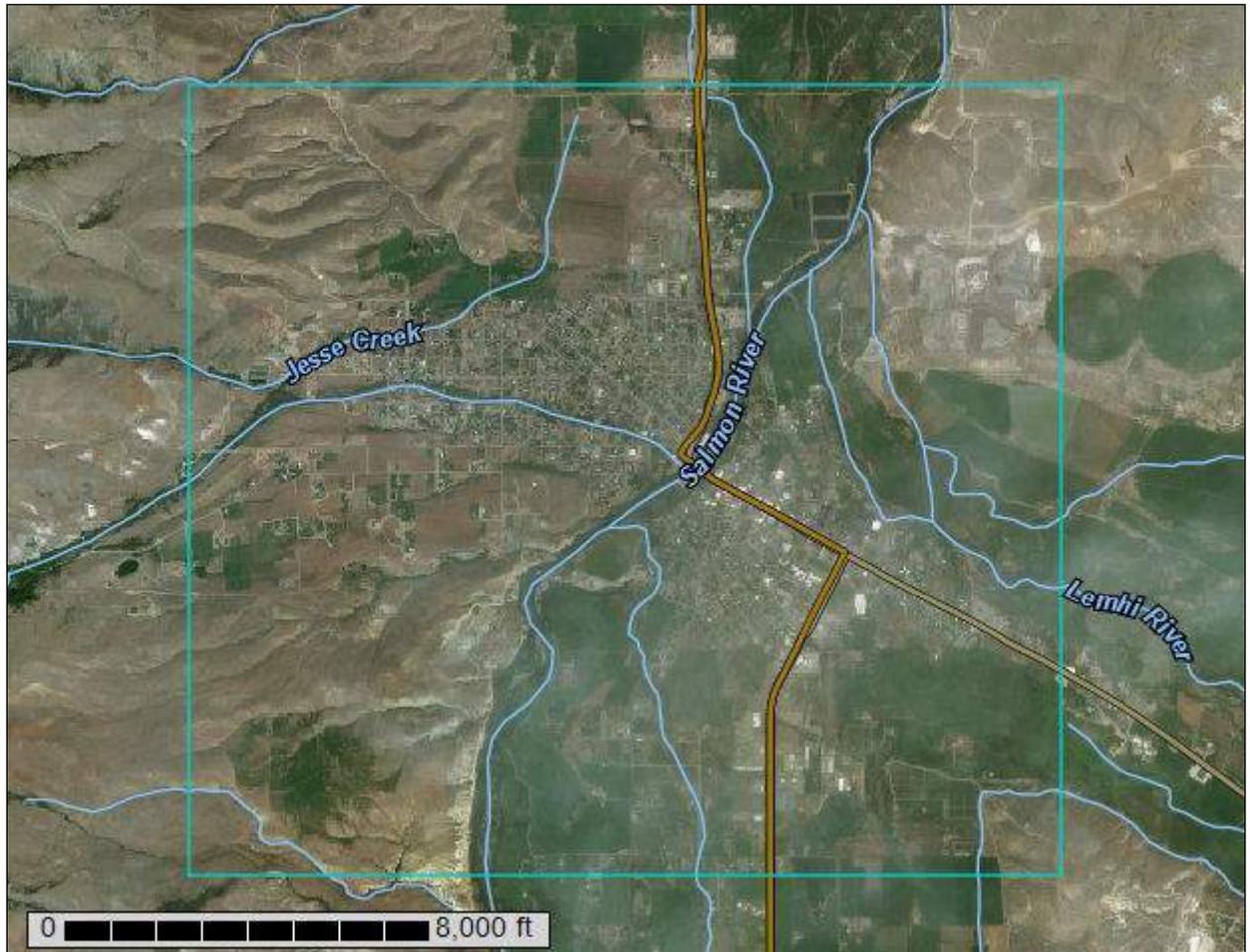
United States
Department of
Agriculture

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 Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties; and Salmon National Forest, Idaho



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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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

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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

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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.

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 1:24,000.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties
 Survey Area Data: Version 22, Apr 17, 2018

Soil Survey Area: Salmon National Forest, Idaho
 Survey Area Data: Version 2, Dec 10, 2013

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Mar 24, 2013—Nov 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (City of Salmon Area Soils)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Aquents-Riverwash complex, nearly level	118.4	2.0%
7	Bartonflat very gravelly sandy loam, 0 to 6 percent slopes	48.6	0.8%
15	Blackfoot loam, 0 to 2 percent slopes	67.8	1.2%
19	Bock-Bromaglin complex, 1 to 4 percent slopes	33.7	0.6%
22	Breitenbach gravelly loam, 1 to 4 percent slopes	12.0	0.2%
23	Breitenbach gravelly loam, 4 to 8 percent slopes	930.4	15.9%
24	Breitenbach gravelly loam, 8 to 12 percent slopes	202.7	3.5%
28	Bursteadt-Tohobit complex, 0 to 3 percent slopes	66.9	1.1%
37	Cowbone-Tohobit complex, 0 to 3 percent slopes	239.1	4.1%
39	Cronks-Venum association, 6 to 20 percent slopes	56.2	1.0%
128	Millhi complex, 10 to 30 percent slopes	1,008.4	17.2%
130	Millhi-Lacrol association, 15 to 35 percent slopes	80.5	1.4%
131	Misfire-Pattee-Dawtonia complex, 20 to 45 percent slopes	123.1	2.1%
134	Mooretown-Blackfoot-Borah complex, 0 to 2 percent slopes	84.4	1.4%
135	Mooretown-Borco complex, 0 to 2 percent slopes	83.8	1.4%
136	Morphey silt loam, 1 to 4 percent slopes	64.0	1.1%
148	Packham gravelly loam, 1 to 4 percent slopes	17.2	0.3%
163	Pattee-Perreau complex, 1 to 4 percent slopes	239.1	4.1%
164	Pattee-Perreau complex, 4 to 8 percent slopes	78.6	1.3%
168	Perreau silt loam, 1 to 4 percent slopes	3.3	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
170	Perreau silt loam, 8 to 20 percent slopes	190.1	3.2%
174	Pits, gravel	7.3	0.1%
195	Smout-Cowbone complex, 0 to 2 percent slopes	355.7	6.1%
200	Snowslide-Badland-Perreau complex, 5 to 35 percent slopes	242.7	4.1%
235	Wimpey-Zeph-Ajax complex, 0 to 2 percent slopes	547.2	9.3%
240	Xeric Torrifuvents, 1 to 3 percent slopes	77.3	1.3%
241	Yearian very cobbly loam, 1 to 4 percent slopes, very stony	82.4	1.4%
249	Zeegee-Ajax complex, 0 to 2 percent slopes	484.6	8.3%
258	Zer very cobbly loam, 20 to 50 percent slopes	191.8	3.3%
263	Water	71.6	1.2%
Subtotals for Soil Survey Area		5,809.1	99.2%
Totals for Area of Interest		5,858.5	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	49.4	0.8%
Subtotals for Soil Survey Area		49.4	0.8%
Totals for Area of Interest		5,858.5	100.0%

Map Unit Descriptions (City of Salmon Area Soils)

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.

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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

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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.

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

2—Aquents-Riverwash complex, nearly level

Map Unit Setting

National map unit symbol: 2sg9
Elevation: 3,900 to 7,500 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 37 to 41 degrees F
Frost-free period: 40 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Aquents and similar soils: 75 percent
Riverwash: 20 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aquents

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 2 inches: very cobbly fine sandy loam
AC - 2 to 8 inches: extremely cobbly loamy fine sand
C1 - 8 to 15 inches: extremely gravelly loamy sand
C2 - 15 to 60 inches: extremely cobbly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 6.00 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Description of Riverwash

Setting

Landform: Flood plains

Typical profile

C - 0 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 0 to 2 percent
Depth to water table: About 0 to 24 inches
Frequency of flooding: Frequent

Interpretive groups

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

Minor Components

Marsh

Percent of map unit: 5 percent
Landform: Marshes
Hydric soil rating: Yes

7—Bartonflat very gravelly sandy loam, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2slv
Elevation: 4,800 to 6,600 feet
Mean annual precipitation: 7 to 14 inches
Mean annual air temperature: 36 to 43 degrees F
Frost-free period: 20 to 90 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bartonflat and similar soils: 75 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bartonflat

Setting

Landform: Fan remnants, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 5 inches: very gravelly sandy loam
AB - 5 to 9 inches: extremely gravelly sandy loam
Bkq - 9 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained

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Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: A

Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)

Hydric soil rating: No

Minor Components

Thosand

Percent of map unit: 5 percent

Landform: Flood plains

Ecological site: DRY MEADOW PONE3-PHAL2 (R012XY023ID)

Hydric soil rating: Yes

15—Blackfoot loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sdj

Elevation: 4,000 to 5,700 feet

Mean annual precipitation: 9 to 12 inches

Mean annual air temperature: 43 to 45 degrees F

Frost-free period: 70 to 90 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Blackfoot and similar soils: 75 percent

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

Description of Blackfoot

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 10 inches: loam

Bw - 10 to 19 inches: loam

Bg - 19 to 60 inches: fine sandy loam

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Properties and qualities

Slope: 0 to 2 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 to high (0.57 to 2.00 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: ALLUVIAL BOTTOM 8-13 ARTRT/ELLAL-LECI4 (R012XY011ID)
Hydric soil rating: No

19—Bock-Bromaglin complex, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sfy
Elevation: 3,800 to 6,600 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bock and similar soils: 55 percent
Bromaglin and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bock

Setting

Landform: Fan remnants, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 11 inches: silt loam
Bw - 11 to 18 inches: silt loam
Bk1 - 18 to 24 inches: gravelly loam
Bk2 - 24 to 48 inches: fine sandy loam
2C - 48 to 60 inches: very gravelly loamy sand

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Properties and qualities

Slope: 1 to 4 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

Description of Bromaglin

Setting

Landform: Fan remnants, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 5 inches: silt loam
Bw - 5 to 12 inches: very fine sandy loam
Bk1 - 12 to 20 inches: sandy loam
2Bk2 - 20 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 1 to 4 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

22—Breitenbach gravelly loam, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sh1
Elevation: 4,500 to 6,500 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Breitenbach

Setting

Landform: Fan remnants, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 5 inches: gravelly loam
Bw - 5 to 18 inches: very gravelly loam
Bkq1 - 18 to 40 inches: extremely gravelly sandy loam
2Bkq2 - 40 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 1 to 4 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

23—Breitenbach gravelly loam, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2shd
Elevation: 4,500 to 6,500 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 80 to 90 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Breitenbach

Setting

Landform: Fan remnants, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 5 inches: gravelly loam
Bw - 5 to 18 inches: very gravelly loam
Bkq1 - 18 to 40 inches: extremely gravelly sandy loam
2Bkq2 - 40 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 4 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 to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

24—Breitenbach gravelly loam, 8 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2shr

Elevation: 4,500 to 6,500 feet

Mean annual precipitation: 11 to 13 inches

Mean annual air temperature: 37 to 43 degrees F

Frost-free period: 80 to 90 days

Farmland classification: Farmland of statewide importance, if irrigated

Map Unit Composition

Breitenbach and similar soils: 75 percent

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

Description of Breitenbach

Setting

Landform: Fan remnants, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 5 inches: gravelly loam

Bw - 5 to 18 inches: very gravelly loam

Bkq1 - 18 to 40 inches: extremely gravelly sandy loam

2Bkq2 - 40 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 8 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 to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Sodium adsorption ratio, maximum in profile: 2.0

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)

Hydric soil rating: No

28—Bursteadt-Tohobit complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2sjm

Elevation: 3,600 to 5,000 feet

Mean annual precipitation: 8 to 14 inches

Mean annual air temperature: 37 to 46 degrees F

Frost-free period: 60 to 90 days

Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Bursteadt and similar soils: 50 percent

Tohobit and similar soils: 35 percent

Minor components: 10 percent

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

Description of Bursteadt

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 5 inches: very fine sandy loam

Ak - 5 to 20 inches: sandy loam

Bw - 20 to 31 inches: fine sandy loam

2C - 31 to 60 inches: stratified loamy coarse sand to extremely cobbly coarse sand

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 to high (0.57 to 2.00 in/hr)

Depth to water table: About 24 to 36 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum in profile: 25 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: C

Ecological site: ALLUVIAL BOTTOM 8-13 ARTRT/ELLAL-LECI4 (R012XY011ID)

Hydric soil rating: No

Description of Tohobit

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Ak - 0 to 9 inches: silt loam
Bw - 9 to 21 inches: silt loam
2Cg1 - 21 to 49 inches: extremely gravelly coarse sand
2Cg2 - 49 to 55 inches: sand
2Cg3 - 55 to 60 inches: loamy fine sand

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 to high (0.57 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)
Hydric soil rating: No

Minor Components

Cowbone

Percent of map unit: 10 percent
Landform: Flood plains
Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)
Hydric soil rating: Yes

37—Cowbone-Tohobit complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2sjy

Custom Soil Resource Report

Elevation: 3,600 to 5,000 feet

Mean annual precipitation: 8 to 14 inches

Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 60 to 90 days

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

Map Unit Composition

Cowbone and similar soils: 45 percent

Tohobit and similar soils: 45 percent

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

Description of Cowbone

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

Ak - 1 to 10 inches: silt loam

Bkg - 10 to 16 inches: silt loam

Bg - 16 to 25 inches: silt loam

Cg1 - 25 to 55 inches: fine sandy loam

2Cg2 - 55 to 61 inches: very cobbly loamy very fine sand

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 to high (0.57 to 2.00 in/hr)

Depth to water table: About 6 to 12 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Calcium carbonate, maximum in profile: 20 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

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

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: B/D

Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)

Hydric soil rating: Yes

Description of Tohobit

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Custom Soil Resource Report

Typical profile

Ak - 0 to 9 inches: silt loam
Bw - 9 to 21 inches: silt loam
2Cg1 - 21 to 49 inches: extremely gravelly coarse sand
2Cg2 - 49 to 55 inches: sand
2Cg3 - 55 to 60 inches: loamy fine sand

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 to high (0.57 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)
Hydric soil rating: No

39—Cronks-Venum association, 6 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2sk0
Elevation: 4,500 to 7,300 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Cronks and similar soils: 60 percent
Venum and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cronks

Setting

Landform: Mountain slopes, hillslopes
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Mixed colluvium

Typical profile

A - 0 to 10 inches: very cobbly loam
Bt - 10 to 35 inches: very cobbly clay
Bk - 35 to 55 inches: very cobbly silt loam
C - 55 to 70 inches: very cobbly clay loam

Properties and qualities

Slope: 6 to 20 percent
Depth to restrictive feature: 10 to 20 inches to abrupt textural change
Natural drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil rating: No

Description of Venum

Setting

Landform: Mountain slopes, hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed colluvium

Typical profile

A - 0 to 2 inches: very cobbly loam
Bt - 2 to 9 inches: very cobbly clay
Btkq - 9 to 26 inches: very cobbly clay loam
Bk - 26 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 6 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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil rating: No

128—Millhi complex, 10 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2scr
Elevation: 3,900 to 5,200 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Millhi and similar soils: 50 percent
Millhi, eroded, and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millhi

Setting

Landform: Hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 2 inches: gravelly silt loam
E - 2 to 4 inches: gravelly silt loam
Btkn - 4 to 48 inches: clay loam
2Bkny - 48 to 60 inches: clay

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 2 to 9 inches to natric
Natural drainage class: Moderately well 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
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0

Custom Soil Resource Report

Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: CLAYEY 7-10 ARTRW8-ATCO/PSSPS (R012XY036ID)

Hydric soil rating: No

Description of Millhi, Eroded

Setting

Landform: Hillslopes

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Lacustrine deposits

Typical profile

Btkn - 0 to 1 inches: gravelly clay

2Bkny - 1 to 60 inches: clay

Properties and qualities

Slope: 20 to 30 percent

Depth to restrictive feature: 1 to 9 inches to natric

Natural drainage class: Moderately well 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

Calcium carbonate, maximum in profile: 10 percent

Gypsum, maximum in profile: 5 percent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 30.0

Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Ecological site: FRAGILE LANDS <8 ATCO/LESAS2 (R012XY019ID)

Hydric soil rating: No

130—Millhi-Lacrol association, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: 2scv

Elevation: 3,900 to 6,800 feet

Mean annual precipitation: 7 to 16 inches

Mean annual air temperature: 39 to 45 degrees F

Custom Soil Resource Report

Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Millhi and similar soils: 65 percent
Lacrol and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millhi

Setting

Landform: Hillslopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Lacustrine deposits

Typical profile

A - 0 to 2 inches: gravelly silt loam
E - 2 to 4 inches: gravelly silt loam
Btkn - 4 to 48 inches: clay loam
2Bkny - 48 to 60 inches: clay

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: 2 to 9 inches to natric
Natural drainage class: Moderately well 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
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: CLAYEY 7-10 ARTRW8-ATCO/PSSPS (R012XY036ID)
Hydric soil rating: No

Description of Lacrol

Setting

Landform: Hillslopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Lacustrine deposits

Typical profile

A - 0 to 2 inches: silt loam
E/B - 2 to 15 inches: clay loam
Btk - 15 to 60 inches: clay

Custom Soil Resource Report

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: 10 to 20 inches to abrupt textural change
Natural drainage class: Moderately well 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 4 to 8 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: NORTH SLOPE LOAMY 12-16 ARTR4/FEID (R012XY010ID)
Hydric soil rating: No

131—Misfire-Pattee-Dawtonia complex, 20 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2scw
Elevation: 4,000 to 7,200 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Misfire and similar soils: 35 percent
Pattee and similar soils: 25 percent
Dawtonia and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Misfire

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 3 inches: silt loam
Bw - 3 to 12 inches: gravelly silt loam
Bk - 12 to 60 inches: extremely gravelly sandy loam

Custom Soil Resource Report

Properties and qualities

Slope: 20 to 45 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil rating: No

Description of Pattee

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 4 inches: silt loam
Bw - 4 to 25 inches: silt loam
Bkn - 25 to 49 inches: loam
2Bknz - 49 to 60 inches: gravelly loam

Properties and qualities

Slope: 20 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

Description of Dawtonia

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or colluvium

Typical profile

A - 0 to 4 inches: very gravelly loam
Bt - 4 to 11 inches: very gravelly clay loam
Bkq - 11 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 20 to 45 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 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil rating: No

134—Mooretown-Blackfoot-Borah complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2scz
Elevation: 4,200 to 6,300 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 50 to 90 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Mooretown and similar soils: 45 percent
Blackfoot and similar soils: 25 percent
Borah and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mooretown

Setting

Landform: Stream terraces, flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 4 inches: loam

Bk - 4 to 16 inches: loam

Bg - 16 to 43 inches: loam

2C - 43 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 2 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 to high (0.57 to 2.00 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: C

Ecological site: DRY MEADOW PONE3-PHAL2 (R012XY023ID)

Hydric soil rating: No

Description of Blackfoot

Setting

Landform: Stream terraces, flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 19 inches: loam

Bw - 19 to 36 inches: loam

Bg - 36 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 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 to high (0.57 to 2.00 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: DRY MEADOW PONE3-PHAL2 (R012XY023ID)
Hydric soil rating: No

Description of Borah

Setting

Landform: Stream terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 4 inches: loam
Bkg - 4 to 12 inches: loam
2Cg - 12 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 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 to high (0.57 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: MEADOW DECA18/CANE2 (R012XY038ID)
Hydric soil rating: Yes

135—Mooretown-Borco complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sd0
Elevation: 5,000 to 6,300 feet
Mean annual precipitation: 9 to 13 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 50 to 90 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mooretown and similar soils: 55 percent
Borco and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mooretown

Setting

Landform: Stream terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 3 inches: loam
Bk - 3 to 15 inches: loam
Bg - 15 to 35 inches: loam
2C - 35 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 2 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: ALLUVIAL BOTTOM 8-13 ARTRT/ELLAL-LECI4 (R012XY011ID)
Hydric soil rating: No

Description of Borco

Setting

Landform: Stream terraces, flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 2 inches: very gravelly loam

Bk - 2 to 10 inches: gravelly sandy loam

2C - 10 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 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 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 5.0

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: ALLUVIAL BOTTOM 8-13 ARTRT/ELLAL-LECI4 (R012XY011ID)

Hydric soil rating: No

136—Morphey silt loam, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sd1

Elevation: 4,000 to 5,500 feet

Mean annual precipitation: 11 to 13 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Morphey and similar soils: 80 percent

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

Description of Morphey

Setting

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium and lacustrine deposits

Typical profile

A - 0 to 11 inches: silt loam

E/B - 11 to 27 inches: silty clay loam

Btkz - 27 to 55 inches: clay

Bz - 55 to 60 inches: clay

Properties and qualities

Slope: 1 to 4 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): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 12 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 20 percent

Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 5.0

Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Hydric soil rating: No

148—Packham gravelly loam, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sdg

Elevation: 4,200 to 5,400 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 80 to 125 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Packham and similar soils: 75 percent

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

Description of Packham

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 5 inches: gravelly loam
Bk1 - 5 to 32 inches: very gravelly loam
2Bk2 - 32 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 1 to 4 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil rating: No

163—Pattee-Perreau complex, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sf0
Elevation: 4,000 to 6,000 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Prime farmland if irrigated and reclaimed of excess salts and sodium

Map Unit Composition

Pattee and similar soils: 50 percent
Perreau and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pattee

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 3 inches: silt loam
Bkn - 3 to 26 inches: silt loam
2Bknz - 26 to 60 inches: loam

Properties and qualities

Slope: 1 to 4 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

Description of Perreau

Setting

Landform: Stream terraces
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 4 inches: silt loam
Bt - 4 to 13 inches: gravelly clay loam
Bkz - 13 to 26 inches: gravelly loam
Bk - 26 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 1 to 4 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 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

164—Pattee-Perreau complex, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2sf1
Elevation: 4,000 to 6,000 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium

Map Unit Composition

Pattee and similar soils: 45 percent
Perreau and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pattee

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 4 inches: silt loam
Bw - 4 to 25 inches: silt loam
Bkn - 25 to 49 inches: silt loam
2Bknz - 49 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 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 to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

Description of Perreau

Setting

Landform: Stream terraces
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 4 inches: silt loam
Bt - 4 to 13 inches: gravelly clay loam
Bkz - 13 to 26 inches: gravelly loam
Bk - 26 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 4 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 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

168—Perreau silt loam, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sf5

Elevation: 4,000 to 6,000 feet

Mean annual precipitation: 8 to 11 inches

Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Prime farmland if irrigated and reclaimed of excess salts and sodium

Map Unit Composition

Perreau and similar soils: 75 percent

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

Description of Perreau

Setting

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Lacustrine deposits

Typical profile

A - 0 to 4 inches: silt loam

Bt - 4 to 13 inches: gravelly clay loam

Bkz - 13 to 26 inches: gravelly loam

Bk - 26 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 1 to 4 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 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 25 percent

Gypsum, maximum in profile: 10 percent

Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: C

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)

Custom Soil Resource Report

Hydric soil rating: No

170—Perreau silt loam, 8 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2sf8
Elevation: 4,000 to 6,000 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Perreau

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 4 inches: silt loam
Bt - 4 to 13 inches: gravelly clay loam
Bkz - 13 to 26 inches: gravelly loam
Bk - 26 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 8 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 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil rating: No

174—Pits, gravel

Map Unit Composition

Pits, gravel: 100 percent

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

Description of Pits, Gravel

Typical profile

C - 0 to 60 inches: gravel, cobbles

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: Unranked

195—Smout-Cowbone complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sg4

Elevation: 3,700 to 5,100 feet

Mean annual precipitation: 8 to 14 inches

Mean annual air temperature: 39 to 46 degrees F

Frost-free period: 60 to 90 days

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

Map Unit Composition

Smout and similar soils: 60 percent

Cowbone and similar soils: 25 percent

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

Description of Smout

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 7 inches: gravelly loam

AC - 7 to 12 inches: extremely gravelly sandy loam

2C - 12 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)
Hydric soil rating: No

Description of Cowbone

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ak - 1 to 10 inches: silt loam
Bkg - 10 to 16 inches: silt loam
Bg - 16 to 25 inches: silt loam
Cg1 - 25 to 55 inches: fine sandy loam
2Cg2 - 55 to 61 inches: very gravelly loamy very fine sand

Properties and qualities

Slope: 0 to 2 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 to high (0.57 to 2.00 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)
Hydric soil rating: Yes

200—Snowslide-Badland-Perreau complex, 5 to 35 percent slopes

Map Unit Setting

National map unit symbol: 2sgc
Elevation: 3,900 to 6,600 feet
Mean annual precipitation: 6 to 11 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 50 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Snowslide and similar soils: 40 percent
Perreau and similar soils: 20 percent
Badland: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Snowslide

Setting

Landform: Hills, fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or colluvium derived from limestone and/or quartzite

Typical profile

A1 - 0 to 3 inches: silt loam
A2 - 3 to 12 inches: gravelly silt loam
Bk1 - 12 to 39 inches: very cobbly sandy loam
Bk2 - 39 to 44 inches: very cobbly silt loam
2Bk3 - 44 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 5 to 35 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: SALINE GRAVELLY 7-9 ATCO/ACHY-HECOC8 (R012XY009ID)
Hydric soil rating: No

Description of Badland

Typical profile

Cr - 0 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 35 percent

Depth to restrictive feature: 0 inches to paralithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Description of Perreau

Setting

Landform: Hillslopes

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Lacustrine deposits

Typical profile

A - 0 to 4 inches: silt loam

Bt - 4 to 13 inches: gravelly clay loam

Bkz - 13 to 26 inches: gravelly loam

Bk - 26 to 60 inches: extremely gravelly loam

Properties and qualities

Slope: 5 to 35 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 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 25 percent

Gypsum, maximum in profile: 10 percent

Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)

Hydric soil rating: No

235—Wimpey-Zeph-Ajax complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2shl
Elevation: 3,700 to 5,200 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Wimpey and similar soils: 35 percent
Zeph and similar soils: 30 percent
Ajax and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wimpey

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ak1 - 1 to 4 inches: silty clay
Ak2 - 4 to 15 inches: silty clay
Bg - 15 to 28 inches: silty clay loam
2Cg - 28 to 61 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 2 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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c

Custom Soil Resource Report

Hydrologic Soil Group: D

Ecological site: DRY MEADOW PONE3-PHAL2 (R012XY023ID)

Hydric soil rating: No

Description of Zeph

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material

Ag - 3 to 8 inches: silty clay

2Cg1 - 8 to 26 inches: very gravelly coarse sand

2Cg2 - 26 to 63 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 2 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 low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 6 to 12 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): 5w

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: DRY MEADOW PONE3-PHAL2 (R012XY023ID)

Hydric soil rating: Yes

Description of Ajax

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 11 inches: silty clay

Bg - 11 to 32 inches: silty clay loam

Cg - 32 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 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 low to moderately high (0.06 to 0.20 in/hr)

Custom Soil Resource Report

Depth to water table: About 6 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: MEADOW DECA18/CANE2 (R012XY038ID)
Hydric soil rating: Yes

240—Xeric Torrifuvents, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2shs
Elevation: 5,000 to 6,800 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 30 to 90 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Xeric Torrifuvents

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 3 inches: loam
Bk - 3 to 44 inches: loam
2C - 44 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 1 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 2.00 in/hr)
Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: ALLUVIAL BOTTOM 8-13 ARTRT/ELLAL-LECI4 (R012XY011ID)
Hydric soil rating: No

241—Yearian very cobbly loam, 1 to 4 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2sht
Elevation: 3,900 to 5,600 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Yearian, very stony surface, and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yearian, Very Stony Surface

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 2 inches: very cobbly loam
Ag - 2 to 12 inches: very cobbly loam
Bg - 12 to 22 inches: very gravelly loam
Cg1 - 22 to 39 inches: very gravelly sandy loam
Cg2 - 39 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 1 to 4 percent
Percent of area covered with surface fragments: 1.5 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 to high (0.57 to 2.00 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: MEADOW DECA18/CANE2 (R012XY038ID)
Hydric soil rating: Yes

249—Zeegee-Ajax complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sj2
Elevation: 3,700 to 5,200 feet
Mean annual precipitation: 8 to 14 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Zeegee and similar soils: 50 percent
Ajax and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zeegee

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

O_i - 0 to 3 inches: slightly decomposed plant material
Ag - 3 to 14 inches: silty clay
B_g - 14 to 38 inches: silty clay loam
2C_g - 38 to 63 inches: extremely gravelly silt loam

Properties and qualities

Slope: 0 to 2 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 0.60 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): 5w

Custom Soil Resource Report

Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: MEADOW DECA18/CANE2 (R012XY038ID)
Hydric soil rating: Yes

Description of Ajax

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: silty clay
B_g - 5 to 42 inches: silty clay loam
C_g - 42 to 61 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly 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 6 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: MEADOW DECA18/CANE2 (R012XY038ID)
Hydric soil rating: Yes

Minor Components

Cowbone

Percent of map unit: 10 percent
Landform: Flood plains
Ecological site: RIVERBOTTOM 10-16 POPUL/PASM (R012XY042ID)
Hydric soil rating: Yes

Aquolls, sandy-skeletal

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

258—Zer very cobbly loam, 20 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2sjd
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Zer

Setting

Landform: Hillslopes
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium and/or colluvium

Typical profile

A - 0 to 3 inches: very cobbly loam
Bkq1 - 3 to 27 inches: very gravelly loam
Bkq2 - 27 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 20 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 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil rating: No

263—Water

Map Unit Composition

Water: 100 percent

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

Salmon National Forest, Idaho

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent

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

Description of Notcom

Properties and qualities

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

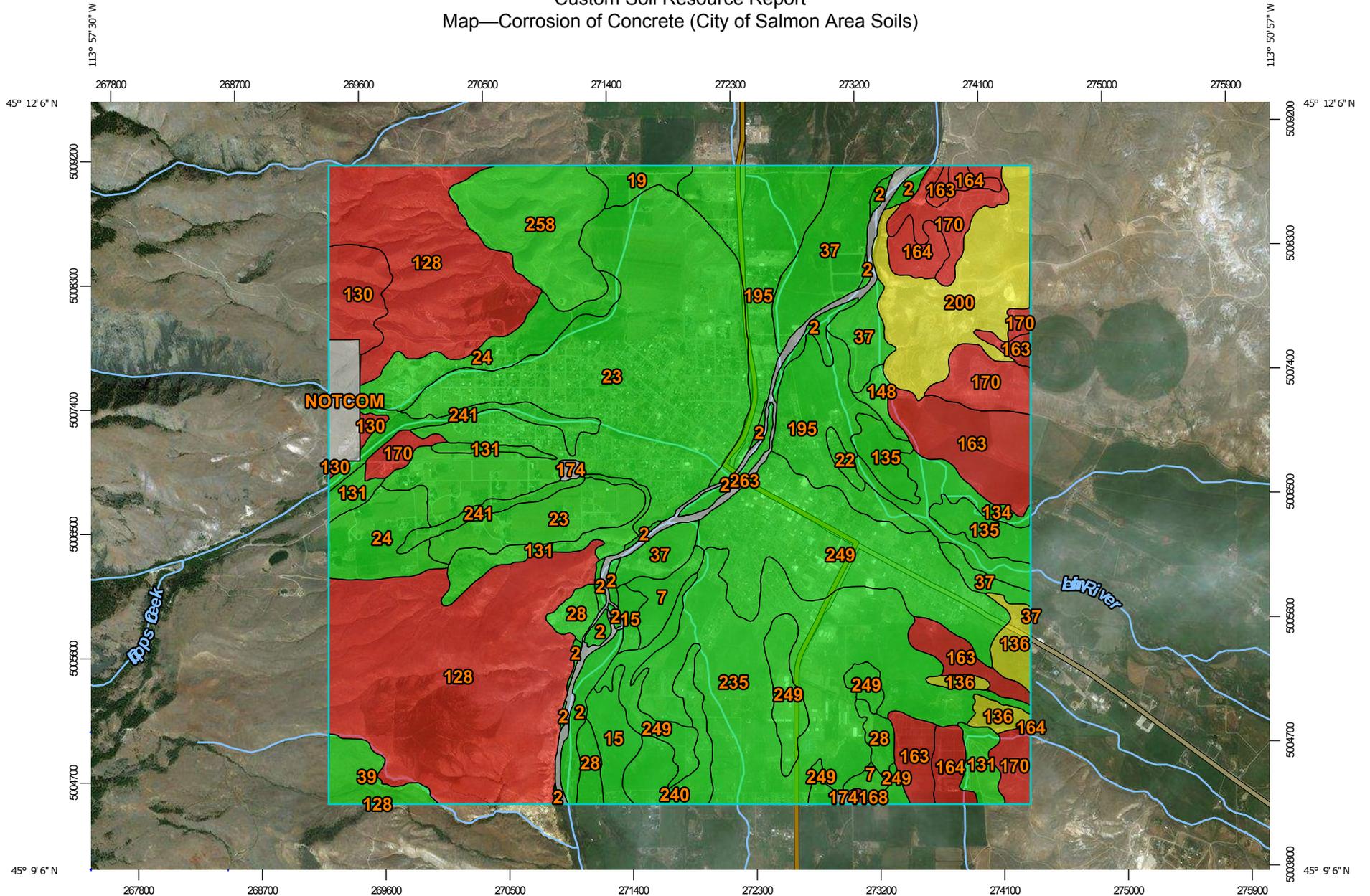
Corrosion of Concrete (City of Salmon Area Soils)

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the concrete in installations that are entirely within one kind of soil or within one soil layer.

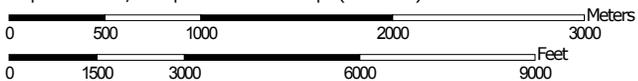
The risk of corrosion is expressed as "low," "moderate," or "high."

Custom Soil Resource Report

Map—Corrosion of Concrete (City of Salmon Area Soils)



Map Scale: 1:39,200 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 Area of Interest (AOI)
- Background**
 Aerial Photography
- Soils**
- Soil Rating Polygons**
-  High
 -  Moderate
 -  Low
 -  Not rated or not available
- Soil Rating Lines**
-  High
 -  Moderate
 -  Low
 -  Not rated or not available
- Soil Rating Points**
-  High
 -  Moderate
 -  Low
 -  Not rated or not available
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties
 Survey Area Data: Version 22, Apr 17, 2018

Soil Survey Area: Salmon National Forest, Idaho
 Survey Area Data: Version 2, Dec 10, 2013

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Mar 24, 2013—Nov 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Corrosion of Concrete (City of Salmon Area Soils)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Aquents-Riverwash complex, nearly level	Low	118.4	2.0%
7	Bartonflat very gravelly sandy loam, 0 to 6 percent slopes	Low	48.6	0.8%
15	Blackfoot loam, 0 to 2 percent slopes	Low	67.8	1.2%
19	Bock-Bromaglin complex, 1 to 4 percent slopes	Low	33.7	0.6%
22	Breitenbach gravelly loam, 1 to 4 percent slopes	Low	12.0	0.2%
23	Breitenbach gravelly loam, 4 to 8 percent slopes	Low	930.4	15.9%
24	Breitenbach gravelly loam, 8 to 12 percent slopes	Low	202.7	3.5%
28	Burstead-Tohobit complex, 0 to 3 percent slopes	Low	66.9	1.1%
37	Cowbone-Tohobit complex, 0 to 3 percent slopes	Low	239.1	4.1%
39	Cronks-Venum association, 6 to 20 percent slopes	Low	56.2	1.0%
128	Millhi complex, 10 to 30 percent slopes	High	1,008.4	17.2%
130	Millhi-Lacrol association, 15 to 35 percent slopes	High	80.5	1.4%
131	Misfire-Pattee-Dawtonia complex, 20 to 45 percent slopes	Low	123.1	2.1%
134	Mooretown-Blackfoot-Borah complex, 0 to 2 percent slopes	Low	84.4	1.4%
135	Mooretown-Borco complex, 0 to 2 percent slopes	Low	83.8	1.4%
136	Morphey silt loam, 1 to 4 percent slopes	Moderate	64.0	1.1%
148	Packham gravelly loam, 1 to 4 percent slopes	Low	17.2	0.3%
163	Pattee-Perreau complex, 1 to 4 percent slopes	High	239.1	4.1%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
164	Pattee-Perreau complex, 4 to 8 percent slopes	High	78.6	1.3%
168	Perreau silt loam, 1 to 4 percent slopes	High	3.3	0.1%
170	Perreau silt loam, 8 to 20 percent slopes	High	190.1	3.2%
174	Pits, gravel		7.3	0.1%
195	Smout-Cowbone complex, 0 to 2 percent slopes	Low	355.7	6.1%
200	Snowslide-Badland-Perreau complex, 5 to 35 percent slopes	Moderate	242.7	4.1%
235	Wimpey-Zeph-Ajax complex, 0 to 2 percent slopes	Low	547.2	9.3%
240	Xeric Torrifuvents, 1 to 3 percent slopes	Low	77.3	1.3%
241	Yearian very cobbly loam, 1 to 4 percent slopes, very stony	Low	82.4	1.4%
249	Zeegee-Ajax complex, 0 to 2 percent slopes	Low	484.6	8.3%
258	Zer very cobbly loam, 20 to 50 percent slopes	Low	191.8	3.3%
263	Water		71.6	1.2%
Subtotals for Soil Survey Area			5,809.1	99.2%
Totals for Area of Interest			5,858.5	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available		49.4	0.8%
Subtotals for Soil Survey Area			49.4	0.8%
Totals for Area of Interest			5,858.5	100.0%

Rating Options—Corrosion of Concrete (City of Salmon Area Soils)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Corrosion of Steel (City of Salmon Area Soils)

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. The rate of corrosion of uncoated

Custom Soil Resource Report

steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."

MAP LEGEND

- Area of Interest (AOI)**
 -  Area of Interest (AOI)
- Background**
 -  Aerial Photography
- Soils**
 - Soil Rating Polygons**
 -  High
 -  Moderate
 -  Low
 -  Not rated or not available
 - Soil Rating Lines**
 -  High
 -  Moderate
 -  Low
 -  Not rated or not available
 - Soil Rating Points**
 -  High
 -  Moderate
 -  Low
 -  Not rated or not available
- Water Features**
 -  Streams and Canals
- Transportation**
 -  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

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 Survey Area Data: Version 22, Apr 17, 2018

Soil Survey Area: Salmon National Forest, Idaho
 Survey Area Data: Version 2, Dec 10, 2013

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Date(s) aerial images were photographed: Mar 24, 2013—Nov 10, 2016

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MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

Table—Corrosion of Steel (City of Salmon Area Soils)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Aquents-Riverwash complex, nearly level	Moderate	118.4	2.0%
7	Bartonflat very gravelly sandy loam, 0 to 6 percent slopes	Low	48.6	0.8%
15	Blackfoot loam, 0 to 2 percent slopes	Moderate	67.8	1.2%
19	Bock-Bromaglin complex, 1 to 4 percent slopes	Low	33.7	0.6%
22	Breitenbach gravelly loam, 1 to 4 percent slopes	Low	12.0	0.2%
23	Breitenbach gravelly loam, 4 to 8 percent slopes	Low	930.4	15.9%
24	Breitenbach gravelly loam, 8 to 12 percent slopes	Low	202.7	3.5%
28	Burstead-Tohobit complex, 0 to 3 percent slopes	High	66.9	1.1%
37	Cowbone-Tohobit complex, 0 to 3 percent slopes	High	239.1	4.1%
39	Cronks-Venum association, 6 to 20 percent slopes	Moderate	56.2	1.0%
128	Millhi complex, 10 to 30 percent slopes	High	1,008.4	17.2%
130	Millhi-Lacrol association, 15 to 35 percent slopes	High	80.5	1.4%
131	Misfire-Pattee-Dawtonia complex, 20 to 45 percent slopes	Low	123.1	2.1%
134	Mooretown-Blackfoot-Borah complex, 0 to 2 percent slopes	High	84.4	1.4%
135	Mooretown-Borco complex, 0 to 2 percent slopes	Moderate	83.8	1.4%
136	Morphey silt loam, 1 to 4 percent slopes	High	64.0	1.1%
148	Packham gravelly loam, 1 to 4 percent slopes	Moderate	17.2	0.3%
163	Pattee-Perreau complex, 1 to 4 percent slopes	High	239.1	4.1%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
164	Pattee-Perreau complex, 4 to 8 percent slopes	High	78.6	1.3%
168	Perreau silt loam, 1 to 4 percent slopes	High	3.3	0.1%
170	Perreau silt loam, 8 to 20 percent slopes	High	190.1	3.2%
174	Pits, gravel		7.3	0.1%
195	Smout-Cowbone complex, 0 to 2 percent slopes	Low	355.7	6.1%
200	Snowslide-Badland-Perreau complex, 5 to 35 percent slopes	Moderate	242.7	4.1%
235	Wimpey-Zeph-Ajax complex, 0 to 2 percent slopes	High	547.2	9.3%
240	Xeric Torrifuvents, 1 to 3 percent slopes	Low	77.3	1.3%
241	Yearian very cobbly loam, 1 to 4 percent slopes, very stony	High	82.4	1.4%
249	Zeegee-Ajax complex, 0 to 2 percent slopes	High	484.6	8.3%
258	Zer very cobbly loam, 20 to 50 percent slopes	Moderate	191.8	3.3%
263	Water		71.6	1.2%
Subtotals for Soil Survey Area			5,809.1	99.2%
Totals for Area of Interest			5,858.5	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available		49.4	0.8%
Subtotals for Soil Survey Area			49.4	0.8%
Totals for Area of Interest			5,858.5	100.0%

Rating Options—Corrosion of Steel (City of Salmon Area Soils)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for

specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification (City of Salmon Area Soils)

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Soil Rating Lines

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained

-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Soil Rating Points

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Water Features

MAP INFORMATION

-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 22, Apr 17, 2018

Soil Survey Area: Salmon National Forest, Idaho
Survey Area Data: Version 2, Dec 10, 2013

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MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

Table—Farmland Classification (City of Salmon Area Soils)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Aquents-Riverwash complex, nearly level	Not prime farmland	118.4	2.0%
7	Bartonflat very gravelly sandy loam, 0 to 6 percent slopes	Prime farmland if irrigated	48.6	0.8%
15	Blackfoot loam, 0 to 2 percent slopes	Prime farmland if irrigated	67.8	1.2%
19	Bock-Bromaglin complex, 1 to 4 percent slopes	Prime farmland if irrigated	33.7	0.6%
22	Breitenbach gravelly loam, 1 to 4 percent slopes	Prime farmland if irrigated	12.0	0.2%
23	Breitenbach gravelly loam, 4 to 8 percent slopes	Prime farmland if irrigated	930.4	15.9%
24	Breitenbach gravelly loam, 8 to 12 percent slopes	Farmland of statewide importance, if irrigated	202.7	3.5%
28	Bursteadt-Tohobit complex, 0 to 3 percent slopes	Prime farmland if irrigated and drained	66.9	1.1%
37	Cowbone-Tohobit complex, 0 to 3 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	239.1	4.1%
39	Cronks-Venum association, 6 to 20 percent slopes	Not prime farmland	56.2	1.0%
128	Millhi complex, 10 to 30 percent slopes	Not prime farmland	1,008.4	17.2%
130	Millhi-Lacrol association, 15 to 35 percent slopes	Not prime farmland	80.5	1.4%
131	Misfire-Pattee-Dawtonia complex, 20 to 45 percent slopes	Not prime farmland	123.1	2.1%
134	Mooretown-Blackfoot-Borah complex, 0 to 2 percent slopes	Prime farmland if irrigated and drained	84.4	1.4%
135	Mooretown-Borco complex, 0 to 2 percent slopes	Prime farmland if irrigated	83.8	1.4%
136	Morphey silt loam, 1 to 4 percent slopes	Prime farmland if irrigated and drained	64.0	1.1%
148	Packham gravelly loam, 1 to 4 percent slopes	Prime farmland if irrigated	17.2	0.3%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
163	Pattee-Perreau complex, 1 to 4 percent slopes	Prime farmland if irrigated and reclaimed of excess salts and sodium	239.1	4.1%
164	Pattee-Perreau complex, 4 to 8 percent slopes	Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium	78.6	1.3%
168	Perreau silt loam, 1 to 4 percent slopes	Prime farmland if irrigated and reclaimed of excess salts and sodium	3.3	0.1%
170	Perreau silt loam, 8 to 20 percent slopes	Not prime farmland	190.1	3.2%
174	Pits, gravel		7.3	0.1%
195	Smout-Cowbone complex, 0 to 2 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	355.7	6.1%
200	Snowslide-Badland-Perreau complex, 5 to 35 percent slopes	Not prime farmland	242.7	4.1%
235	Wimpey-Zeph-Ajax complex, 0 to 2 percent slopes	Prime farmland if irrigated and drained	547.2	9.3%
240	Xeric Torrifluvents, 1 to 3 percent slopes	Prime farmland if irrigated	77.3	1.3%
241	Yearian very cobbly loam, 1 to 4 percent slopes, very stony	Not prime farmland	82.4	1.4%
249	Zeegee-Ajax complex, 0 to 2 percent slopes	Prime farmland if irrigated and drained	484.6	8.3%
258	Zer very cobbly loam, 20 to 50 percent slopes	Not prime farmland	191.8	3.3%
263	Water		71.6	1.2%
Subtotals for Soil Survey Area			5,809.1	99.2%
Totals for Area of Interest			5,858.5	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available		49.4	0.8%
Subtotals for Soil Survey Area			49.4	0.8%
Totals for Area of Interest			5,858.5	100.0%

Rating Options—Farmland Classification (City of Salmon Area Soils)

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Soil Health

Soil health interpretations are designed to be used as tools for evaluating and managing a soil's capacity to function as a vital living ecosystem that sustains plants, animals, and humans. Example interpretations include compaction, surface sealing, carbon sequestration, resistance and resilience, management systems and practices, and cover crops.

Fragile Soil Index (City of Salmon Area Soils)

Soils can be rated based on their susceptibility to degradation in the "Fragile Soil Index" interpretation. Fragile soils are those that are most vulnerable to degradation. In other words, they can be easily degraded—they have a low resistance to degradation processes. They tend to be highly susceptible to erosion and can have a low capacity to recover after degradation has occurred (low resilience). Fragile soils are generally characterized by a low content of organic matter, low aggregate stability, and weak soil structure. They are generally located on sloping ground, have sparse plant cover, and tend to be in arid or semiarid regions. The index can be used for conservation and watershed planning to assist in identifying soils and areas highly vulnerable to degradation.

Depending on inherent soil characteristics and the climate, soils can vary from highly resistant, or stable, to vulnerable and extremely sensitive to degradation. Under stress, fragile soils can degrade to a new altered state, which may be less favorable or unfavorable for plant growth and less capable of performing soil functions. To assess the fragility of the soil, indicators of vulnerability to degradation processes are used. They include organic matter, soil structure, rooting depth, vegetative cover, slope, and aridity.

The organic matter content indicates the capacity of the soil to resist and/or recover from degradation processes. Organic matter improves the soil pore structure, increases water infiltration, and reduces soil compaction and soil erosion. Soil structure indicates the capacity of the soil to resist degradation from accelerated water erosion (by increasing the amount of infiltration). Pore structure is the most important aspect of soil structure as pores provide habitat for organism. Shallow soils are more vulnerable to degradation processes because they have limited rooting depth and have a reduced amount of material from which to form new soil. As erosion removes the upper soil profile, productivity will decline if the subsoil is limiting for crop growth. Vegetative cover is very important as uncovered soil is most vulnerable to the processes of soil erosion, both by wind and water. Slope (a measure of the steepness or the degree of inclination) indicates the degree of

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vulnerability to erosion and mass movement. Aridity is defined by the shortage of moisture. Lack of water is a main factor limiting biological processes and the ability of the soil to resist and/or recover from degradation.

Soils are placed into interpretive classes based on their index rating, which ranges from 0 to 1. An index rating of 1 is the most fragile, while a rating of zero is the least fragile. Interpretative classes are as follows:

Not Fragile (index rating less than or equal to 0.009) – These soils have a very high potential to resist degradation and be highly resilient. They are highly structured with an organic matter content greater than 5.7%, are nearly level, are deep or very deep, have greater than 85% vegetative cover, and are in a climate that is wet or very wet.

Slightly Fragile (index rating less than 0.009 and less than or equal to 0.209) – These soils have a high potential to resist degradation and be resilient. They are:

— Poorly structured to weakly structured soils that have an extremely low to moderate content of organic matter, are very deep, have high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very shallow to moderately deep, have high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very deep, have low to moderately high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very deep, have high vegetative cover; are on slopes greater than 3%, and are in wet or very wet climates; or

— Highly structured soils that have a very high content of organic matter, are very deep, have high vegetative cover; occur on nearly level ground, and in semi-dry to mildly wet climates;

Moderately Fragile (index rating greater than 0.209 and less than or equal to 0.409) – These soils have a moderate potential to resist degradation and be moderately resilient. They are:

— Highly structured soils that have a very high content of organic matter, are very shallow, have high vegetative cover, occur in nearly level to moderately sloping areas, and are in semi-dry climates;

— Poorly structured soils that have an extremely low content of organic matter, are deep, have low vegetative cover, occur in nearly level areas, and are in wet or very wet climates;

— Poorly structured soils that have an extremely low content of organic matter, occur on gentle to very steep slopes, have high vegetative cover, and are in wet or very wet climates;

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— Weakly structured soils that have a very low content of organic matter, are deep, occur in nearly level to gently sloping areas, have high vegetative cover, and are in semi-dry climates; or

— Weakly structured soils that have a very low content of organic matter, are very shallow to very deep, occur in nearly level to strongly sloping areas, have high vegetative cover, and are in mildly wet climates.

Fragile (index rating greater than 0.409 and less than or equal to 0.609) – These soils have a low potential to resist degradation and low resilience. They are:

— Well structured soils that have a low content of organic matter, are shallow to very deep, have moderate to moderately high vegetative cover, occur on steep slopes, and are in dry climates;

— Well structured soils that have a low content of organic matter, are shallow to very deep, have a low vegetative cover, occur in nearly level to gently sloping areas, and are in dry climates;

— Well structured soils that have a low content of organic matter, are deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in a semi-dry climate;

— Moderately structured soils that have a very low content of organic matter, are deep, have moderately high vegetative cover, occur on moderately steep to very steep slopes, and are in semi-dry climates; or

— Weakly structured soils that have a low content of organic matter, occur on moderately steep to very steep slopes, have low vegetative cover, and are in wet or very wet climates.

Very Fragile (index rating greater than 0.609 and less than or equal to 0.809) – These soils have a very low potential to resist degradation and very low resilience. They are:

— Weakly structured soils that have an extremely low content of organic matter, are deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in dry climates;

— Weakly structured soils that have an extremely low content of organic matter, are shallow to very deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in very dry climates; or

— Poorly structured soils that have an extremely low content of organic matter, are very shallow, have no vegetative cover, occur on steep slopes, and are in mildly wet to wet climates.

Extremely Fragile (index rating greater than 0.809 and less than or equal to 1.0) – These soils can have no potential to resist degradation and no resilience. They are:

— Poorly structured soils that have an extremely low content of organic matter, are very shallow, have low vegetative cover, occur on very steep slopes, and are in dry or very dry climates;

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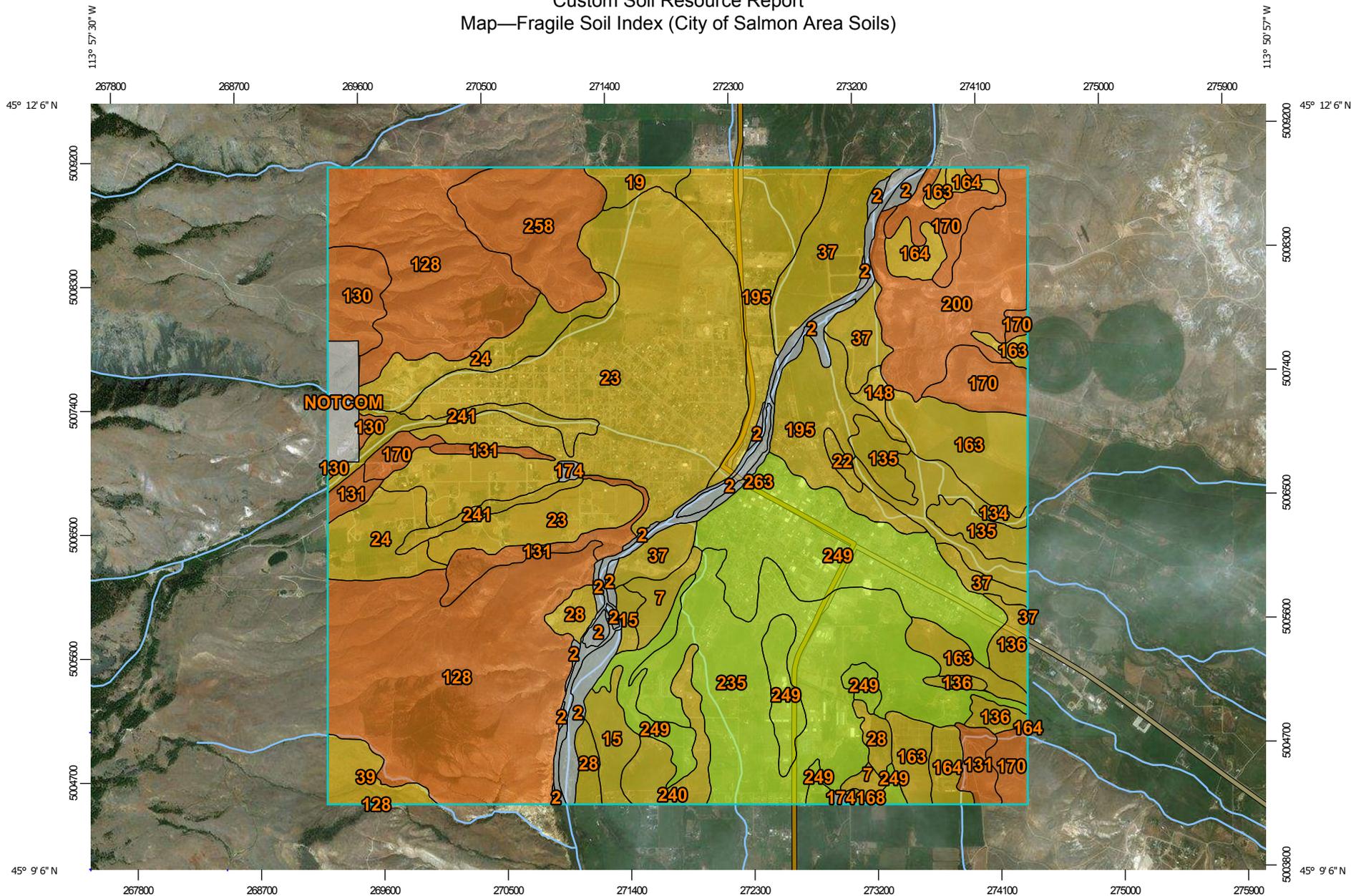
— Weakly structured soils that have a very low content of organic matter, are nearly level to very deep, have low vegetative cover, occur on very steep slopes, and are in dry climates; or

— Very shallow soils on steep slopes.

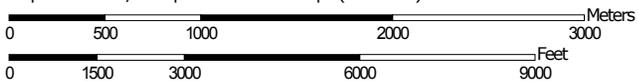
The interpretive rating is based on soils that occur in the dominant land use for the map unit component and may not represent soils that occur in site-specific land uses.

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Map—Fragile Soil Index (City of Salmon Area Soils)



Map Scale: 1:39,200 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 -  Not rated or not available
 - Area of Interest (AOI)
- Soils**
 - Soil Rating Polygons**
 -  Extremely fragile
 -  Highly fragile
 -  Fragile
 -  Moderately fragile
 -  Slightly fragile
 -  Not fragile
 -  Not rated or not available
 - Soil Rating Lines**
 -  Extremely fragile
 -  Highly fragile
 -  Fragile
 -  Moderately fragile
 -  Slightly fragile
 -  Not fragile
 -  Not rated or not available
 - Soil Rating Points**
 -  Extremely fragile
 -  Highly fragile
 -  Fragile
 -  Moderately fragile
 -  Slightly fragile
 -  Not fragile
- 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 1:24,000.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties
 Survey Area Data: Version 22, Apr 17, 2018

Soil Survey Area: Salmon National Forest, Idaho
 Survey Area Data: Version 2, Dec 10, 2013

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Mar 24, 2013—Nov 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Tables—Fragile Soil Index (City of Salmon Area Soils)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
2	Aquents-Riverwash complex, nearly level	Not rated	Aquents (75%)		118.4	2.0%
			Riverwash (20%)			
			Marsh (5%)			
7	Bartonflat very gravelly sandy loam, 0 to 6 percent slopes	Fragile	Bartonflat (75%)	Low vegetative cover (1.00)	48.6	0.8%
				Very low organic matter (0.90)		
				Semi-dry (0.52)		
				Moderately structured (0.50)		
				Nearly level (0.05)		
15	Blackfoot loam, 0 to 2 percent slopes	Fragile	Blackfoot (75%)	Poor structure (1.00)	67.8	1.2%
				Low vegetative cover (1.00)		
				Very low organic matter (0.84)		
				Semi-dry (0.63)		
				Nearly level (0.02)		
19	Bock-Bromaglin complex, 1 to 4 percent slopes	Fragile	Bock (55%)	Low vegetative cover (1.00)	33.7	0.6%
				Very low organic matter (0.84)		
				Semi-dry (0.56)		
				Well structured (0.25)		
				Nearly level (0.05)		
			Bromaglin (35%)	Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Mildly wet (0.30)		
				Nearly level (0.05)		
22	Breitenbach gravelly loam,	Fragile	Breitenbach (75%)	Poor structure (1.00)	12.0	0.2%

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Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	1 to 4 percent slopes			Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Mildly wet (0.30)		
				Nearly level (0.05)		
23	Breitenbach gravelly loam, 4 to 8 percent slopes	Fragile	Breitenbach (75%)	Poor structure (1.00)	930.4	15.9%
				Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Mildly wet (0.30)		
				Gently sloping (0.08)		
24	Breitenbach gravelly loam, 8 to 12 percent slopes	Fragile	Breitenbach (75%)	Poor structure (1.00)	202.7	3.5%
				Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Mildly wet (0.30)		
				Strongly sloping (0.11)		
28	Bursteadt-Tohobit complex, 0 to 3 percent slopes	Fragile	Bursteadt (50%)	Low vegetative cover (1.00)	66.9	1.1%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Semi-dry (0.41)		
				Nearly level (0.04)		
			Tohobit (35%)	Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Semi-dry (0.58)		
				Well structured (0.25)		
				Nearly level (0.04)		
37	Cowbone-Tohobit complex, 0 to 3 percent slopes	Fragile	Tohobit (45%)	Low vegetative cover (1.00)	239.1	4.1%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Very low organic matter (0.90)		
				Semi-dry (0.58)		
				Well structured (0.25)		
				Nearly level (0.04)		
39	Cronks-Venum association, 6 to 20 percent slopes	Fragile	Cronks (60%)	Low vegetative cover (1.00)	56.2	1.0%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Shallow (0.65)		
				Mildly wet (0.30)		
			Venum (30%)	Poor structure (1.00)		
				Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Semi-dry (0.61)		
				Strongly sloping (0.17)		
128	Millhi complex, 10 to 30 percent slopes	Highly fragile	Millhi (50%)	Low vegetative cover (1.00)	1,008.4	17.2%
				Very low organic matter (0.90)		
				Very shallow (0.85)		
				Dry (0.81)		
				Weakly structured (0.75)		
			Millhi, eroded (30%)	Low vegetative cover (1.00)		
				Very shallow (0.96)		
				Very low organic matter (0.90)		
				Dry (0.81)		
				Moderately steep (0.47)		
130	Millhi-Lacrol association, 15	Highly fragile	Millhi (65%)	Low vegetative cover (1.00)	80.5	1.4%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	to 35 percent slopes			Very low organic matter (0.90)		
				Very shallow (0.85)		
				Dry (0.81)		
				Weakly structured (0.75)		
131	Misfire-Pattee-Dawtonia complex, 20 to 45 percent slopes	Highly fragile	Misfire (35%)	Low vegetative cover (1.00)	123.1	2.1%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Steep (0.64)		
				Semi-dry (0.54)		
			Pattee (25%)	Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Semi-dry (0.61)		
				Moderately steep (0.47)		
			Dawtonia (20%)	Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Steep (0.64)		
				Semi-dry (0.61)		
134	Mooretown-Blackfoot-Borah complex, 0 to 2 percent slopes	Fragile	Mooretown (45%)	Low vegetative cover (1.00)	84.4	1.4%
				Weakly structured (0.75)		
				Low organic matter (0.67)		
				Semi-dry (0.41)		
				Nearly level (0.02)		

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Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Blackfoot (25%)	Poor structure (1.00)		
				Low vegetative cover (1.00)		
				Very low organic matter (0.84)		
				Semi-dry (0.63)		
				Nearly level (0.02)		
			Borah (20%)	Low vegetative cover (1.00)		
				Very low organic matter (0.84)		
				Semi-dry (0.48)		
				Well structured (0.25)		
				Nearly level (0.02)		
135	Mooretown-Borco complex, 0 to 2 percent slopes	Fragile	Mooretown (55%)	Low vegetative cover (1.00)	83.8	1.4%
				Weakly structured (0.75)		
				Low organic matter (0.67)		
				Semi-dry (0.41)		
				Nearly level (0.02)		
			Borco (35%)	Low vegetative cover (1.00)		
				Very low organic matter (0.84)		
				Weakly structured (0.75)		
				Semi-dry (0.41)		
				Nearly level (0.02)		
136	Morphey silt loam, 1 to 4 percent slopes	Fragile	Morphey (80%)	Low vegetative cover (1.00)	64.0	1.1%
				Very low organic matter (0.77)		
				Weakly structured (0.75)		
				Semi-dry (0.38)		

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Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Nearly level (0.05)		
148	Packham gravelly loam, 1 to 4 percent slopes	Fragile	Packham (75%)	Low vegetative cover (1.00)	17.2	0.3%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Semi-dry (0.62)		
				Nearly level (0.05)		
163	Pattee-Perreau complex, 1 to 4 percent slopes	Fragile	Pattee (50%)	Low vegetative cover (1.00)	239.1	4.1%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Semi-dry (0.61)		
				Nearly level (0.05)		
			Perreau (25%)	Low vegetative cover (1.00)		
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Dry (0.73)		
				Nearly level (0.05)		
164	Pattee-Perreau complex, 4 to 8 percent slopes	Fragile	Pattee (45%)	Low vegetative cover (1.00)	78.6	1.3%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Semi-dry (0.61)		
				Gently sloping (0.08)		
			Perreau (30%)	Low vegetative cover (1.00)		
				Very low organic matter (0.90)		

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Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Weakly structured (0.75)		
				Dry (0.73)		
				Gently sloping (0.08)		
168	Perreau silt loam, 1 to 4 percent slopes	Fragile	Perreau (75%)	Low vegetative cover (1.00)	3.3	0.1%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Dry (0.73)		
				Nearly level (0.05)		
170	Perreau silt loam, 8 to 20 percent slopes	Highly fragile	Perreau (80%)	Low vegetative cover (1.00)	190.1	3.2%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Dry (0.73)		
				Strongly sloping (0.20)		
174	Pits, gravel	Not rated	Pits, gravel (100%)		7.3	0.1%
195	Smout-Cowbone complex, 0 to 2 percent slopes	Fragile	Smout (60%)	Low vegetative cover (1.00)	355.7	6.1%
				Very low organic matter (0.90)		
				Semi-dry (0.48)		
				Well structured (0.25)		
				Nearly level (0.02)		
200	Snowslide-Badland-Perreau complex, 5 to 35 percent slopes	Highly fragile	Snowslide (40%)	Low vegetative cover (1.00)	242.7	4.1%
				Very low organic matter (0.84)		
				Dry (0.81)		
				Weakly structured (0.75)		
				Moderately steep (0.35)		

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Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI		
			Perreau (20%)	Low vegetative cover (1.00) Very low organic matter (0.90) Weakly structured (0.75) Dry (0.73) Moderately steep (0.35)				
235	Wimpey-Zeph-Ajax complex, 0 to 2 percent slopes	Moderately fragile	Wimpey (35%)	Low vegetative cover (1.00) Semi-dry (0.63) Nearly level (0.02)	547.2	9.3%		
			Zeph (30%)	Low vegetative cover (1.00) Semi-dry (0.63) Nearly level (0.02)				
240	Xeric Torrifluvents, 1 to 3 percent slopes	Fragile	Xeric Torrifluvents (75%)	Low vegetative cover (1.00) Very low organic matter (0.90) Weakly structured (0.75) Semi-dry (0.42) Nearly level (0.04)			77.3	1.3%
241	Yearian very cobbly loam, 1 to 4 percent slopes, very stony	Fragile	Yearian, very stony surface (80%)	Low vegetative cover (1.00) Weakly structured (0.75) Low organic matter (0.55) Mildly wet (0.30) Nearly level (0.05)			82.4	1.4%
249	Zeegee-Ajax complex, 0 to 2 percent slopes	Moderately fragile	Zeegee (50%)	Low vegetative cover (1.00) Semi-dry (0.63) Nearly level (0.02)			484.6	8.3%
			Ajax (35%)	Low vegetative cover (1.00)				

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Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Semi-dry (0.63)		
				Nearly level (0.02)		
258	Zer very cobbly loam, 20 to 50 percent slopes	Highly fragile	Zer (80%)	Low vegetative cover (1.00)	191.8	3.3%
				Very low organic matter (0.90)		
				Weakly structured (0.75)		
				Steep (0.68)		
				Semi-dry (0.61)		
263	Water	Not rated	Water (100%)		71.6	1.2%
Subtotals for Soil Survey Area					5,809.1	99.2%
Totals for Area of Interest					5,858.5	100.0%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available				49.4	0.8%
Subtotals for Soil Survey Area					49.4	0.8%
Totals for Area of Interest					5,858.5	100.0%

Rating	Acres in AOI	Percent of AOI
Fragile	2,743.2	46.8%
Highly fragile	1,836.6	31.3%
Moderately fragile	1,031.9	17.6%
Null or Not Rated	246.7	4.2%
Totals for Area of Interest	5,858.5	100.0%

Rating Options—Fragile Soil Index (City of Salmon Area Soils)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the following National Soil Survey Handbook link: "[National Soil Survey Handbook](#)."

ABC soil

A soil having an A, a B, and a C horizon.

Ablation till

Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil

A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil

The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil

Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone

A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

Alluvial fan

A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium

Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl

A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM)

The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions

Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon

A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo

The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in unconsolidated material. It is usually dry but can be transformed into a temporary watercourse or short-lived torrent after heavy rain within the watershed.

Aspect

The direction toward which a slope faces. Also called slope aspect.

Association, soil

A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity)

The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

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Very low: 0 to 3

Low: 3 to 6

Moderate: 6 to 9

High: 9 to 12

Very high: More than 12

Backslope

The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp

A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Badland

A landscape that is intricately dissected and characterized by a very fine drainage network with high drainage densities and short, steep slopes and narrow interfluves. Badlands develop on surfaces that have little or no vegetative cover overlying unconsolidated or poorly cemented materials (clays, silts, or sandstones) with, in some cases, soluble minerals, such as gypsum or halite.

Bajada

A broad, gently inclined alluvial piedmont slope extending from the base of a mountain range out into a basin and formed by the lateral coalescence of a series of alluvial fans. Typically, it has a broadly undulating transverse profile, parallel to the mountain front, resulting from the convexities of component fans. The term is generally restricted to constructional slopes of intermontane basins.

Basal area

The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation

The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology)

A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane

A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology)

from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system

A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock

The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography

A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace

A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum

Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout (map symbol)

A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed. The adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Borrow pit (map symbol)

An open excavation from which soil and underlying material have been removed, usually for construction purposes.

Bottom land

An informal term loosely applied to various portions of a flood plain.

Boulders

Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks

A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height

An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management

Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte

An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs and characterized by summit width that is less than the height of bounding escarpments; commonly topped by a caprock of resistant material and representing an erosion remnant carved from flat-lying rocks.

Cable yarding

A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil

A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche

A general term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Caliche is formed by both geologic and pedologic processes. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in nonindurated forms to very strong in indurated forms. Other minerals (e.g., carbonates, silicate, and sulfate) may occur as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

California bearing ratio (CBR)

The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy

The leafy crown of trees or shrubs. (See Crown.)

Canyon

A long, deep, narrow valley with high, precipitous walls in an area of high local relief.

Capillary water

Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena

A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation

An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity

The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps

See Terracettes.

Cement rock

Shaly limestone used in the manufacture of cement.

Channery soil material

Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment

Control of unwanted vegetation through the use of chemicals.

Chiseling

Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque

A steep-walled, semicircular or crescent-shaped, half-bowl-like recess or hollow, commonly situated at the head of a glaciated mountain valley or high on the side of a mountain. It was produced by the erosive activity of a mountain glacier. It commonly contains a small round lake (tarn).

Clay

As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions

See Redoximorphic features.

Clay film

A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clay spot (map symbol)

A spot where the surface texture is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser.

Claypan

A dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community

The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil

Sand or loamy sand.

Cobble (or cobblestone)

A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material

Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility)

See Linear extensibility.

Colluvium

Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope

Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil

A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions

See Redoximorphic features.

Conglomerate

A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system

Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage

A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil

Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping

Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section

The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat)

A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology)

A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations)

Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop

A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management

Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system

Growing crops according to a planned system of rotation and management practices.

Cross-slope farming

Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown

The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbate

A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

Cuesta

An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.

Culmination of the mean annual increment (CMAI)

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave

The walls of excavations tend to cave in or slough.

Decreasers

The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing

Postponing grazing or resting grazing land for a prescribed period.

Delta

A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer

A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression, closed (map symbol)

A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage.

Depth, soil

Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement

A natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface. It typically protects the finer grained underlying material from further erosion.

Diatomaceous earth

A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dip slope

A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace)

A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming

A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural)

Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface

Runoff, or surface flow of water, from an area.

Drainageway

A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw

A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Drift

A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin

A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff

A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill

See Mine spoil.

Ecological site

An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation

The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation

A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit

Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream

A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation

A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion

The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (accelerated)

Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion (geologic)

Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion pavement

A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface

A land surface shaped by the action of erosion, especially by running water.

Escarpment

A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Escarpment, bedrock (map symbol)

A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.

Escarpment, nonbedrock (map symbol)

A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.

Esker

A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left

behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Extrusive rock

Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fallow

Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan remnant

A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

Fertility, soil

The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat)

The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity

The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fill slope

A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil

Sandy clay, silty clay, or clay.

Firebreak

An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom

An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material

Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone

A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain

The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms

A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay

A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step

An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial

Of or pertaining to rivers or streams; produced by stream or river action.

Foothills

A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope

The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb

Any herbaceous plant not a grass or a sedge.

Forest cover

All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type

A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan

A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil

The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai

Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glaciofluvial deposits

Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits

Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil

Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping

Growing crops in strips that grade toward a protected waterway.

Grassed waterway

A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel

Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravel pit (map symbol)

An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel.

Gravelly soil material

Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Gravelly spot (map symbol)

A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments.

Green manure crop (agronomy)

A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water

Water filling all the unblocked pores of the material below the water table.

Gully (map symbol)

A small, steep-sided channel caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage whereas a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock

Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim

Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan

A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology)

A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat)

Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops

Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill

A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope

A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil

A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

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O horizon: An organic layer of fresh and decaying plant residue.

L horizon: A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon: The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon: The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon: The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon: The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon: Soft, consolidated bedrock beneath the soil.

R layer: Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

M layer: A root-limiting subsoil layer consisting of nearly continuous, horizontally oriented, human-manufactured materials.

W layer: A layer of water within or beneath the soil.

Humus

The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups

Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock

Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation

The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil

A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasesers

Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasesers commonly are the shorter plants and the less palatable to livestock.

Infiltration

The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity

The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate

The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate

The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

- Very low:* Less than 0.2
- Low:* 0.2 to 0.4
- Moderately low:* 0.4 to 0.75
- Moderate:* 0.75 to 1.25
- Moderately high:* 1.25 to 1.75
- High:* 1.75 to 2.5
- Very high:* More than 2.5

Interfluve

A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology)

A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream

A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders

On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions

See Redoximorphic features.

Irrigation

Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin: Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border: Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding: Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation: Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle): Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow: Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler: Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation: Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding: Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame

A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography)

A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll

A small, low, rounded hill rising above adjacent landforms.

Ksat

See Saturated hydraulic conductivity.

Lacustrine deposit

Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain

A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace

A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Landfill (map symbol)

An area of accumulated waste products of human habitation, either above or below natural ground level.

Landslide

A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones

Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Lava flow (map symbol)

A solidified, commonly lobate body of rock formed through lateral, surface outpouring of molten lava from a vent or fissure.

Leaching

The removal of soluble material from soil or other material by percolating water.

Levee (map symbol)

An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.

Linear extensibility

Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. 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. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit

The moisture content at which the soil passes from a plastic to a liquid state.

Loam

Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess

Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength

The soil is not strong enough to support loads.

Low-residue crops

Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl

An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Marsh or swamp (map symbol)

A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Not used in map units where the named soils are poorly drained or very poorly drained.

Mass movement

A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses

See Redoximorphic features.

Meander belt

The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar

A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll

One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment

Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil

Very fine sandy loam, loam, silt loam, or silt.

Mesa

A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

Metamorphic rock

Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine or quarry (map symbol)

An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines.

Mine spoil

An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil

Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage

Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area

A kind of map unit that has little or no natural soil and supports little or no vegetation.

Miscellaneous water (map symbol)

Small, constructed bodies of water that are used for industrial, sanitary, or mining applications and that contain water most of the year.

Moderately coarse textured soil

Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil

Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon

A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine

In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil

The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil

Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain

A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can

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occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Muck

Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat

See Hemic soil material.

Mudstone

A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation

A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon

A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil

A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules

See Redoximorphic features.

Nose slope (geomorphology)

A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant

Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter

Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

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Very low: Less than 0.5 percent

Low: 0.5 to 1.0 percent

Moderately low: 1.0 to 2.0 percent

Moderate: 2.0 to 4.0 percent

High: 4.0 to 8.0 percent

Very high: More than 8.0 percent

Outwash

Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain

An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace

An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan

A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material

The unconsolidated organic and mineral material in which soil forms.

Peat

Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped

An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment

A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon

The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation

The movement of water through the soil.

Perennial water (map symbol)

Small, natural or constructed lakes, ponds, or pits that contain water most of the year.

Permafrost

Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

pH value

A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil

A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping

Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting

Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit

The moisture content at which a soil changes from semisolid to plastic.

Plasticity index

The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology)

A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Playa

The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Plinthite

The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan

A compacted layer formed in the soil directly below the plowed layer.

Ponding

Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded

Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings

See Redoximorphic features.

Potential native plant community

See Climax plant community.

Potential rooting depth (effective rooting depth)

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning

Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil

The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil

A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use

Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and

promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland

Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil

A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid: Less than 3.5

Extremely acid: 3.5 to 4.4

Very strongly acid: 4.5 to 5.0

Strongly acid: 5.1 to 5.5

Moderately acid: 5.6 to 6.0

Slightly acid: 6.1 to 6.5

Neutral: 6.6 to 7.3

Slightly alkaline: 7.4 to 7.8

Moderately alkaline: 7.9 to 8.4

Strongly alkaline: 8.5 to 9.0

Very strongly alkaline: 9.1 and higher

Red beds

Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations

See Redoximorphic features.

Redoximorphic depletions

See Redoximorphic features.

Redoximorphic features

Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

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1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
 - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
 - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
 - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
 - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
 - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix

See Redoximorphic features.

Regolith

All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief

The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material)

Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill

A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser

The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut

A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments

Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop (map symbol)

An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where "Rock outcrop" is a named component of the map unit.

Root zone

The part of the soil that can be penetrated by plant roots.

Runoff

The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil

A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Saline spot (map symbol)

An area where the surface layer has an electrical conductivity of 8 mmhos/cm more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm or less.

Sand

As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone

Sedimentary rock containing dominantly sand-sized particles.

Sandy spot (map symbol)

A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer.

Sapric soil material (muck)

The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat)

The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are:

Very high: 100 or more micrometers per second (14.17 or more inches per hour)

High: 10 to 100 micrometers per second (1.417 to 14.17 inches per hour)

Moderately high: 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour)

Moderately low: 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour)

Low: 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour)

Very low: Less than 0.01 micrometer per second (less than 0.001417 inch per hour).

To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

Saturation

Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification

The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock

A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum

A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil

A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Severely eroded spot (map symbol)

An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which "severely eroded," "very severely eroded," or "gullied" is part of the map unit name.

Shale

Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion

The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short, steep slope (map symbol)

A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

Shoulder

The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell

The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune

A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology)

A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica

A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio

The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt

As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone

An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils

Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole (map symbol)

A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index

A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic)

Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slide or slip (map symbol)

A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces.

Slope

The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium

Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill

The slow filling of ponds, resulting from restricted water transmission in the soil.

Slow water movement

Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

Sodic (alkali) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodic spot (map symbol)

An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less.

Sodicity

The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $\text{Ca}^{++} + \text{Mg}^{++}$. The degrees of sodicity and their respective ratios are:

Slight: Less than 13:1

Moderate: 13-30:1

Strong: More than 30:1

Sodium adsorption ratio (SAR)

A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock

Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil

A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates

Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand: 2.0 to 1.0

Coarse sand: 1.0 to 0.5

Medium sand: 0.5 to 0.25

Fine sand: 0.25 to 0.10

Very fine sand: 0.10 to 0.05

Silt: 0.05 to 0.002

Clay: Less than 0.002

Solum

The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spoil area (map symbol)

A pile of earthy materials, either smoothed or uneven, resulting from human activity.

Stone line

In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones

Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony

Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony spot (map symbol)

A spot where 0.01 to 0.1 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones.

Strath terrace

A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace

One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping

Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil

The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are:

Platy: Flat and laminated

Prismatic: Vertically elongated and having flat tops

Columnar: Vertically elongated and having rounded tops

Angular blocky: Having faces that intersect at sharp angles (planes)

Subangular blocky: Having subrounded and planar faces (no sharp angles)

Granular: Small structural units with curved or very irregular faces

Structureless soil horizons are defined as follows:

Single grained: Entirely noncoherent (each grain by itself), as in loose sand

Massive: Occurring as a coherent mass

Stubble mulch

Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil

Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling

Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum

The part of the soil below the solum.

Subsurface layer

Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow

The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit

The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer

The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil

The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus

Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts

Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine

An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation)

An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field

generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology)

A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes

Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil

The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer

Otherwise suitable soil material that is too thin for the specified use.

Till

Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain

An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil

The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope

The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil

The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements

Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread

The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Tuff

A generic term for any consolidated or cemented deposit that is 50 percent or more volcanic ash.

Upland

An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill

The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variiegation

Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve

A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Very stony spot (map symbol)

A spot where 0.1 to 3.0 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surface of the surrounding soil is covered by less than 0.01 percent stones.

Water bars

Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering

All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded

Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wet spot (map symbol)

A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit.

Wilting point (or permanent wilting point)

The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow

The uprooting and tipping over of trees by the wind.

IPaC Information for Planning and Consultation U.S. Fish & Wildlife Service

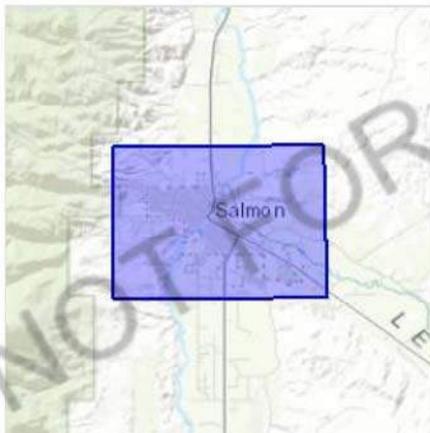
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Lemhi County, Idaho



Local office

Idaho Fish And Wildlife Office

☎ (208) 378-5243

📠 (208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please [contact NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3652	Threatened
North American Wolverine <i>Gulo gulo luscus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout <i>Salvelinus confluentus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8212	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Bull Trout <i>Salvelinus confluentus</i> https://ecos.fws.gov/ecp/species/8212#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Jan 1 to Aug 31

Black Rosy-finch *Leucosticte atrata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9460>

Breeds Jun 15 to Aug 31

Brewer's Sparrow *Spizella breweri*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9291>

Breeds May 15 to Aug 10

Cassin's Finch *Carpodacus cassinii*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9462>

Breeds May 15 to Jul 15

Clark's Grebe *Aechmophorus clarkii*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jan 1 to Dec 31

Golden Eagle *Aquila chrysaetos*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/1680>

Breeds Jan 1 to Aug 31

Green-tailed Towhee *Pipilo chlorurus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9444>

Breeds May 1 to Aug 10

<p>Lesser Yellowlegs <i>Tringa flavipes</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Lewis's Woodpecker <i>Melanerpes lewis</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9408</p>	Breeds Apr 20 to Sep 30
<p>Long-billed Curlew <i>Numenius americanus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/5511</p>	Breeds Apr 1 to Jul 31
<p>Marbled Godwit <i>Limosa fedoa</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9481</p>	Breeds May 1 to Jul 31
<p>Olive-sided Flycatcher <i>Contopus cooperi</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/3914</p>	Breeds May 20 to Aug 31
<p>Pinyon Jay <i>Gymnorhinus cyanocephalus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9420</p>	Breeds Feb 15 to Jul 15
<p>Rufous Hummingbird <i>selasphorus rufus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/8002</p>	Breeds Apr 15 to Jul 15
<p>Sage Thrasher <i>Oreoscoptes montanus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/9433</p>	Breeds Apr 15 to Aug 10
<p>Willet <i>Tringa semipalmata</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 20 to Aug 5

Williamson's Sapsucker *Sphyrapicus thyroideus*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/8832>

Willow Flycatcher *Empidonax traillii*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/3482>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

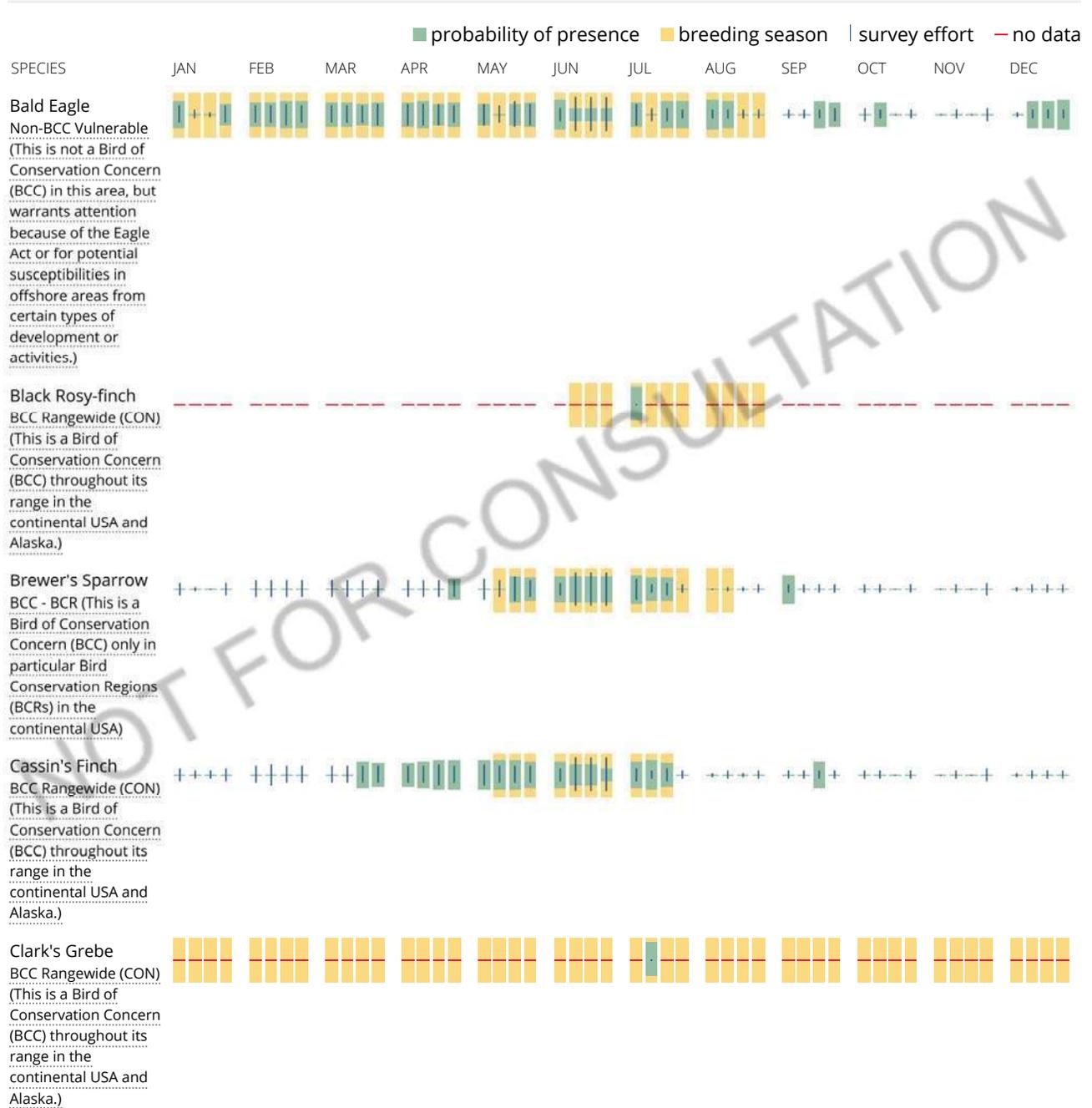
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

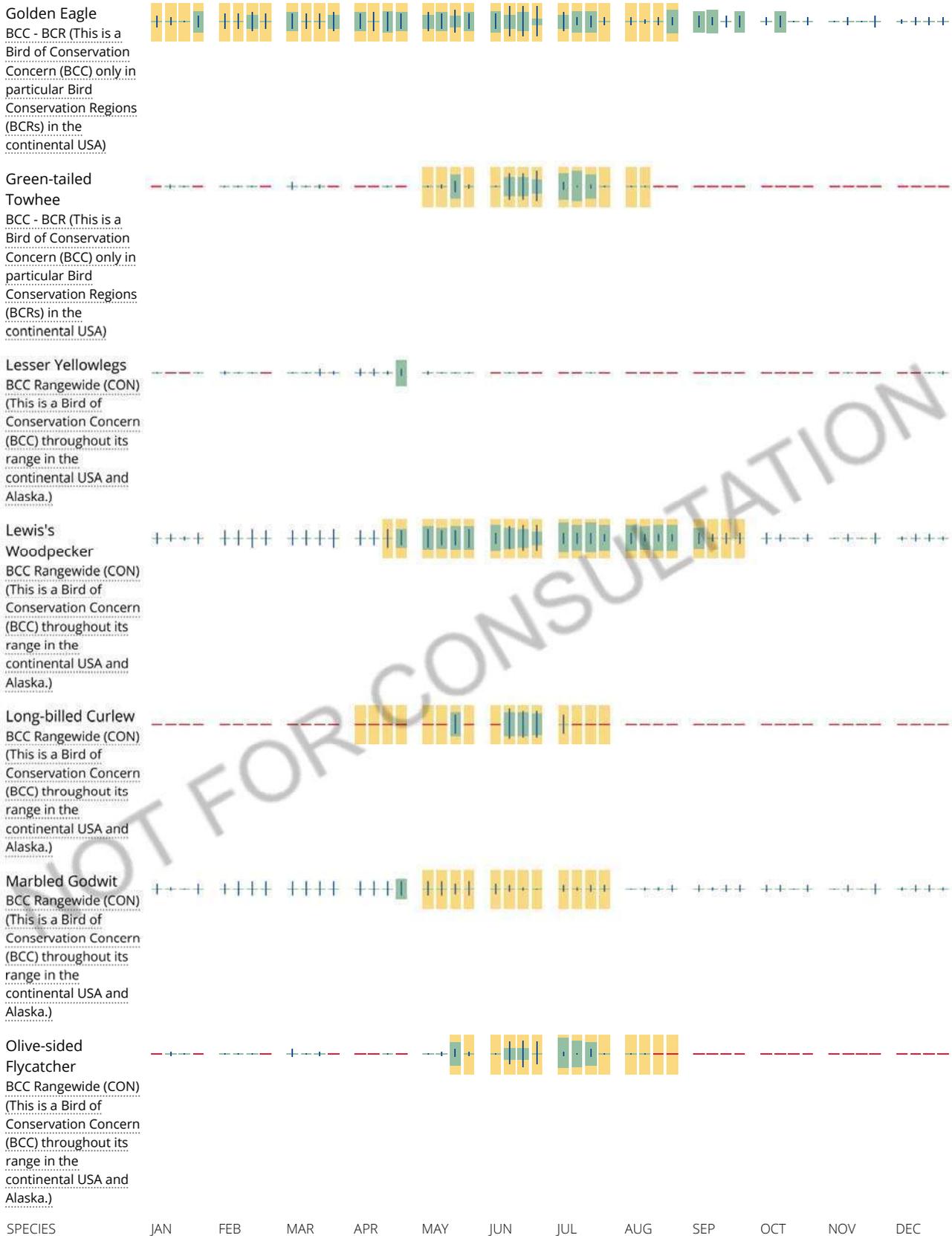
No Data (-)

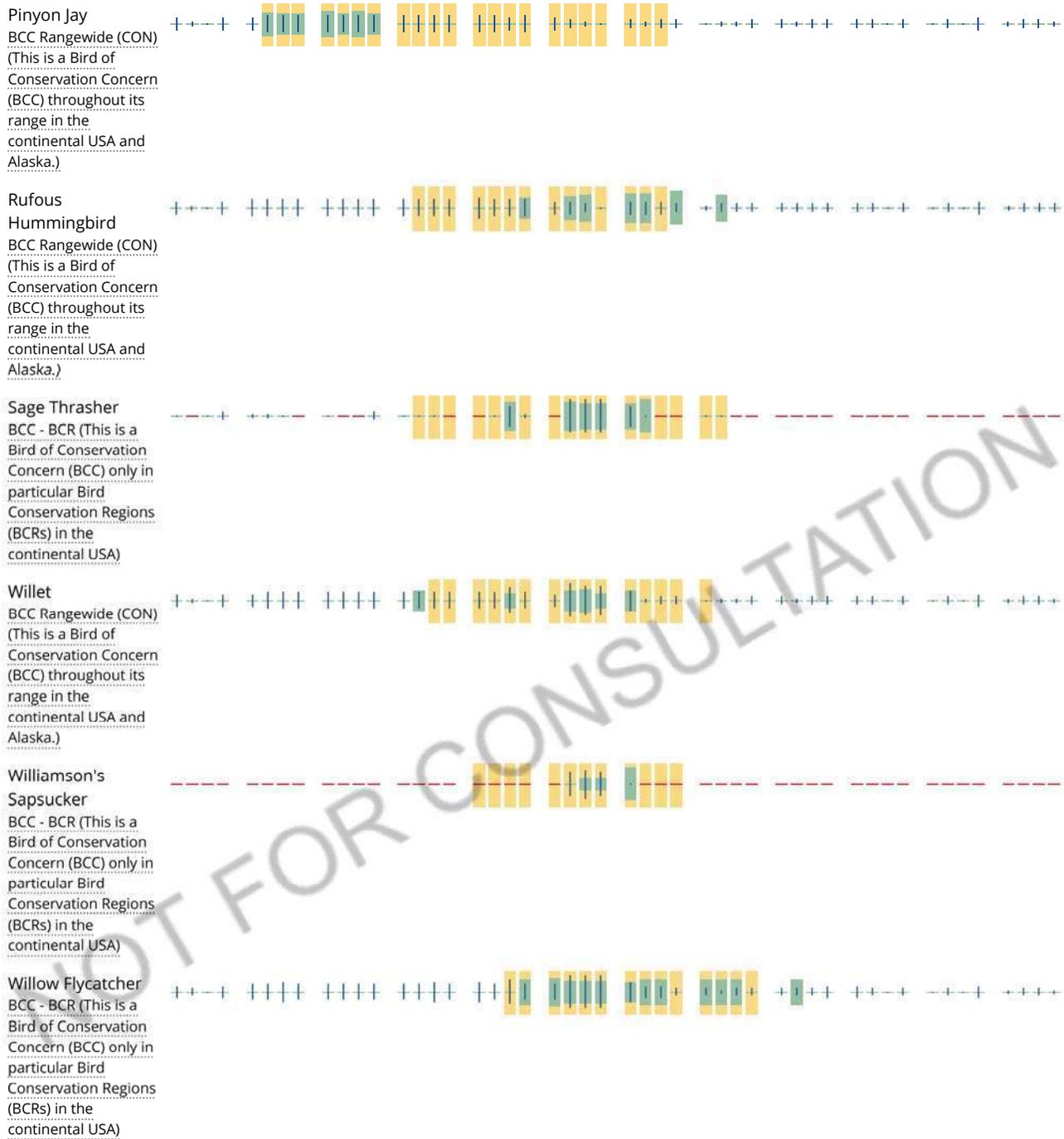
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEMA](#)

[PEMCx](#)

[PEMC](#)
[PEMAx](#)
[PEME](#)
[PEMCh](#)
[PEMFh](#)
[PEMB](#)
[PEMAh](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSSA](#)
[PFOA](#)
[PSSC](#)
[PFOAx](#)

FRESHWATER POND

[PABKx](#)
[PUBKx](#)
[PABFh](#)
[PABF](#)
[PUBFx](#)
[PUSCx](#)

RIVERINE

[R3UBH](#)
[R3USA](#)
[R3USC](#)
[R3UBF](#)

A full description for each wetland code can be found at the National Wetlands Inventory website:
<https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some

deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION



DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.

Geography: Salmon city, Idaho

Subject	Number	Percent
SEX AND AGE		
Total population	3,112	100.0
Under 5 years	193	6.2
5 to 9 years	177	5.7
10 to 14 years	172	5.5
15 to 19 years	192	6.2
20 to 24 years	124	4.0
25 to 29 years	165	5.3
30 to 34 years	174	5.6
35 to 39 years	158	5.1
40 to 44 years	173	5.6
45 to 49 years	236	7.6
50 to 54 years	225	7.2
55 to 59 years	228	7.3
60 to 64 years	246	7.9
65 to 69 years	204	6.6
70 to 74 years	137	4.4
75 to 79 years	105	3.4
80 to 84 years	91	2.9
85 years and over	112	3.6
Median age (years)	45.7	(X)
16 years and over	2,529	81.3
18 years and over	2,449	78.7
21 years and over	2,351	75.5
62 years and over	782	25.1
65 years and over	649	20.9
Male population		
Under 5 years	100	3.2
5 to 9 years	94	3.0
10 to 14 years	92	3.0
15 to 19 years	110	3.5
20 to 24 years	61	2.0
25 to 29 years	78	2.5
30 to 34 years	89	2.9
35 to 39 years	76	2.4
40 to 44 years	88	2.8
45 to 49 years	117	3.8
50 to 54 years	110	3.5
55 to 59 years	120	3.9
60 to 64 years	109	3.5

Subject	Number	Percent
65 to 69 years	109	3.5
70 to 74 years	65	2.1
75 to 79 years	46	1.5
80 to 84 years	41	1.3
85 years and over	30	1.0
Median age (years)	44.0	(X)
16 years and over	1,225	39.4
18 years and over	1,177	37.8
21 years and over	1,125	36.2
62 years and over	351	11.3
65 years and over	291	9.4
Female population	1,577	50.7
Under 5 years	93	3.0
5 to 9 years	83	2.7
10 to 14 years	80	2.6
15 to 19 years	82	2.6
20 to 24 years	63	2.0
25 to 29 years	87	2.8
30 to 34 years	85	2.7
35 to 39 years	82	2.6
40 to 44 years	85	2.7
45 to 49 years	119	3.8
50 to 54 years	115	3.7
55 to 59 years	108	3.5
60 to 64 years	137	4.4
65 to 69 years	95	3.1
70 to 74 years	72	2.3
75 to 79 years	59	1.9
80 to 84 years	50	1.6
85 years and over	82	2.6
Median age (years)	47.0	(X)
16 years and over	1,304	41.9
18 years and over	1,272	40.9
21 years and over	1,226	39.4
62 years and over	431	13.8
65 years and over	358	11.5
RACE		
Total population	3,112	100.0
One Race	3,063	98.4
White	3,003	96.5
Black or African American	8	0.3
American Indian and Alaska Native	16	0.5
Asian	20	0.6
Asian Indian	0	0.0
Chinese	6	0.2
Filipino	4	0.1
Japanese	2	0.1
Korean	4	0.1
Vietnamese	0	0.0
Other Asian [1]	4	0.1
Native Hawaiian and Other Pacific Islander	0	0.0
Native Hawaiian	0	0.0
Guamanian or Chamorro	0	0.0
Samoan	0	0.0

Subject	Number	Percent
Other Pacific Islander [2]	0	0.0
Some Other Race	16	0.5
Two or More Races	49	1.6
White; American Indian and Alaska Native [3]	28	0.9
White; Asian [3]	2	0.1
White; Black or African American [3]	9	0.3
White; Some Other Race [3]	2	0.1
Race alone or in combination with one or more other races: [4]		
White	3,051	98.0
Black or African American	18	0.6
American Indian and Alaska Native	45	1.4
Asian	22	0.7
Native Hawaiian and Other Pacific Islander	6	0.2
Some Other Race	20	0.6
HISPANIC OR LATINO		
Total population	3,112	100.0
Hispanic or Latino (of any race)	82	2.6
Mexican	60	1.9
Puerto Rican	7	0.2
Cuban	0	0.0
Other Hispanic or Latino [5]	15	0.5
Not Hispanic or Latino	3,030	97.4
HISPANIC OR LATINO AND RACE		
Total population	3,112	100.0
Hispanic or Latino	82	2.6
White alone	59	1.9
Black or African American alone	2	0.1
American Indian and Alaska Native alone	1	0.0
Asian alone	0	0.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	15	0.5
Two or More Races	5	0.2
Not Hispanic or Latino	3,030	97.4
White alone	2,944	94.6
Black or African American alone	6	0.2
American Indian and Alaska Native alone	15	0.5
Asian alone	20	0.6
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	1	0.0
Two or More Races	44	1.4
RELATIONSHIP		
Total population	3,112	100.0
In households	3,038	97.6
Householder	1,420	45.6
Spouse [6]	588	18.9
Child	739	23.7
Own child under 18 years	588	18.9
Other relatives	123	4.0
Under 18 years	55	1.8
65 years and over	14	0.4
Nonrelatives	168	5.4
Under 18 years	16	0.5
65 years and over	13	0.4
Unmarried partner	97	3.1
In group quarters	74	2.4

Subject	Number	Percent
Institutionalized population	70	2.2
Male	24	0.8
Female	46	1.5
Noninstitutionalized population	4	0.1
Male	2	0.1
Female	2	0.1
HOUSEHOLDS BY TYPE		
Total households	1,420	100.0
Family households (families) [7]	807	56.8
With own children under 18 years	327	23.0
Husband-wife family	588	41.4
With own children under 18 years	190	13.4
Male householder, no wife present	58	4.1
With own children under 18 years	33	2.3
Female householder, no husband present	161	11.3
With own children under 18 years	104	7.3
Nonfamily households [7]	613	43.2
Householder living alone	538	37.9
Male	262	18.5
65 years and over	91	6.4
Female	276	19.4
65 years and over	140	9.9
Households with individuals under 18 years	364	25.6
Households with individuals 65 years and over	462	32.5
Average household size	2.14	(X)
Average family size [7]	2.80	(X)
HOUSING OCCUPANCY		
Total housing units	1,628	100.0
Occupied housing units	1,420	87.2
Vacant housing units	208	12.8
For rent	60	3.7
Rented, not occupied	6	0.4
For sale only	32	2.0
Sold, not occupied	1	0.1
For seasonal, recreational, or occasional use	40	2.5
All other vacants	69	4.2
Homeowner vacancy rate (percent) [8]	3.3	(X)
Rental vacancy rate (percent) [9]	10.8	(X)
HOUSING TENURE		
Occupied housing units	1,420	100.0
Owner-occupied housing units	930	65.5
Population in owner-occupied housing units	2,039	(X)
Average household size of owner-occupied units	2.19	(X)
Renter-occupied housing units	490	34.5
Population in renter-occupied housing units	999	(X)
Average household size of renter-occupied units	2.04	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six

percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.

[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.



DP03

SELECTED ECONOMIC CHARACTERISTICS

2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Subject	Salmon city, Idaho			
	Estimate	Margin of Error	Percent	Percent Margin of Error
EMPLOYMENT STATUS				
Population 16 years and over	2,449	+/-102	2,449	(X)
In labor force	1,307	+/-133	53.4%	+/-5.6
Civilian labor force	1,307	+/-133	53.4%	+/-5.6
Employed	1,255	+/-133	51.2%	+/-5.6
Unemployed	52	+/-47	2.1%	+/-1.9
Armed Forces	0	+/-12	0.0%	+/-1.3
Not in labor force	1,142	+/-156	46.6%	+/-5.6
Civilian labor force	1,307	+/-133	1,307	(X)
Unemployment Rate	(X)	(X)	4.0%	+/-3.5
Females 16 years and over	1,230	+/-101	1,230	(X)
In labor force	557	+/-101	45.3%	+/-8.2
Civilian labor force	557	+/-101	45.3%	+/-8.2
Employed	544	+/-99	44.2%	+/-8.0
Own children of the householder under 6 years	272	+/-72	272	(X)
All parents in family in labor force	95	+/-57	34.9%	+/-21.6
Own children of the householder 6 to 17 years	420	+/-84	420	(X)
All parents in family in labor force	169	+/-80	40.2%	+/-19.6
COMMUTING TO WORK				
Workers 16 years and over	1,215	+/-135	1,215	(X)
Car, truck, or van -- drove alone	876	+/-152	72.1%	+/-9.7
Car, truck, or van -- carpooled	172	+/-104	14.2%	+/-8.8
Public transportation (excluding taxicab)	0	+/-12	0.0%	+/-2.6
Walked	93	+/-87	7.7%	+/-7.0
Other means	0	+/-12	0.0%	+/-2.6
Worked at home	74	+/-47	6.1%	+/-3.6
Mean travel time to work (minutes)	11.5	+/-4.2	(X)	(X)

Subject	Salmon city, Idaho			
	Estimate	Margin of Error	Percent	Percent Margin of Error
OCCUPATION				
Civilian employed population 16 years and over	1,255	+/-133	1,255	(X)
Management, business, science, and arts occupations	284	+/-115	22.6%	+/-8.4
Service occupations	311	+/-119	24.8%	+/-8.9
Sales and office occupations	366	+/-116	29.2%	+/-9.0
Natural resources, construction, and maintenance occupations	114	+/-54	9.1%	+/-4.1
Production, transportation, and material moving occupations	180	+/-73	14.3%	+/-6.1
INDUSTRY				
Civilian employed population 16 years and over	1,255	+/-133	1,255	(X)
Agriculture, forestry, fishing and hunting, and mining	101	+/-62	8.0%	+/-4.7
Construction	69	+/-49	5.5%	+/-3.8
Manufacturing	104	+/-61	8.3%	+/-5.0
Wholesale trade	0	+/-12	0.0%	+/-2.6
Retail trade	275	+/-96	21.9%	+/-7.7
Transportation and warehousing, and utilities	33	+/-39	2.6%	+/-3.1
Information	20	+/-25	1.6%	+/-2.0
Finance and insurance, and real estate and rental and leasing	52	+/-41	4.1%	+/-3.3
Professional, scientific, and management, and administrative and waste management services	54	+/-46	4.3%	+/-3.6
Educational services, and health care and social assistance	239	+/-83	19.0%	+/-6.3
Arts, entertainment, and recreation, and accommodation and food services	152	+/-102	12.1%	+/-8.0
Other services, except public administration	57	+/-45	4.5%	+/-3.5
Public administration	99	+/-49	7.9%	+/-3.8
CLASS OF WORKER				
Civilian employed population 16 years and over	1,255	+/-133	1,255	(X)
Private wage and salary workers	847	+/-129	67.5%	+/-8.5
Government workers	256	+/-91	20.4%	+/-6.7
Self-employed in own not incorporated business workers	152	+/-73	12.1%	+/-5.4
Unpaid family workers	0	+/-12	0.0%	+/-2.6
INCOME AND BENEFITS (IN 2017 INFLATION-ADJUSTED DOLLARS)				
Total households	1,466	+/-136	1,466	(X)
Less than \$10,000	189	+/-85	12.9%	+/-5.4
\$10,000 to \$14,999	114	+/-56	7.8%	+/-3.7
\$15,000 to \$24,999	334	+/-106	22.8%	+/-6.9
\$25,000 to \$34,999	198	+/-63	13.5%	+/-4.3
\$35,000 to \$49,999	193	+/-97	13.2%	+/-6.4
\$50,000 to \$74,999	223	+/-69	15.2%	+/-4.8
\$75,000 to \$99,999	78	+/-48	5.3%	+/-3.2
\$100,000 to \$149,999	117	+/-52	8.0%	+/-3.6
\$150,000 to \$199,999	8	+/-13	0.5%	+/-0.9
\$200,000 or more	12	+/-18	0.8%	+/-1.2
Median household income (dollars)	28,571	+/-6,644	(X)	(X)
Mean household income (dollars)	40,824	+/-5,084	(X)	(X)
With earnings				
Mean earnings (dollars)	41,889	+/-5,989	(X)	(X)
With Social Security				
Mean Social Security income (dollars)	15,811	+/-2,111	(X)	(X)
With retirement income				
Mean retirement income (dollars)	15,513	+/-3,784	(X)	(X)
With Supplemental Security Income				
	107	+/-60	7.3%	+/-4.3

Subject	Salmon city, Idaho			
	Estimate	Margin of Error	Percent	Percent Margin of Error
Mean Supplemental Security Income (dollars)	7,042	+/-1,313	(X)	(X)
With cash public assistance income	34	+/-34	2.3%	+/-2.3
Mean cash public assistance income (dollars)	1,394	+/-2,081	(X)	(X)
With Food Stamp/SNAP benefits in the past 12 months	237	+/-89	16.2%	+/-6.2
Families	787	+/-93	787	(X)
Less than \$10,000	49	+/-39	6.2%	+/-5.0
\$10,000 to \$14,999	30	+/-32	3.8%	+/-4.0
\$15,000 to \$24,999	189	+/-86	24.0%	+/-10.2
\$25,000 to \$34,999	79	+/-37	10.0%	+/-4.5
\$35,000 to \$49,999	82	+/-62	10.4%	+/-7.7
\$50,000 to \$74,999	166	+/-54	21.1%	+/-6.9
\$75,000 to \$99,999	64	+/-41	8.1%	+/-5.1
\$100,000 to \$149,999	108	+/-50	13.7%	+/-6.3
\$150,000 to \$199,999	8	+/-13	1.0%	+/-1.6
\$200,000 or more	12	+/-18	1.5%	+/-2.3
Median family income (dollars)	48,028	+/-17,541	(X)	(X)
Mean family income (dollars)	52,377	+/-8,037	(X)	(X)
Per capita income (dollars)	19,636	+/-2,425	(X)	(X)
Nonfamily households	679	+/-129	679	(X)
Median nonfamily income (dollars)	22,756	+/-6,841	(X)	(X)
Mean nonfamily income (dollars)	26,685	+/-4,753	(X)	(X)
Median earnings for workers (dollars)	21,353	+/-1,718	(X)	(X)
Median earnings for male full-time, year-round workers (dollars)	37,031	+/-7,366	(X)	(X)
Median earnings for female full-time, year-round workers (dollars)	31,250	+/-9,442	(X)	(X)
HEALTH INSURANCE COVERAGE				
Civilian noninstitutionalized population	3,016	+/-52	3,016	(X)
With health insurance coverage	2,509	+/-158	83.2%	+/-4.8
With private health insurance	1,611	+/-235	53.4%	+/-7.7
With public coverage	1,507	+/-196	50.0%	+/-6.2
No health insurance coverage	507	+/-142	16.8%	+/-4.8
Civilian noninstitutionalized population under 19 years	761	+/-106	761	(X)
No health insurance coverage	39	+/-33	5.1%	+/-4.5
Civilian noninstitutionalized population 19 to 64 years	1,566	+/-110	1,566	(X)
In labor force:	1,178	+/-126	1,178	(X)
Employed:	1,135	+/-124	1,135	(X)
With health insurance coverage	834	+/-135	73.5%	+/-9.2
With private health insurance	773	+/-144	68.1%	+/-9.9
With public coverage	89	+/-54	7.8%	+/-4.7
No health insurance coverage	301	+/-111	26.5%	+/-9.2
Unemployed:	43	+/-40	43	(X)
With health insurance coverage	0	+/-12	0.0%	+/-45.2
With private health insurance	0	+/-12	0.0%	+/-45.2
With public coverage	0	+/-12	0.0%	+/-45.2
No health insurance coverage	43	+/-40	100.0%	+/-45.2
Not in labor force:	388	+/-100	388	(X)
With health insurance coverage	264	+/-85	68.0%	+/-17.2
With private health insurance	117	+/-48	30.2%	+/-13.5
With public coverage	187	+/-79	48.2%	+/-16.0
No health insurance coverage	124	+/-78	32.0%	+/-17.2

Subject	Salmon city, Idaho			
	Estimate	Margin of Error	Percent	Percent Margin of Error
PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL				
All families	(X)	(X)	14.4%	+/-7.2
With related children of the householder under 18 years	(X)	(X)	29.8%	+/-14.1
With related children of the householder under 5 years only	(X)	(X)	42.4%	+/-29.8
Married couple families	(X)	(X)	10.9%	+/-7.2
With related children of the householder under 18 years	(X)	(X)	21.6%	+/-15.4
With related children of the householder under 5 years only	(X)	(X)	40.9%	+/-47.0
Families with female householder, no husband present	(X)	(X)	31.6%	+/-22.3
With related children of the householder under 18 years	(X)	(X)	45.2%	+/-28.1
With related children of the householder under 5 years only	(X)	(X)	31.1%	+/-39.6
All people	(X)	(X)	22.3%	+/-7.3
Under 18 years	(X)	(X)	34.4%	+/-15.7
Related children of the householder under 18 years	(X)	(X)	34.4%	+/-15.7
Related children of the householder under 5 years	(X)	(X)	49.5%	+/-24.3
Related children of the householder 5 to 17 years	(X)	(X)	28.0%	+/-16.1
18 years and over	(X)	(X)	18.6%	+/-6.2
18 to 64 years	(X)	(X)	22.6%	+/-8.3
65 years and over	(X)	(X)	9.0%	+/-5.6
People in families	(X)	(X)	18.9%	+/-7.9
Unrelated individuals 15 years and over	(X)	(X)	31.6%	+/-11.5

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Employment and unemployment estimates may vary from the official labor force data released by the Bureau of Labor Statistics because of differences in survey design and data collection. For guidance on differences in employment and unemployment estimates from different sources go to Labor Force Guidance.

Workers include members of the Armed Forces and civilians who were at work last week.

Industry codes are 4-digit codes and are based on the North American Industry Classification System 2012. The Industry categories adhere to the guidelines issued in Clarification Memorandum No. 2, "NAICS Alternate Aggregation Structure for Use By U.S. Statistical Agencies," issued by the Office of Management and Budget.

Occupation codes are 4-digit codes and are based on Standard Occupational Classification 2010.

Logical coverage edits applying a rules-based assignment of Medicaid, Medicare and military health coverage were added as of 2009 -- please see https://www.census.gov/library/working-papers/2010/demo/coverage_edits_final.html for more details. The 2008 data table in American FactFinder does not incorporate these edits. Therefore, the estimates that appear in these tables are not comparable to the estimates in the 2009 and later tables. Select geographies of 2008 data comparable to the 2009 and later tables are available at <https://www.census.gov/data/tables/time-series/acs/1-year-re-run-health-insurance.html>. The health insurance coverage category names were modified in 2010. See https://www.census.gov/topics/health/health-insurance/about/glossary.html#par_textimage_18 for a list of the insurance type definitions.

Beginning in 2017, selected variable categories were updated, including age-categories, income-to-poverty ratio (IPR) categories, and the age universe for certain employment and education variables. See user note entitled "Health Insurance Table Updates" for further details.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-l' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+u' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '****' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.



APPENDIX B – Water Rights

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-4

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	HARRY KELLY

Priority Date: 04/01/1894

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	1.2 CFS	210 AFA
Total Diversion			1.2 CFS	

Location of Point(s) of Diversion:

POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NENE Lt 1	Sec. 10	Township 21N	Range 21E	LEMHI County

POLLARD CANYON CREEK	NENE Lt 1	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Rediversion	NENE Lt 1	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. C03 Right includes accomplished change in point of diversion, place of use and nature of use pursuant to Section 42-1425, Idaho Code.
3. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
4. For purposes of administration of sources for this right, the water shall first be diverted exclusively from the natural flow of Jesse Creek. When Jesse Creek is no longer sufficient for use under the rights in priority and calling for water, the waters of Pollard Canyon Creek may be diverted as necessary to provide the balance of water required pursuant to this right in its priority. Only when the water supply from Jesse and Pollard Canyon Creeks combined is not sufficient for use under the rights in priority and calling for water may water from Chipps Creek be diverted to provide the balance of water required pursuant to this right in its priority.
5. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
6. The point of diversion in T21N, R21E, S11, NWNW is from Chipps Creek. The point of injection in T21N, R21E, S10, NENE is into Pollard Canyon Creek. The point of diversion and the point of rediversion in T21N, R21E, S10, NENE are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
7. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
8. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF.
9. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
10. Water is diverted from Jesse Creek and its tributaries.
11. The holder of this right will not call for water from Chipps Creek or Pollard Canyon Creek prior to August 1 of any year if diversions under Right Nos. 75-2 or 75-5 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.
12. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
13. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-7

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	CITIZENS NATIONAL BANK

Priority Date: 04/01/1894

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	4/01	10/31	4 CFS	
Total Diversion			4 CFS	

Location of Point(s) of Diversion:

JESSE CREEK|NENE Lt 1|Sec. 02|Township 21N|Range 21E|LEMHI County

Place(s) of use: No POUs found for this right

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
3. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
4. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
5. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).
6. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
7. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF.
8. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number: 75A

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:
Cary Act Number:
Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-17A

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	DALMAR MANFULL , ID
Original Owner	DARRELL C ALDOUS PO BOX 807 SALMON, ID 83467

Priority Date: 06/01/1867

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	1.26 CFS	
Total Diversion			1.26 CFS	

Location of Point(s) of Diversion:

JESSE CREEK|SENENE|Sec. 02|Township 21N|Range 21E|LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. P21 This right is a split from former right 75-17.
2. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
3. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
4. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
5. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
6. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF.
7. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
8. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
9. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-17B

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	DALMAR MANFULL

Priority Date: 06/01/1867

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	0.24 CFS	
Total Diversion			0.24 CFS	

Location of Point(s) of Diversion:

JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Rediversion	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County

CHIPPS CREEK Injection	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK	NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. P21 This right is a split from former right 75-17.
2. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
3. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
For purposes of administration of sources for this right, the water shall first be diverted exclusively from the natural flow of Jesse Creek. When Jesse Creek is no longer sufficient for use under the rights in priority and calling for water, the waters of Pollard Canyon Creek may be diverted as necessary to provide the balance of water required pursuant to this right in its priority.
4. The point of diversion in T21N, R21E, S11, NWNW, is from Chipps Creek. The point of injection in T21N, R21E, S10, NENE, is into Pollard Canyon Creek. The point of diversion and the point of
5. rediversion in T21N, R21E, S10, NENE, are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
6. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
7. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
8. C03 Right includes accomplished change in point of diversion pursuant to Section 42-1425, Idaho Code.
9. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).
10. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
11. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF, with no more than 970.5 AF diverted from Chipps and Pollard Canyon Creeks.
12. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
13. Water is diverted from Jesse Creek and its tributaries.
14. The holder of this right will not call for water from Chipps Creek or Pollard Canyon Creek prior to August 1 of any year if diversions under Right Nos. 75-2 or 75-5 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.

15. The holder of this right will not call for water from Chipps Creek prior to August 30 of any year if diversions under Right No. 75-22 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.
16. The holder of this water right will not make a call on Right Nos. 75-19G or 75-21 diverted from Chipps Creek for domestic use of 12 af per year as to Right No. 75-19G (including all progeny, when owned, controlled and delivered by Arrowhead Water District) and 42.17 af per year as to Right No. 75-21 (including all progeny, when owned, controlled and delivered by Arrowhead Water District). This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right.

Dates:

Licensed Date:

Decreed Date: 08/23/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-19B

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	JOHN COLE
Original Owner	C C WILLIS
Original Owner	JOHN WHEELER

Priority Date: 06/01/1868

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	0.493 CFS	
Total Diversion			0.493 CFS	

Location of Point(s) of Diversion:

JESSE CREEK | NENE Lt 1 | Sec. 02 | Township 21N | Range 21E | County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
3. P21 This right is a split from former right 75-19.
4. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
5. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
6. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF.
7. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
8. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).
9. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-19C

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	C C WILLIS
Original Owner	JOHN WHEELER

Priority Date: 06/01/1868

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	1.5 CFS	
Total Diversion			1.5 CFS	

Location of Point(s) of Diversion:

POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County

POLLARD CANYON CREEK	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Rediversion	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK	NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. C03 Right includes accomplished change in point of diversion, place of use and nature of use pursuant to Section 42-1425, Idaho Code.
For purposes of administration of sources for this right, the water shall first be diverted exclusively from the natural flow of Jesse Creek. When Jesse Creek is no longer sufficient for use under the rights in priority and calling for water, the waters of Pollard Canyon Creek may be diverted as necessary to provide the balance of water required pursuant to this right in its priority.
3. Only when the water supply from Jesse and Pollard Canyon Creeks combined is not sufficient for use under the rights in priority and calling for water may water from Chipps Creek be diverted to provide the balance of water required pursuant to this right in its priority.
4. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
The point of diversion in T21N, R21E, S11, NWNW is from Chipps Creek. The point of injection in T21N, R21E, S10, NENE is into Pollard Canyon Creek. The point of diversion and the point of rediversion in T21N, R21E, S10, NENE are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
5. Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
6. 124 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
7. R05 This right is a split from former right 75-19.
8. P21 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).
9. R43 This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
10. Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF.
11. E53 The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
12. Water is diverted from Jesse Creek and its tributaries.
13. The holder of this right will not call for water from Chipps Creek or Pollard Canyon Creek prior to August 1 of any year if diversions under Right Nos. 75-2 or 75-5 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek under this right. This condition is not applicable anytime the total flow
- 14.

15. available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075. The holder of this right will not call for water from Chipps Creek prior to August 30 of any year if diversions under Right No. 75-22 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.
16. The holder of this water right will not make a call on Right Nos. 75-19G or 75-21 diverted from Chipps Creek for domestic use of 12 af per year as to Right No. 75-19G (including all progeny, when owned, controlled and delivered by Arrowhead Water District) and 42.17 af per year as to Right No. 75-21 (including all progeny, when owned, controlled and delivered by Arrowhead Water District). This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right.

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-26A

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950

Priority Date: 05/01/1884

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	0.3 CFS	52.5 AFA
Total Diversion			0.3 CFS	

Location of Point(s) of Diversion:

JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Rediversion	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County

POLLARD CANYON CREEK
CHIPPS CREEK

|NENE
|NWNW

|Sec. 10|Township 21N|Range 21E|LEMHI County
|Sec. 11|Township 21N|Range 21E|LEMHI County

Place(s) of use: No POUs found for this right

Conditions of Approval:

1. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
2. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
3. G01 The point of diversion in T21N, R21E, S11, NWNW is from Chipps Creek. The point of injection in T21N, R21E, S10, NENE is into Pollard Canyon Creek. The point of diversion and the point of rediversion in T21N, R21E, S10, NENE are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
4. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
For purposes of administration of sources for this right, the water shall first be diverted exclusively from the natural flow of Jesse Creek. When Jesse Creek is no longer sufficient for use under the rights in priority and calling for water, the waters of Pollard Canyon Creek may be diverted as necessary to provide the balance of water required pursuant to this right in its priority. Only when the water supply from Jesse and Pollard Canyon Creeks combined is not sufficient for use under the rights in priority and calling for water may Chipps Creek be diverted to provide the balance of water required pursuant to this right in its priority.
6. C03 Right includes accomplished change in point of diversion, place of use and nature of use pursuant to Section 42-1425, Idaho Code.
7. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
8. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF, with no more than 970.5 AF diverted from Chipps and Pollard Canyon Creeks.
9. The sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
10. Water is diverted from Jesse Creek and its tributaries.
11. The holder of this right will not call for water from Chipps Creek or Pollard Canyon Creek prior to August 1 of any year if diversions under Right Nos. 75-2 or 75-5 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.
12. The holder of this right will not call for water from Chipps Creek prior to August 30 of any year if diversions under Right No. 75-22 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right. This condition is not applicable anytime the total flow available for diversions in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.

13. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
14. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number: 75A

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-114

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	BERTHA N ROSE

Priority Date: 04/01/1894

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	0.5 CFS	70 AFA
Total Diversion			0.5 CFS	

Location of Point(s) of Diversion:

JESSE CREEK|NENE Lt 1|Sec. 02|Township 21N|Range 21E|LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
3. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
4. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
5. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).
6. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
7. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF.
8. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:
Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-2167

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	SALMON CITY WATER CO LTD SALMON, ID

Priority Date: 04/21/1905
Basis: Decreed
Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	01/01	12/31	2 CFS	
Total Diversion			2 CFS	

Location of Point(s) of Diversion:

POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County

POLLARD CANYON CREEK	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Rediversion	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK	NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. C03 Right includes accomplished change in point of diversion pursuant to Section 42-1425, Idaho Code.
3. C04 Right includes accomplished change in purpose of use pursuant to Section 42-1425, Idaho Code.
4. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
For purposes of administration of sources for this right, the water shall first be diverted exclusively from the natural flow of Jesse Creek. When Jesse Creek is no longer sufficient for use under the rights in priority and calling for water, the waters of Pollard Canyon Creek may be diverted as necessary to provide the balance of water required pursuant to this right in its priority. Only when the water supply from Jesse and Pollard Canyon Creeks combined is not sufficient for use under the rights in priority and calling for water may water from Chipps Creek be diverted to provide the balance of water required pursuant to this right in its priority.
5. Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
The point of diversion in T21N, R21E, S11, NWNW is from Chipps Creek. The point of injection into T21N, R21E, S10, NENE is into Pollard Canyon Creek. The point of diversion and the point of rediversion in T21N, R21E, S10, NENE are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
6. E51 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
7. Water is diverted from Jesse Creek and its tributaries.
8. R05 The holder of this right will not call for water under this right from Chipps Creek from April 1 to October 31 of any year if diversions under Right Nos. 75-2162, 75-10046, 75-10047, or 75-14465 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right.
9. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).
10. R43 The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
11. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
- 12.
- 13.

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Permit Proof Due Date:
Permit Proof Made Date:
Permit Approved Date:
Permit Moratorium Expiration Date:
Enlargement Use Priority Date:
Enlargement Statute Priority Date:
Water Supply Bank Enrollment Date Accepted:
Water Supply Bank Enrollment Date Removed:
Application Received Date:
Protest Deadline Date:
Number of Protests: 0

Other Information:

State or Federal:
Owner Name Connector:
Water District Number:
Generic Max Rate per Acre:
Generic Max Volume per Acre:
Combined Acres Limit:
Combined Volume Limit:
Combined Rate Limit: 11.6
Civil Case Number:
Old Case Number:
Decree Plaintiff:
Decree Defendant:
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Cary Act Number:
Mitigation Plan: False

Close

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-4084

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950

Priority Date: 07/01/1938

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
SALMON RIVER	SNAKE RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	01/01	12/31	4.35 CFS	
Total Diversion			4.35 CFS	

Location of Point(s) of Diversion:

SALMON RIVER|NENWSE Lt 9|Sec. 06|Township 21N|Range 22E|LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1.|C18|This partial decree is subject to such general provisions necessary for the definition of the rights or for
<http://www.idwr.idaho.gov/apps/ExtSearch/RightReportAJ.asp?BasinNumber=75&SequenceNumber=4084&SplitSuffix=%20%20&TypeWaterRight=True>

2. 124 the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.

Dates:

Licensed Date:

Decreed Date: 11/17/2008

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-7108

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950

Priority Date: 05/01/1978

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
SALMON RIVER	SNAKE RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	1/01	12/31	1.55 CFS	
Total Diversion			1.55 CFS	

Location of Point(s) of Diversion:

SALMON RIVER|NENWSE Lt 9|Sec. 06|Township 21N|Range 22E|LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1.|C18|This partial decree is subject to such general provisions necessary for the definition of the rights or for
<http://www.idwr.idaho.gov/apps/ExtSearch/RightReportAJ.asp?BasinNumber=75&SequenceNumber=7108&SplitSuffix=%20%20&TypeWaterRight=True>

- the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.

Dates:

Licensed Date:

Decreed Date: 11/17/2008

Permit Proof Due Date: 6/1/1983

Permit Proof Made Date: 1/1/1900

Permit Approved Date: 6/19/1978

Permit Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-7156

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950

Priority Date: 10/05/1979

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
SALMON RIVER	SNAKE RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	1/01	12/31	2.25 CFS	
Total Diversion			2.25 CFS	

Location of Point(s) of Diversion:

SALMON RIVER|NENWSE|Sec. 06|Township 21N|Range 22E|LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1.|C18|This partial decree is subject to such general provisions necessary for the definition of the rights or for
<http://www.idwr.idaho.gov/apps/ExtSearch/RightReportAJ.asp?BasinNumber=75&SequenceNumber=7156&SplitSuffix=%20%20&TypeWaterRight=True>

- the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.

Dates:

Licensed Date:

Decreed Date: 11/17/2008

Permit Proof Due Date: 11/1/1984

Permit Proof Made Date: 1/1/1900

Permit Approved Date: 11/20/1979

Permit Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-7563

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214

Priority Date: 12/03/1990

Basis: License

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	11/01	03/31	5 CFS	
MUNICIPAL	04/01	10/31	1.01 CFS	
Total Diversion			5 CFS	

Location of Point(s) of Diversion:

JESSE CREEK | SWNE NE Lt 1 | Sec. 02 | Township 21N | Range 21E | LEMHI County

Place(s) of use: No POUs found for this right

Conditions of Approval:

1. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
2. X35 Rights 75-0007, 75-0016, 75-0017A, 75-0017B, 75-0018, 75-0019B, 75-0019C, 75-0026A, 75-0114 and

- 75-07563 when combined shall not exceed a total diversion rate of 11.6 cfs.
3. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
4. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion.
5. 004 This right does not grant any right-of-way or easement across the land of another.

Dates:

Licensed Date: 09/22/2005

Decreed Date:

Permit Proof Due Date: 4/1/1992

Permit Proof Made Date: 3/31/1992

Permit Approved Date: 4/10/1991

Permit Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date: 12/03/1990

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal:

Owner Name Connector:

Water District Number: 75A

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-10075

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950

Priority Date: 06/01/1867
Basis: Decreed
Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	04/01	10/31	2.3 CFS	403 AFA
Total Diversion			2.3 CFS	

Location of Point(s) of Diversion:

JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County

CHIPPS CREEK Rediversion
CHIPPS CREEK Injection

NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: No POU's found for this right

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
The point of diversion in T21N, R21E, S11, NWNW is from Chipps Creek. The point of injection in T21N, R21E, S10, NENE is into Pollard Canyon Creek. The point of diversion and the point of
2. G01 rediversion in T21N, R21E, S10, NENE are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
3. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
For purposes of administration of sources for this right, the water shall first be diverted exclusively from the natural flow of Jesse Creek. When Jesse Creek is no longer sufficient for use under the rights in priority and calling for water, the waters of Pollard Canyon Creek may be diverted as necessary to provide the balance of water required pursuant to this right in its priority. Only when the water supply from Jesse and Pollard Canyon Creeks combined is not sufficient for use under the rights in priority and calling for water may Chipps Creek be diverted to provide the balance of water required pursuant to this right in its priority.
- 4.
5. E51 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, 75-2167, 75-7563 and 75-10075 are limited to a total combined diversion rate of 11.793 cfs.
6. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
7. C03 Right includes accomplished change in point of diversion, place of use and nature of use pursuant to Section 42-1425, Idaho Code.
8. P29 This right is a combination of old Right Nos. 75-16 and 75-18.
9. Water is diverted from Jesse Creek and its tributaries.
The holder of this right will not call for water from Chipps Creek or Pollard Canyon Creek prior to August 1 of any year if diversions under Right Nos. 75-2 or 75-5 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.
10. The holder of this right will not call for water from Chipps Creek prior to August 30 of any year if diversions under Right No. 75-22 would be affected. This condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right. This condition is not applicable anytime the total flow available for diversion in Water District 75A is 3.8 cfs or less, recognizing that no more than 2.54 cfs can be diverted from Chipps Creek or Pollard Canyon Creek under water rights 75-17B and 75-10075.
11. The holder of this water right will not make a call on Right Nos. 75-19G or 75-21 diverted from Chipps Creek for domestic use of 12 af per year as to Right No. 75-19G (including all progeny, when owned, controlled and delivered by Arrowhead Water District) and 42.17 af per year as to Right No. 75-21 (including all progeny, when owned, controlled and delivered by Arrowhead Water District). This

- condition applies to all current and future splits of all rights referenced here. This condition does not limit diversions from Jesse Creek or Pollard Canyon Creek under this right.
12. E53 Right Nos. 75-4, 75-7, 75-17A, 75-17B, 75-19B, 75-19C, 75-26A, 75-114, and 75-10075 are limited to a total combined annual diversion volume of 1740.5 AF, with no more than 970.5 AF diverted from Chipps and Pollard Canyon Creeks.
13. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
14. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
15. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector:

Water District Number: 75A

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Combined Acres Limit:

Combined Volume Limit:

Combined Rate Limit: 11.6

Civil Case Number:

Old Case Number:

Decree Plaintiff:

Decree Defendant:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

IDAHO DEPARTMENT OF WATER RESOURCES
Water Application Report

5/31/2018

WATER RIGHT NO. 75-14252

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214

Priority Date: 12/01/2005
Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	11/01	04/01	4 CFS	
Total Diversion			4 CFS	

Location of Point(s) of Diversion:

JESSE CREEK|SWNW|Sec. 01|Township 21N|Range 21E|LEMHI County

Place(s) of use: No POUs found for this right

Dates:

Date Application Received: 12/01/2005

Date Application Denied:

Last Date of Beneficial Use:

Extension End Date:

Protest Deadline Date: 1/3/2006

Number of Protests: 1

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Other Information:

State or Federal:

Owner Name Connector:

Water District Number: 75A

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Application Type: New Appropriation

Applicant Remarks:

Other Water Rights: 75-7, 75-16, 75-17A, 75-17b, 75-18, 75-19B, 75-19C, 75-26C, 75-114, 75-7563, 75-7108, 75-7156

Time to Complete Works: 1

Transfer Affected Description:

Transfer Affected Contracts:

Old Transfer Number:

Transfer Reason:

Transfer Return Flows:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-14700

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950
Original Owner	DALMAR MANFULL

Priority Date: 08/18/1961

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	11/01	03/31	0.24 CFS	
Total Diversion			0.24 CFS	

Location of Point(s) of Diversion:

JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
JESSE CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
JESSE CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK	NENE Lt 1	Sec. 10	Township 21N	Range 21E	LEMHI County

POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 10	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Rediversion	NENE Lt 1	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK	NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: [Large POU Info](#)

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. The point of diversion in T21N, R21E, S11, NWNW, is from Chipps Creek. The point of injection in T21N, R21E, S10, Lot 1 (NENE), is into Pollard Canyon Creek. The point of diversion and the point of rediversion in T21N, R21E, S10, Lot 1 (NENE), are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
3. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
4. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
5. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
6. This water right is subject to a private agreement among the City of Salmon, Myrtle, Dale and Laura Edwards and Arrowhead Water District, and recorded in the Lemhi County Recorder's office on December 1, 2011 as instrument no. 288296.
7. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion.

Dates:

Licensed Date:

Decreed Date: 04/09/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector: OR

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Civil Case Number:

Old Case Number:

Decree Plaintiff:
Decree Defendant:
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Cary Act Number:
Mitigation Plan: False

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report

5/31/2018

WATER RIGHT NO. 75-14701

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CITY OF SALMON 200 MAIN ST SALMON, ID 83467 2087563214
Attorney	BEEMAN & ASSOC PC ATTN JOSEPHINE BEEMAN 1019 N 17TH ST BOISE, ID 83702-3304 2083310950

Priority Date: 04/12/1940

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
JESSE CREEK	SALMON RIVER
CHIPPS CREEK	POLLARD CANYON CREEK
POLLARD CANYON CREEK	JESSE CREEK

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
MUNICIPAL	11/01	03/31	2.3 CFS	
Total Diversion			2.3 CFS	

Location of Point(s) of Diversion:

JESSE CREEK	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
JESSE CREEK Rediversion	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK Injection	NENE Lt 1	Sec. 02	Township 21N	Range 21E	LEMHI County
POLLARD CANYON CREEK	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK Injection	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County

POLLARD CANYON CREEK Rediversion	NENE	Sec. 10	Township 21N	Range 21E	LEMHI County
CHIPPS CREEK	NWNW	Sec. 11	Township 21N	Range 21E	LEMHI County

Place(s) of use: No POUs found for this right

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. R05 Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 75A.
3. 124 Place of use is within the service area of the City of Salmon municipal water supply system as provided for under Idaho Law.
4. G01 The point of diversion in T21N, R21E, S11, NWNW is from Chipps Creek. The point of injection in T21N, R21E, S10, NENE is into Pollard Canyon Creek. The point of diversion and the point of rediversion in T21N, R21E, S10, NENE are from Pollard Canyon Creek. The point of injection in T21N, R21E, S02, Lot 1 (NENE) is into Jesse Creek. The point of diversion and the point of rediversion in T21N, R21E, S02, Lot 1 (NENE) are from Jesse Creek.
5. P29 This right is a combination of old Right Nos. 75-16 and 75-18.
6. The total flow available for diversion in Water District 75A is the sum of all water being diverted above the Farmer's Ditch, water being diverted into the Farmer's Ditch, and the quantity of water spilling and seeping past the Farmer's Ditch diversion. The Farmer's Ditch diversion is located in T21N, R21E, S1, SWNW.
7. This water right is subject to a private agreement among the City of Salmon; Myrtle, Dale and Laura Edwards; and Arrowhead Water District, and recorded in the Lemhi County Recorder's Office on December 1, 2011, as instrument no. 288296.
8. R43 The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).

Dates:

Licensed Date:

Decreed Date: 02/29/2012

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Water Supply Bank Enrollment Date Accepted:

Water Supply Bank Enrollment Date Removed:

Application Received Date:

Protest Deadline Date:

Number of Protests: 0

Other Information:

State or Federal: S

Owner Name Connector:

Water District Number: 75A

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Civil Case Number:
Old Case Number:
Decree Plaintiff:
Decree Defendant:
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Cary Act Number:
Mitigation Plan: False

Close



APPENDIX C – Water Quality

DEQ Public Drinking Water System Monitoring Schedule Report

Print Date: July 01, 2019

ID7300042 - SALMON CITY OF

Community water system serving 3122 people and 1620 connections.

Regulated by: IDAHO FALLS REGIONAL OFFICE

The following schedules include monitoring periods between 1-1-2019 and 12-31-2027

Schedules for Distribution System(s)

Code	Group/Analyte Name	Monitoring Frequency	Season Begin Date	Season End Date	Satisfied
3100	COLIFORM (TCR)	3 per MN	1/1	12/31	Monthly
ASBT	IOC - ASBESTOS	1 per 3Y due between 1/1/2020 and 12/31/2022	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2019 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	YES
DBP2	DBP2-STAGE 2	1 per QT Collected in 2019 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	YES
DBP2	DBP2-STAGE 2	1 per QT Collected in 2019 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	NO
DBP2	DBP2-STAGE 2	1 per QT Collected in 2019 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2020 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2020 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2020 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2020 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2021 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2021 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2021 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2021 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2022 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2022 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2022 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2022 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE

DBP2	DBP2-STAGE 2	1 per QT Collected in 2023 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2023 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2023 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2023 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2024 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2024 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2024 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2024 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2025 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2025 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2025 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2025 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2026 taken 1/1 through 3/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2026 taken 4/1 through 6/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2026 taken 7/1 through 9/30 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE
DBP2	DBP2-STAGE 2	1 per QT Collected in 2026 taken 10/1 through 12/31 2700 MAIN STREET (DBP2A) 1 set TTHM/HAA5 - 2700 MAIN STREET (DBP2A)	n/a	n/a	*FUTURE

Schedules for Distribution Systems(s) Lead and Copper

Code	Group/Analyte Name	Monitoring Frequency	Season Begin Date	Season End Date	Satisfied
PBCU	LCR - LEAD COPPER	10 per 3Y collected in 2019 taken 6/1 through 9/30	6/1	9/30	NO
PBCU	LCR - LEAD COPPER	10 per 3Y collected in 2022 taken 6/1 through 9/30	6/1	9/30	*FUTURE
PBCU	LCR - LEAD COPPER	10 per 3Y collected in 2025 taken 6/1 through 9/30	6/1	9/30	*FUTURE

Note: Consumer notice of lead tap results, regardless of lead level, is required within 30 days after receiving results. For templates and more information, please visit: <http://www.deq.idaho.gov/water-quality/drinking-water/pws-monitoring-reporting/public-notifications>

Schedules for E0007328M

Please Label these samples as: "MANIFOLD/TREATMENT PLANT"

Code	Group/Analyte Name	Monitoring Frequency	Season Begin Date	Season End Date	Satisfied
ZFLU	IOC - FLUORIDE	1 per 9Y due between 01/01/2011 and 12/31/2019	n/a	n/a	YES
ZIOC	IOCS - PHASE 2 AND 5	1 per 9Y due between 01/01/2011 and 12/31/2019	n/a	n/a	YES
ZNO2	NITRITE	1 per 9Y due between 01/01/2011 and 12/31/2019	n/a	n/a	YES
VOCS	VOCS - GROUP	1 per 3Y due between 01/01/2017 and 12/31/2019	n/a	n/a	YES
ZNO3	NITRATE	1 per YR due between 01/01/2019 and 12/31/2019	n/a	n/a	NO
SODI	IOC - SODIUM	1 per YR due between 01/01/2019 and 12/31/2019	n/a	n/a	NO

ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2019 and 12/31/2019	n/a	n/a	NO
ZNO3	NITRATE	1 per YR	due between 01/01/2020 and 12/31/2020	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2020 and 12/31/2020	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2020 and 12/31/2020	n/a	n/a	*FUTURE
ZNO3	NITRATE	1 per YR	due between 01/01/2021 and 12/31/2021	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2021 and 12/31/2021	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2021 and 12/31/2021	n/a	n/a	*FUTURE
VOCS	VOCS - GROUP	1 per 3Y	due between 01/01/2020 and 12/31/2022	n/a	n/a	*FUTURE
ZNO3	NITRATE	1 per YR	due between 01/01/2022 and 12/31/2022	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2022 and 12/31/2022	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2022 and 12/31/2022	n/a	n/a	*FUTURE
ZNO3	NITRATE	1 per YR	due between 01/01/2023 and 12/31/2023	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2023 and 12/31/2023	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2023 and 12/31/2023	n/a	n/a	*FUTURE
ZNO3	NITRATE	1 per YR	due between 01/01/2024 and 12/31/2024	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2024 and 12/31/2024	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2024 and 12/31/2024	n/a	n/a	*FUTURE
R226	RADS - RADIUM 226	1 per 9Y	due between 01/01/2017 and 12/31/2025	n/a	n/a	NO
R228	RADS - RADIUM 228	1 per 9Y	due between 01/01/2017 and 12/31/2025	n/a	n/a	NO
URAN	RADS - URANIUM	1 per 9Y	due between 01/01/2017 and 12/31/2025	n/a	n/a	NO
ALFA	RADS - GROSS ALPHA	1 per 9Y	due between 01/01/2017 and 12/31/2025	n/a	n/a	NO
VOCS	VOCS - GROUP	1 per 3Y	due between 01/01/2023 and 12/31/2025	n/a	n/a	*FUTURE
ZNO3	NITRATE	1 per YR	due between 01/01/2025 and 12/31/2025	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2025 and 12/31/2025	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2025 and 12/31/2025	n/a	n/a	*FUTURE
ZNO3	NITRATE	1 per YR	due between 01/01/2026 and 12/31/2026	n/a	n/a	*FUTURE
ZARS	ARSENIC (1005)	1 per YR	due between 01/01/2026 and 12/31/2026	n/a	n/a	*FUTURE
SODI	IOC - SODIUM	1 per YR	due between 01/01/2026 and 12/31/2026	n/a	n/a	*FUTURE

Schedules for E0007328T

Please Label these samples as: "RAW WATER INTAKE TP"

Code	Group/Analyte Name	Monitoring Frequency	Season Begin Date	Season End Date	Satisfied	
TOCA	DBP - TOC AND ALK	1 per MN	due between 01/01/2019 and 01/31/2019	n/a	n/a	YES
TOCA	DBP - TOC AND ALK	1 per MN	due between 02/01/2019 and 02/28/2019	n/a	n/a	YES
TOCA	DBP - TOC AND ALK	1 per MN	due between 03/01/2019 and 03/31/2019	n/a	n/a	YES
TOCA	DBP - TOC AND ALK	1 per MN	due between 04/01/2019 and 04/30/2019	n/a	n/a	NO
TOCA	DBP - TOC AND ALK	1 per MN	due between 04/01/2019 and 04/30/2019	n/a	n/a	YES
TOCA	DBP - TOC AND ALK	1 per MN	due between 05/01/2019 and 05/31/2019	n/a	n/a	NO
TOCA	DBP - TOC AND ALK	1 per MN	due between 06/01/2019 and 06/30/2019	n/a	n/a	NO
TOCA	DBP - TOC AND ALK	1 per MN	due between 07/01/2019 and 07/31/2019	n/a	n/a	NO
TOCA	DBP - TOC AND ALK	1 per MN	due between 08/01/2019 and 08/31/2019	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 09/01/2019 and 09/30/2019	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 10/01/2019 and 10/31/2019	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 11/01/2019 and 11/30/2019	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 12/01/2019 and 12/31/2019	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 01/01/2020 and 01/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 02/01/2020 and 02/29/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 03/01/2020 and 03/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 04/01/2020 and 04/30/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 05/01/2020 and 05/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 06/01/2020 and 06/30/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 07/01/2020 and 07/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 08/01/2020 and 08/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 09/01/2020 and 09/30/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 10/01/2020 and 10/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 11/01/2020 and 11/30/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 12/01/2020 and 12/31/2020	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 01/01/2021 and 01/31/2021	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 02/01/2021 and 02/28/2021	n/a	n/a	*FUTURE

TOCA	DBP - TOC AND ALK	1 per MN	due between 01/01/2026 and 01/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 02/01/2026 and 02/28/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 03/01/2026 and 03/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 04/01/2026 and 04/30/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 05/01/2026 and 05/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 06/01/2026 and 06/30/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 07/01/2026 and 07/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 08/01/2026 and 08/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 09/01/2026 and 09/30/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 10/01/2026 and 10/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 11/01/2026 and 11/30/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 12/01/2026 and 12/31/2026	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 01/01/2027 and 01/31/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 02/01/2027 and 02/28/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 03/01/2027 and 03/31/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 04/01/2027 and 04/30/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 05/01/2027 and 05/31/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 06/01/2027 and 06/30/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 07/01/2027 and 07/31/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 08/01/2027 and 08/31/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 09/01/2027 and 09/30/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 10/01/2027 and 10/31/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 11/01/2027 and 11/30/2027	n/a	n/a	*FUTURE
TOCA	DBP - TOC AND ALK	1 per MN	due between 12/01/2027 and 12/31/2027	n/a	n/a	*FUTURE

"*FUTURE" in the "Satisfied" column indicates the sampling requirement begins sometime in the future. Sampling before the monitoring period begin date will not satisfy the requirement for the monitoring period.

**See CO" in the "Satisfied" column indicates the operator needs to contact his or her compliance officer (CO) to verify that samples have been taken and the schedule has been satisfied.

IMPORTANT NOTICE: This monitoring schedule is provided to you as a courtesy and is current as of July 01, 2019 Surface water systems and systems that are disinfecting have additional sampling that is not reflected in this monitoring schedule report. This monitoring schedule may be changed or modified as needed. This monitoring schedule does not show past unfulfilled schedules for which violations may exist. Please revisit the monitoring schedule tool and review the system's monitoring schedule prior to sampling to ensure compliance with the most current monitoring requirements. Contact your public water system regulating agency if you have any questions.

When more than one year is selected for the search criteria, schedules due in 2019 will be highlighted.

City of Salmon water quality report 2016

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

The City of Salmon's water comes from the mountains above town. Jesse creek, Pollard creek, Chip creek, and from the Salmon river when needed.

Source water assessment and its availability

A source water assessment is available upon request.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity:

Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

City council meetings are the first and third Wednesday of each month.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.

- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

non compliance TTHM , HAA5

On 01/01/2016 the samples results for TTHM, and HAA5 came back high these are disinfectant byproducts that build up over time. I ran some water and corrected this issue. This violation is reported 5 times for the year ,because of the average.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Salmon is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>. Our Lead and Copper testing samples all past this year.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in

this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Haloacetic Acids (HAA5) (ppb)	NA	60	.345	NA		2016	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	.354	NA		2016	No	By-product of drinking water disinfection

Unit Descriptions	
Term	Definition
ppb	ppb: parts per billion, or micrograms per liter ($\mu\text{g/L}$)
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	Definition
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variations and Exemptions	Variations and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

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City of Salmon water quality report 2017

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies. Last year, we conducted tests for over 80 contaminants. We only detected 3 of those contaminants, and found only (TTHM, HAA5, and Turbidity) at a level higher than the EPA allows. As we informed you at the time, our water temporarily exceeded drinking water standards. (For more information see the section labeled Violations at the end of the report.)

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

The City of Salmon water comes from the mountains above town, and the Salmon river when needed

Source water assessment and its availability

A source water assessment is available upon request .

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity:

microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

City council meetings are the first and third Wednesday of each month.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.

- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Record keeping violations

On the end of some months there is no data printed for DEQ reports.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Salmon is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Water Quality Data Table

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protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Haloacetic Acids (HAA5) (ppb)	NA	60	.159	NA	NA	2017	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	.158	NA	NA	2017	No	By-product of drinking water disinfection
Microbiological Contaminants								
Turbidity (NTU)	NA	1	1.03	NA	NA	2017	Yes	miss calebrated turbido meter

Violations and Exceedances

Turbidity

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. this violation occurred 12-29,30,31- 2017 I recalibrated the turbido meter

Unit Descriptions

Term	Definition
ppb	ppb: parts per billion, or micrograms per liter ($\mu\text{g/L}$)
NTU	NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions

Term	Definition
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Important Drinking Water Definitions	
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MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

TT Violation	Explanation	Length	Health Effects Language	Explanation and Comment
Surface water treatment rule filtration and disinfection violations	High turbidity was a miss calibrated turbidity meter.	3 days	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.	Calibrated the meter.

For more information please contact:

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