Appendix F

Custom USDA Soils Resource Reports

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United States Department of Agriculture

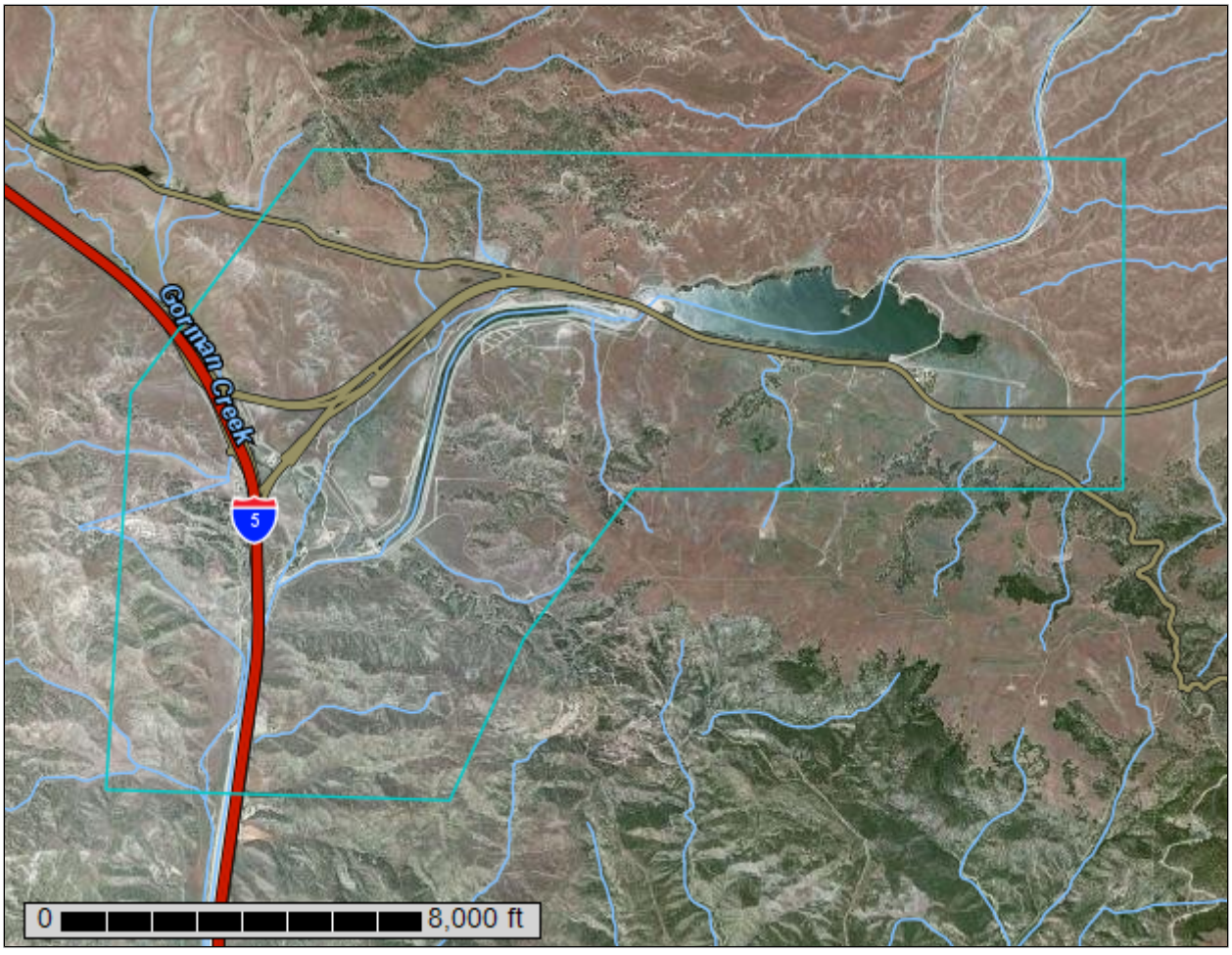
NRCS

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 Angeles National Forest Area, California, and Antelope Valley Area, California

Quail Lake and Lower Quail Canal



November 9, 2015

Preface

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

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

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

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

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

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

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

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

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

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

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

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

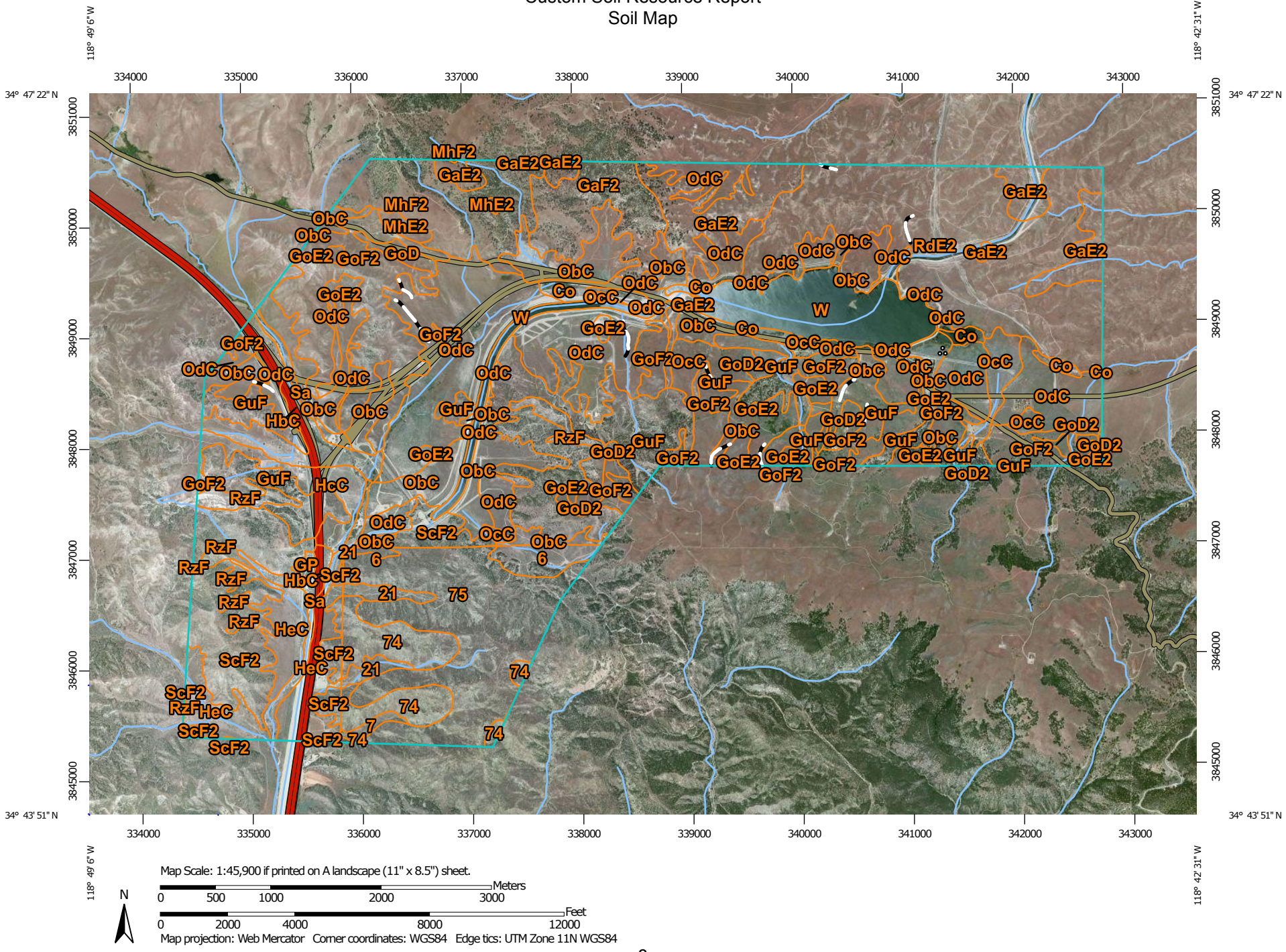
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree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

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

Soil Map

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

Custom Soil Resource Report
Soil Map



MAP 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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Map Unit Legend

Angeles National Forest Area, California (CA776)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
6	Typic Haploxeralfs, 3 to 50 percent slopes	58.9	0.8%
7	Hanford family, 3 to 25 percent slopes	13.5	0.2%
21	Riverwash	43.5	0.6%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	175.9	2.4%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	513.1	7.0%
Subtotals for Soil Survey Area		**804.9**	**11.0%**
Totals for Area of Interest		**7,293.8**	**100.0%**

Antelope Valley Area, California (CA675)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Co	Chino loam	63.5	0.9%
GaE2	Gaviota rocky sandy loam, 15 to 30 percent slopes, eroded	302.2	4.1%
GaF2	Gaviota rocky sandy loam, 30 to 50 percent slopes, eroded	202.2	2.8%
GoD	Gorman sandy loam, 9 to 15 percent slopes	22.3	0.3%
GoD2	Gorman sandy loam, 9 to 15 percent slopes, eroded	94.3	1.3%
GoE2	Gorman sandy loam, 15 to 30 percent slopes, eroded	146.4	2.0%
GoF2	Gorman sandy loam, 30 to 50 percent slopes, eroded	743.1	10.2%
GP	Gravel pits	7.0	0.1%
GuF	Gullied land	721.3	9.9%
HbC	Hanford coarse sandy loam, 2 to 9 percent slopes	130.2	1.8%
HcC	Hanford sandy loam, 2 to 9 percent slopes	88.3	1.2%
HeC	Hanford sandy loam, calcareous variant, 2 to 9 percent slopes	231.0	3.2%
MhE2	Millsholm rocky loam, 15 to 30 percent slopes, eroded	22.7	0.3%
MhF2	Millsholm rocky loam, 30 to 50 percent slopes, eroded	263.1	3.6%
ObC	Oak Glen sandy loam, 2 to 9 percent slopes	579.8	7.9%

Antelope Valley Area, California (CA675)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
OcC	Oak Glen gravelly sandy loam, 2 to 9 percent slopes	107.1	1.5%
OdC	Oak Glen loam, 2 to 9 percent slopes	1,037.7	14.2%
RdE2	Ramona sandy loam, 9 to 30 percent slopes, eroded	841.9	11.5%
RzF	Rough broken land	100.6	1.4%
Sa	Sandy alluvial land	67.3	0.9%
ScF2	Saugus loam, 30 to 50 percent slopes, eroded	401.4	5.5%
W	Water	315.4	4.3%
Subtotals for Soil Survey Area		**6,489.0**	**89.0%**
Totals for Area of Interest		**7,293.8**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

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

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

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

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

Angeles National Forest Area, California

6—Typic Haploxeralfs, 3 to 50 percent slopes

Map Unit Setting

National map unit symbol: hm7m
Elevation: 2,450 to 3,400 feet
Mean annual precipitation: 11 to 16 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Typic haploxeralfs and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Typic Haploxeralfs

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 10 inches: gravelly loam
H2 - 10 to 36 inches: gravelly clay loam
H3 - 36 to 59 inches: weathered bedrock

Properties and qualities

Slope: 3 to 50 percent
Depth to restrictive feature: 15 to 50 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

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

Minor Components

Mollic haploxerolls

Percent of map unit: 10 percent

7—Hanford family, 3 to 25 percent slopes

Map Unit Setting

National map unit symbol: hm80
Elevation: 2,700 to 4,400 feet
Mean annual precipitation: 11 to 15 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Hanford family and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford Family

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 13 inches: sandy loam
H2 - 13 to 36 inches: fine sandy loam, sandy loam
H2 - 13 to 36 inches: sandy loam
H3 - 36 to 60 inches:

Properties and qualities

Slope: 3 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.7 inches)

Interpretive groups

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

Minor Components

Typic haploxeralfs
Percent of map unit: 5 percent

Vista family
Percent of map unit: 5 percent

Trigo family
Percent of map unit: 5 percent

Hanford family
Percent of map unit: 5 percent

Riverwash
Percent of map unit: 5 percent
Landform: Channels

21—Riverwash

Map Unit Setting
National map unit symbol: hm6p
Elevation: 1,800 to 4,800 feet
Mean annual precipitation: 14 to 30 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Riverwash: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting
Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium

Typical profile
H1 - 0 to 60 inches: extremely stony coarse sand

Properties and qualities
Slope: 2 to 10 percent
Percent of area covered with surface fragments: 25.0 percent
Natural drainage class: Excessively drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Frequency of flooding: Frequent
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w

Minor Components

Hanford family
Percent of map unit: 7 percent

Vista family
Percent of map unit: 6 percent

Capistrano family
Percent of map unit: 6 percent

Tujunga family
Percent of map unit: 6 percent

74—Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes

Map Unit Setting
National map unit symbol: hm87
Elevation: 2,200 to 3,730 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Rock outcrop: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Scarps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 0 inches to paralithic bedrock
Natural drainage class: Excessively drained
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Minor Components

Rubble land

Percent of map unit: 4 percent

Unnamed, colluvial soils

Percent of map unit: 3 percent

Trigo family, fine textured

Percent of map unit: 3 percent

75—Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes

Map Unit Setting

National map unit symbol: hm88
Elevation: 2,400 to 4,000 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Haploxeralfs and similar soils: 15 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Haploxeralfs

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 6 inches: gravelly loam
H2 - 6 to 15 inches: gravelly clay loam, gravelly sandy clay loam
H2 - 6 to 15 inches: unweathered bedrock
H3 - 15 to 19 inches:

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 7 to 19 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Minor Components

Osito family

Percent of map unit: 3 percent

Unnamed, moderately deep soils

Percent of map unit: 3 percent

Modesto family

Percent of map unit: 3 percent

Rock outcrop

Percent of map unit: 2 percent

Vertic xerochrepts
Percent of map unit: 2 percent

Caperton family
Percent of map unit: 2 percent

Antelope Valley Area, California

Co—Chino loam

Map Unit Setting

National map unit symbol: hcdd
Elevation: 3,100 feet
Mean annual precipitation: 8 to 20 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 230 to 340 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Chino and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chino

Setting

Landform: Valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 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: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 16 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: WET MEADOW 9-20" (R019XD067CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Hanford
Percent of map unit: 2 percent

Mocho
Percent of map unit: 1 percent

Sorrento
Percent of map unit: 1 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

GaE2—Gaviota rocky sandy loam, 15 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcdk
Elevation: 100 to 4,000 feet
Mean annual precipitation: 8 to 20 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Gaviota and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gaviota

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 14 inches: sandy loam
H2 - 14 to 17 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: SHALLOW LOAMY 9-20" (R019XD066CA)

Minor Components

Millsholm
Percent of map unit: 4 percent

Rock outcrop
Percent of map unit: 3 percent

Unnamed
Percent of map unit: 3 percent
Landform: Drainageways

GaF2—Gaviota rocky sandy loam, 30 to 50 percent slopes, eroded

Map Unit Setting
National map unit symbol: hcdl
Elevation: 100 to 4,000 feet
Mean annual precipitation: 8 to 20 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition
Gaviota and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gaviota

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 14 inches: sandy loam
H2 - 14 to 17 inches: unweathered bedrock

Properties and qualities
Slope: 30 to 50 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: SHALLOW LOAMY 9-20" (R019XD066CA)

Minor Components

Millsholm
Percent of map unit: 5 percent

Rock outcrop
Percent of map unit: 2 percent

Saugus
Percent of map unit: 2 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

GoD—Gorman sandy loam, 9 to 15 percent slopes

Map Unit Setting
National map unit symbol: hcdq
Elevation: 4,000 to 4,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Gorman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorman

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave

Across-slope shape: Concave
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 43 inches: sandy loam
H2 - 43 to 84 inches: sandy clay loam

Properties and qualities
Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Unnamed
Percent of map unit: 10 percent

Oak glen
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

GoD2—Gorman sandy loam, 9 to 15 percent slopes, eroded

Map Unit Setting
National map unit symbol: hcdr
Elevation: 4,000 to 4,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Gorman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorman

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 30 inches: sandy loam
H2 - 30 to 60 inches: sandy clay loam

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Oak glen

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

GoE2—Gorman sandy loam, 15 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcds
Elevation: 4,000 to 4,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 55 degrees F

Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Gorman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorman

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 43 inches: sandy loam
H2 - 43 to 60 inches: sandy clay loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Oak glen

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

GoF2—Gorman sandy loam, 30 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcdt
Elevation: 4,000 to 4,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Gorman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorman

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 25 inches: sandy loam
H2 - 25 to 60 inches: sandy clay loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Unnamed
Percent of map unit: 10 percent

Oak glen
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

GP—Gravel pits

Map Unit Composition
Gravel pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gravel Pits

Setting
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and gravelly alluvium

GuF—Gullied land

Map Unit Composition
Gullied land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gullied Land

Setting
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum

Typical profile
H1 - 0 to 60 inches: variable

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Minor Components

Gorman
Percent of map unit: 3 percent

Ramona
Percent of map unit: 3 percent

Seridan
Percent of map unit: 3 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

HbC—Hanford coarse sandy loam, 2 to 9 percent slopes

Map Unit Setting
National map unit symbol: hcf2
Elevation: 2,600 to 4,200 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 8 inches: coarse sandy loam
H2 - 8 to 39 inches: sandy loam, coarse sandy loam
H2 - 8 to 39 inches: gravelly loamy coarse sand, gravelly coarse sandy loam
H3 - 39 to 70 inches:
H3 - 39 to 70 inches:

Properties and qualities
Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Greenfield

Percent of map unit: 8 percent

Ramona

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 2 percent

HcC—Hanford sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcf5
Elevation: 2,600 to 4,200 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 70 inches: fine sandy loam, sandy loam
H2 - 8 to 70 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 14.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Greenfield

Percent of map unit: 10 percent

Unnamed

Percent of map unit: 5 percent

HeC—Hanford sandy loam, calcareous variant, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcf7
Elevation: 2,800 to 3,000 feet
Mean annual precipitation: 10 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 220 to 260 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford variant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford Variant

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: sandy loam
H2 - 16 to 36 inches: fine sandy loam, coarse sandy loam
H2 - 16 to 36 inches: sandy loam
H3 - 36 to 56 inches: sandy loam, coarse sandy loam
H4 - 56 to 80 inches:
H4 - 56 to 80 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Hanford

Percent of map unit: 5 percent

MhE2—Millsholm rocky loam, 15 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcfs
Elevation: 300 to 4,000 feet
Mean annual precipitation: 8 to 50 inches
Mean annual air temperature: 45 to 63 degrees F
Frost-free period: 110 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Millsholm and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millsholm

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: SHALLOW LOAMY 9-20" (R019XD066CA)

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Gaviota

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 3 percent
Landform: Drainageways

Castaic

Percent of map unit: 2 percent

MhF2—Millsholm rocky loam, 30 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcft
Elevation: 300 to 4,000 feet
Mean annual precipitation: 8 to 50 inches

Mean annual air temperature: 45 to 63 degrees F
Frost-free period: 110 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Millsholm and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millsholm

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: SHALLOW LOAMY 9-20" (R019XD066CA)

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 5 percent

Castaic

Percent of map unit: 3 percent

Gaviota

Percent of map unit: 1 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

ObC—Oak Glen sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcg1
Elevation: 3,400 to 5,200 feet
Mean annual precipitation: 15 to 25 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 175 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Oak glen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oak Glen

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 32 inches: sandy loam
H2 - 32 to 60 inches: fine sandy loam, sandy loam, coarse sandy loam
H2 - 32 to 60 inches:
H2 - 32 to 60 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Hanford
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 5 percent

OcC—Oak Glen gravelly sandy loam, 2 to 9 percent slopes

Map Unit Setting
National map unit symbol: hcg2
Elevation: 3,400 to 5,200 feet
Mean annual precipitation: 15 to 25 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 175 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Oak glen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oak Glen

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 32 inches: gravelly sandy loam
H2 - 32 to 60 inches: gravelly fine sandy loam, gravelly sandy loam, gravelly coarse sandy loam
H2 - 32 to 60 inches:
H2 - 32 to 60 inches:

Properties and qualities
Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Oak glen

Percent of map unit: 5 percent

OdC—Oak Glen loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcg4
Elevation: 3,400 to 5,200 feet
Mean annual precipitation: 15 to 25 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 175 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Oak glen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oak Glen

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 40 inches: loam
H2 - 40 to 60 inches: fine sandy loam, sandy loam, coarse sandy loam
H2 - 40 to 60 inches:
H2 - 40 to 60 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: LOAMY 9-20" (R020XE024CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Oak glen

Percent of map unit: 5 percent

RdE2—Ramona sandy loam, 9 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcgm
Elevation: 2,700 to 3,900 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ramona and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 23 inches: fine sandy loam
H3 - 23 to 90 inches: sandy clay loam

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Vernalis

Percent of map unit: 5 percent

Gullied land

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

RzF—Rough broken land

Map Unit Setting

National map unit symbol: hch4
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Farmland classification: Not prime farmland

Map Unit Composition

Rough broken land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rough Broken Land

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave
Across-slope shape: Concave

Typical profile
H1 - 0 to 60 inches: variable

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Minor Components

Gullied land
Percent of map unit: 5 percent

Badlands
Percent of map unit: 5 percent

Rock outcrop
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Flood plains

Sa—Sandy alluvial land

Map Unit Setting
National map unit symbol: hch5
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Farmland classification: Not prime farmland

Map Unit Composition
Sandy alluvial land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sandy Alluvial Land

Setting
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 10 inches: sand
H2 - 10 to 30 inches: stratified sand to loam
H3 - 30 to 60 inches: stratified gravelly sand to gravelly loam

Properties and qualities

Slope: 0 to 2 percent
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 10 inches
Frequency of flooding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: SANDY 9-20" (R020XE025CA)

Minor Components

Riverwash

Percent of map unit: 10 percent
Landform: Drainageways

Unnamed

Percent of map unit: 5 percent

ScF2—Saugus loam, 30 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: hch8
Elevation: 600 to 2,500 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 275 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Saugus and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saugus

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Weakly consoildated alluvium

Typical profile

H1 - 0 to 15 inches: loam
H2 - 15 to 42 inches: loam, sandy loam
H2 - 15 to 42 inches: weathered bedrock
H3 - 42 to 46 inches:

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Gaviota

Percent of map unit: 5 percent

Rough broken land

Percent of map unit: 5 percent

Balcom

Percent of map unit: 3 percent

Castaic

Percent of map unit: 2 percent

W—Water

Map Unit Composition

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

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities 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 property or quality.

Soil Erosion Factors

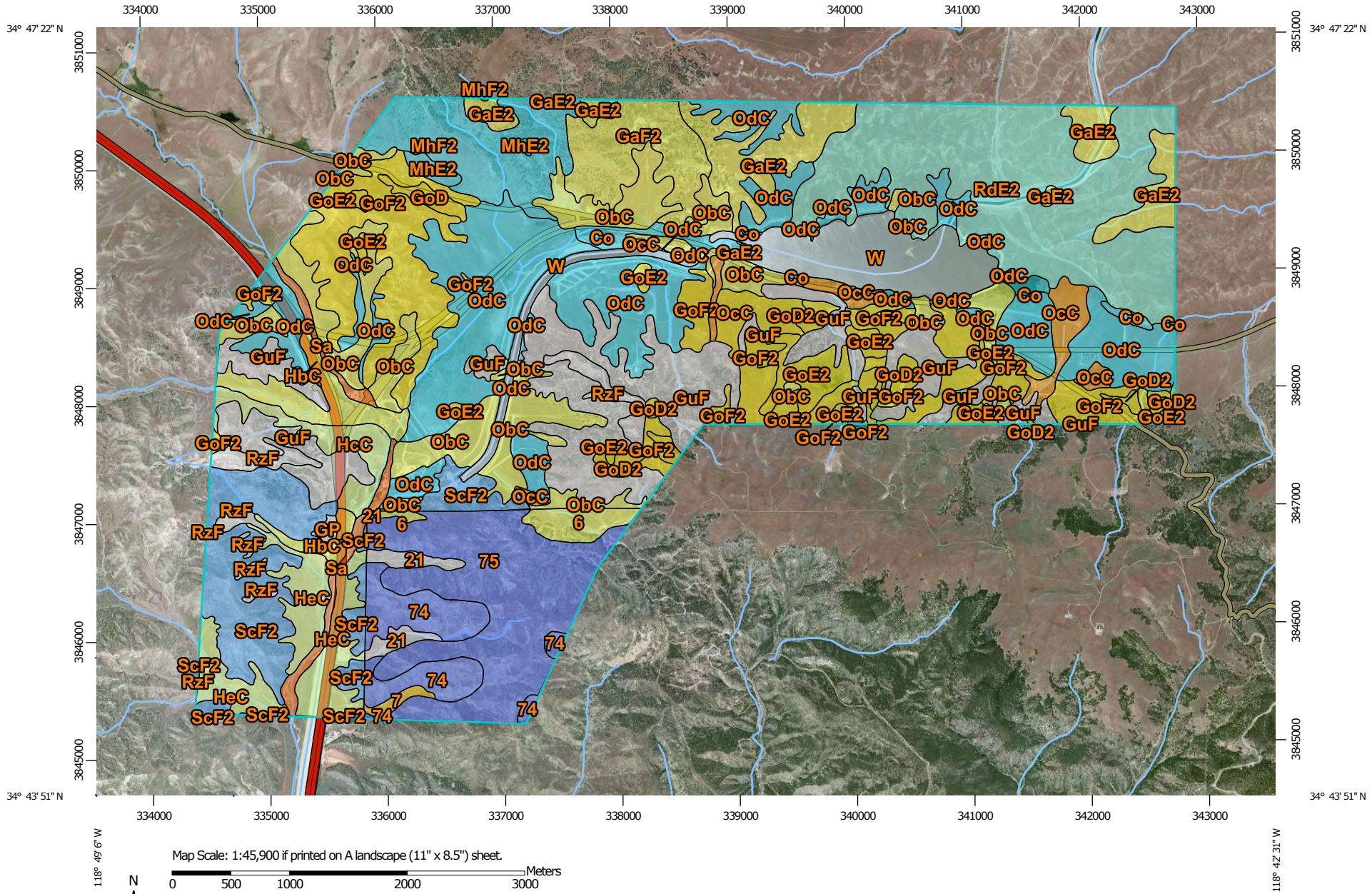
Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil

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

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

Custom Soil Resource Report
Map—K Factor, Whole Soil



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Table—K Factor, Whole Soil

K Factor, Whole Soil— Summary by Map Unit — Angeles National Forest Area, California (CA776)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
6	Typic Haploxeralfs, 3 to 50 percent slopes	.20	58.9	0.8%
7	Hanford family, 3 to 25 percent slopes	.15	13.5	0.2%
21	Riverwash		43.5	0.6%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	.49	175.9	2.4%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	.49	513.1	7.0%
Subtotals for Soil Survey Area			**804.9**	**11.0%**
Totals for Area of Interest			**7,293.8**	**100.0%**

K Factor, Whole Soil— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Co	Chino loam	.37	63.5	0.9%
GaE2	Gaviota rocky sandy loam, 15 to 30 percent slopes, eroded	.20	302.2	4.1%
GaF2	Gaviota rocky sandy loam, 30 to 50 percent slopes, eroded	.20	202.2	2.8%
GoD	Gorman sandy loam, 9 to 15 percent slopes	.17	22.3	0.3%
GoD2	Gorman sandy loam, 9 to 15 percent slopes, eroded	.17	94.3	1.3%
GoE2	Gorman sandy loam, 15 to 30 percent slopes, eroded	.17	146.4	2.0%
GoF2	Gorman sandy loam, 30 to 50 percent slopes, eroded	.17	743.1	10.2%
GP	Gravel pits		7.0	0.1%
GuF	Gullied land		721.3	9.9%
HbC	Hanford coarse sandy loam, 2 to 9 percent slopes	.20	130.2	1.8%
HcC	Hanford sandy loam, 2 to 9 percent slopes	.24	88.3	1.2%
HeC	Hanford sandy loam, calcareous variant, 2 to 9 percent slopes	.24	231.0	3.2%

K Factor, Whole Soil— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
MhE2	Millsholm rocky loam, 15 to 30 percent slopes, eroded	.37	22.7	0.3%
MhF2	Millsholm rocky loam, 30 to 50 percent slopes, eroded	.37	263.1	3.6%
ObC	Oak Glen sandy loam, 2 to 9 percent slopes	.20	579.8	7.9%
OcC	Oak Glen gravelly sandy loam, 2 to 9 percent slopes	.10	107.1	1.5%
OdC	Oak Glen loam, 2 to 9 percent slopes	.37	1,037.7	14.2%
RdE2	Ramona sandy loam, 9 to 30 percent slopes, eroded	.32	841.9	11.5%
RzF	Rough broken land		100.6	1.4%
Sa	Sandy alluvial land	.05	67.3	0.9%
ScF2	Saugus loam, 30 to 50 percent slopes, eroded	.43	401.4	5.5%
W	Water		315.4	4.3%
Subtotals for Soil Survey Area			**6,489.0**	**89.0%**
Totals for Area of Interest			**7,293.8**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

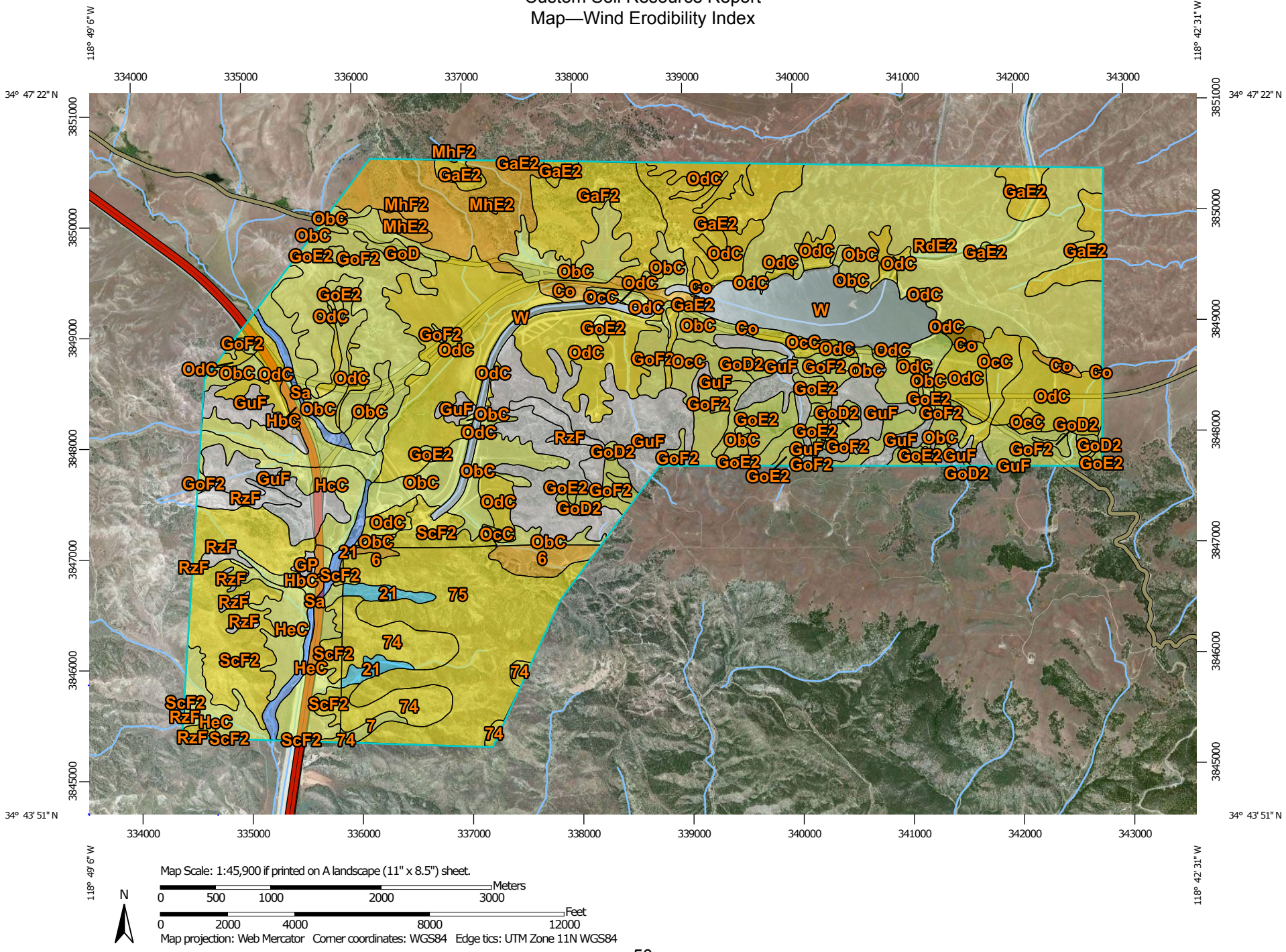
Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Wind Erodibility Index

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

Custom Soil Resource Report
Map—Wind Erodibility Index



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

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

Date(s) aerial images were photographed: Jun 3, 2010—Aug 31, 2010

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

Table—Wind Erodibility Index

Wind Erodibility Index— Summary by Map Unit — Angeles National Forest Area, California (CA776)				
Map unit symbol	**Map unit name**	**Rating (tons per acre per year)**	**Acres in AOI**	**Percent of AOI**
6	Typic Haploxeralfs, 3 to 50 percent slopes	48	58.9	0.8%
7	Hanford family, 3 to 25 percent slopes	86	13.5	0.2%
21	Riverwash	180	43.5	0.6%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	56	175.9	2.4%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	56	513.1	7.0%
Subtotals for Soil Survey Area			**804.9**	**11.0%**
Totals for Area of Interest			**7,293.8**	**100.0%**

Wind Erodibility Index— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating (tons per acre per year)**	**Acres in AOI**	**Percent of AOI**
Co	Chino loam	48	63.5	0.9%
GaE2	Gaviota rocky sandy loam, 15 to 30 percent slopes, eroded	56	302.2	4.1%
GaF2	Gaviota rocky sandy loam, 30 to 50 percent slopes, eroded	56	202.2	2.8%
GoD	Gorman sandy loam, 9 to 15 percent slopes	86	22.3	0.3%
GoD2	Gorman sandy loam, 9 to 15 percent slopes, eroded	86	94.3	1.3%
GoE2	Gorman sandy loam, 15 to 30 percent slopes, eroded	86	146.4	2.0%
GoF2	Gorman sandy loam, 30 to 50 percent slopes, eroded	86	743.1	10.2%
GP	Gravel pits		7.0	0.1%
GuF	Gullied land		721.3	9.9%
HbC	Hanford coarse sandy loam, 2 to 9 percent slopes	86	130.2	1.8%
HcC	Hanford sandy loam, 2 to 9 percent slopes	86	88.3	1.2%

Wind Erodibility Index— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating (tons per acre per year)**	**Acres in AOI**	**Percent of AOI**
HeC	Hanford sandy loam, calcareous variant, 2 to 9 percent slopes	86	231.0	3.2%
MhE2	Millsholm rocky loam, 15 to 30 percent slopes, eroded	48	22.7	0.3%
MhF2	Millsholm rocky loam, 30 to 50 percent slopes, eroded	48	263.1	3.6%
ObC	Oak Glen sandy loam, 2 to 9 percent slopes	86	579.8	7.9%
OcC	Oak Glen gravelly sandy loam, 2 to 9 percent slopes	56	107.1	1.5%
OdC	Oak Glen loam, 2 to 9 percent slopes	56	1,037.7	14.2%
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Sa	Sandy alluvial land	220	67.3	0.9%
ScF2	Saugus loam, 30 to 50 percent slopes, eroded	56	401.4	5.5%
W	Water		315.4	4.3%
Subtotals for Soil Survey Area			**6,489.0**	**89.0%**
Totals for Area of Interest			**7,293.8**	**100.0%**

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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United States Department of Agriculture

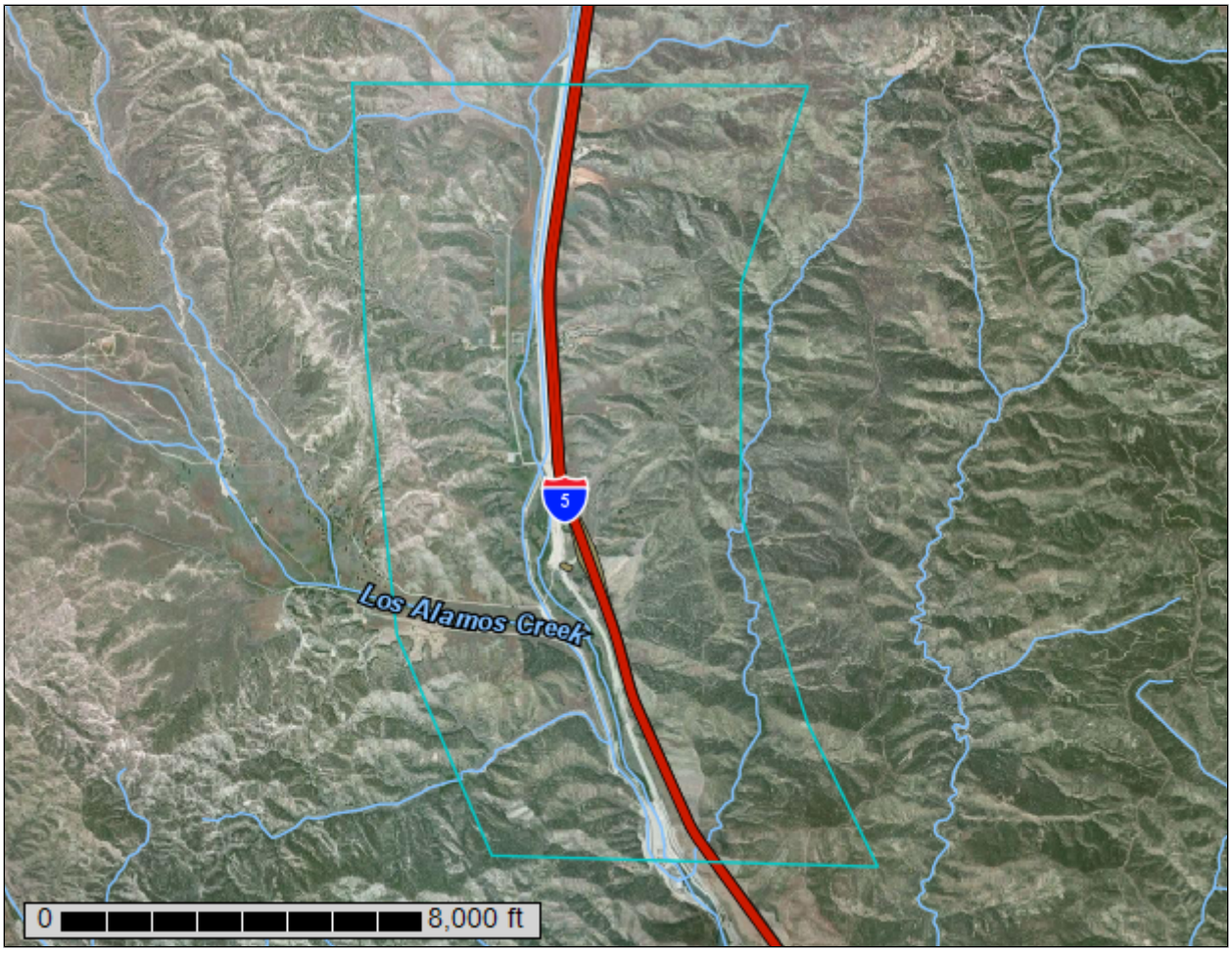
NRCS

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 Angeles National Forest Area, California, and Antelope Valley Area, California

Peace Valley



November 9, 2015

Preface

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

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

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

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

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

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

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

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

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

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

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

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

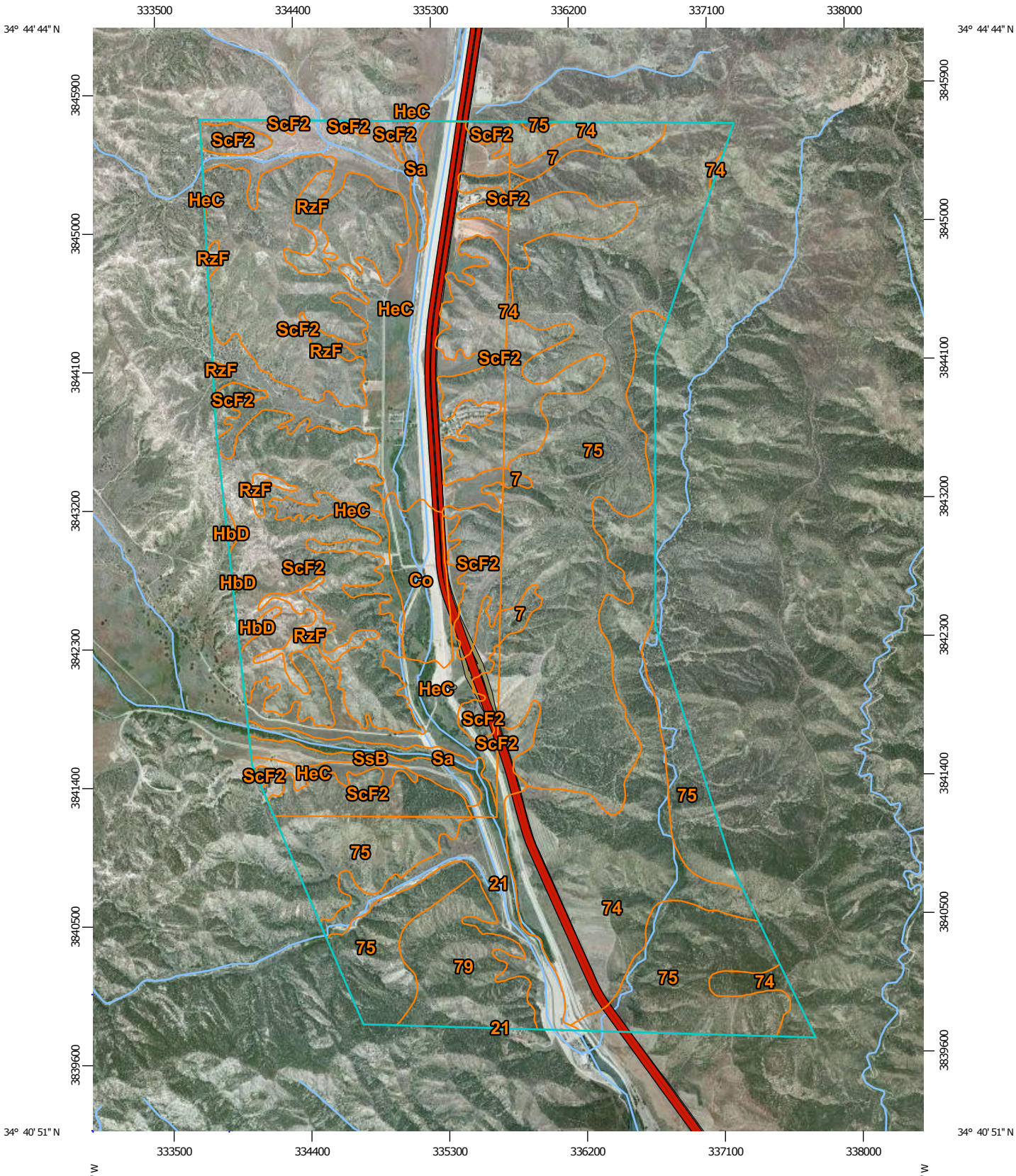
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree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

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

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:35,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 500 1000 2000 3000

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Map Unit Legend

Angeles National Forest Area, California (CA776)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
7	Hanford family, 3 to 25 percent slopes	28.7	0.7%
21	Riverwash	141.7	3.3%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	670.1	15.6%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	1,279.2	29.7%
79	Trigo-Lodo families-Haploxerolls, warm complex, 50 to 90 percent slopes	140.6	3.3%
Subtotals for Soil Survey Area		**2,260.3**	**52.6%**
Totals for Area of Interest		**4,300.3**	**100.0%**

Antelope Valley Area, California (CA675)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Co	Chino loam	86.0	2.0%
HbD	Hanford coarse sandy loam, 9 to 15 percent slopes	10.4	0.2%
HeC	Hanford sandy loam, calcareous variant, 2 to 9 percent slopes	709.5	16.5%
RzF	Rough broken land	81.0	1.9%
Sa	Sandy alluvial land	57.5	1.3%
ScF2	Saugus loam, 30 to 50 percent slopes, eroded	1,056.9	24.6%
SsB	Sorrento loam, 2 to 5 percent slopes	38.7	0.9%
Subtotals for Soil Survey Area		**2,040.0**	**47.4%**
Totals for Area of Interest		**4,300.3**	**100.0%**

Map Unit Descriptions

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

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape,

however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

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

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and

relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

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

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

Angeles National Forest Area, California

7—Hanford family, 3 to 25 percent slopes

Map Unit Setting

National map unit symbol: hm80
Elevation: 2,700 to 4,400 feet
Mean annual precipitation: 11 to 15 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Hanford family and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford Family

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 13 inches: sandy loam
H2 - 13 to 36 inches: fine sandy loam, sandy loam
H2 - 13 to 36 inches: sandy loam
H3 - 36 to 60 inches:

Properties and qualities

Slope: 3 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.7 inches)

Interpretive groups

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

Minor Components

Typic haploxeralfs

Percent of map unit: 5 percent

Vista family

Percent of map unit: 5 percent

Trigo family
Percent of map unit: 5 percent

Hanford family
Percent of map unit: 5 percent

Riverwash
Percent of map unit: 5 percent
Landform: Channels

21—Riverwash

Map Unit Setting

National map unit symbol: hm6p
Elevation: 1,800 to 4,800 feet
Mean annual precipitation: 14 to 30 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium

Typical profile

H1 - 0 to 60 inches: extremely stony coarse sand

Properties and qualities

Slope: 2 to 10 percent
Percent of area covered with surface fragments: 25.0 percent
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Frequency of flooding: Frequent
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w

Minor Components

Hanford family
Percent of map unit: 7 percent

Vista family
Percent of map unit: 6 percent

Capistrano family
Percent of map unit: 6 percent

Tujunga family
Percent of map unit: 6 percent

74—Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes

Map Unit Setting
National map unit symbol: hm87
Elevation: 2,200 to 3,730 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Rock outcrop: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities
Slope: 60 to 100 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock

Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Scarps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 0 inches to paralithic bedrock
Natural drainage class: Excessively drained
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Minor Components

Rubble land

Percent of map unit: 4 percent

Unnamed, colluvial soils

Percent of map unit: 3 percent

Trigo family, fine textured

Percent of map unit: 3 percent

75—Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes

Map Unit Setting

National map unit symbol: hm88
Elevation: 2,400 to 4,000 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Haploxeralfs and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave

Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities
Slope: 30 to 70 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities
Slope: 30 to 70 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Haploxeralfs

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 6 inches: gravelly loam
H2 - 6 to 15 inches: gravelly clay loam, gravelly sandy clay loam
H2 - 6 to 15 inches: unweathered bedrock
H3 - 15 to 19 inches:

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 7 to 19 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Minor Components

Osito family

Percent of map unit: 3 percent

Unnamed, moderately deep soils

Percent of map unit: 3 percent

Modesto family

Percent of map unit: 3 percent

Rock outcrop

Percent of map unit: 2 percent

Vertic xerochrepts

Percent of map unit: 2 percent

Caperton family

Percent of map unit: 2 percent

79—Trigo-Lodo families-Haploxerolls, warm complex, 50 to 90 percent slopes

Map Unit Setting

National map unit symbol: hm8c
Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 15 to 21 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 45 percent
Lodo family and similar soils: 25 percent
Haploxerolls, warm, and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 20 inches:

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Lodo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from schist

Typical profile

H1 - 0 to 17 inches: gravelly loam
H2 - 17 to 21 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 6 to 19 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Haploxerolls, Warm

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and/or colluvium derived from schist

Typical profile

H1 - 0 to 10 inches: gravelly loam
H2 - 10 to 60 inches: very gravelly loam, very gravelly sandy loam
H2 - 10 to 60 inches: weathered bedrock
H3 - 60 to 64 inches:

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 60 to 60 inches to paralithic bedrock
Natural drainage class: Well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Mollic haploxeralfs

Percent of map unit: 5 percent

Caperton family

Percent of map unit: 5 percent

Antelope Valley Area, California

Co—Chino loam

Map Unit Setting

National map unit symbol: hcdd
Elevation: 3,100 feet
Mean annual precipitation: 8 to 20 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 230 to 340 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Chino and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chino

Setting

Landform: Valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 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: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 16 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: WET MEADOW 9-20" (R019XD067CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Hanford
Percent of map unit: 2 percent

Mocho
Percent of map unit: 1 percent

Sorrento
Percent of map unit: 1 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

HbD—Hanford coarse sandy loam, 9 to 15 percent slopes

Map Unit Setting

National map unit symbol: hcf3
Elevation: 2,600 to 4,200 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: coarse sandy loam
H2 - 8 to 39 inches: sandy loam, coarse sandy loam
H2 - 8 to 39 inches: gravelly loamy coarse sand, gravelly coarse sandy loam
H3 - 39 to 70 inches:
H3 - 39 to 70 inches:

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Unnamed

Percent of map unit: 5 percent

Ramona

Percent of map unit: 5 percent

Greenfield

Percent of map unit: 5 percent

HeC—Hanford sandy loam, calcareous variant, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcf7
Elevation: 2,800 to 3,000 feet
Mean annual precipitation: 10 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 220 to 260 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford variant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford Variant

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: sandy loam
H2 - 16 to 36 inches: fine sandy loam, coarse sandy loam
H2 - 16 to 36 inches: sandy loam

H3 - 36 to 56 inches: sandy loam, coarse sandy loam
H4 - 56 to 80 inches:
H4 - 56 to 80 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Hanford

Percent of map unit: 5 percent

RzF—Rough broken land

Map Unit Setting

National map unit symbol: hch4
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Farmland classification: Not prime farmland

Map Unit Composition

Rough broken land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rough Broken Land

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave

Typical profile
H1 - 0 to 60 inches: variable

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Minor Components

Gullied land
Percent of map unit: 5 percent

Badlands
Percent of map unit: 5 percent

Rock outcrop
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Flood plains

Sa—Sandy alluvial land

Map Unit Setting
National map unit symbol: hch5
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Farmland classification: Not prime farmland

Map Unit Composition
Sandy alluvial land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sandy Alluvial Land

Setting
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 10 inches: sand
H2 - 10 to 30 inches: stratified sand to loam
H3 - 30 to 60 inches: stratified gravelly sand to gravelly loam

Properties and qualities
Slope: 0 to 2 percent

Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 10 inches
Frequency of flooding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: SANDY 9-20" (R020XE025CA)

Minor Components

Riverwash
Percent of map unit: 10 percent
Landform: Drainageways

Unnamed
Percent of map unit: 5 percent

ScF2—Saugus loam, 30 to 50 percent slopes, eroded

Map Unit Setting
National map unit symbol: hch8
Elevation: 600 to 2,500 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 275 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition
Saugus and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saugus

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Weakly consoildated alluvium

Typical profile
H1 - 0 to 15 inches: loam
H2 - 15 to 42 inches: loam, sandy loam

H2 - 15 to 42 inches: weathered bedrock
H3 - 42 to 46 inches:

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Gaviota

Percent of map unit: 5 percent

Rough broken land

Percent of map unit: 5 percent

Balcom

Percent of map unit: 3 percent

Castaic

Percent of map unit: 2 percent

SsB—Sorrento loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: hchh
Elevation: 80 to 1,800 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Sorrento and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sorrento

Setting

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

Typical profile

H1 - 0 to 7 inches: loam
H2 - 7 to 72 inches: loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Minor Components

Metz

Percent of map unit: 5 percent

Mocho

Percent of map unit: 5 percent

Yolo

Percent of map unit: 5 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities 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 property or quality.

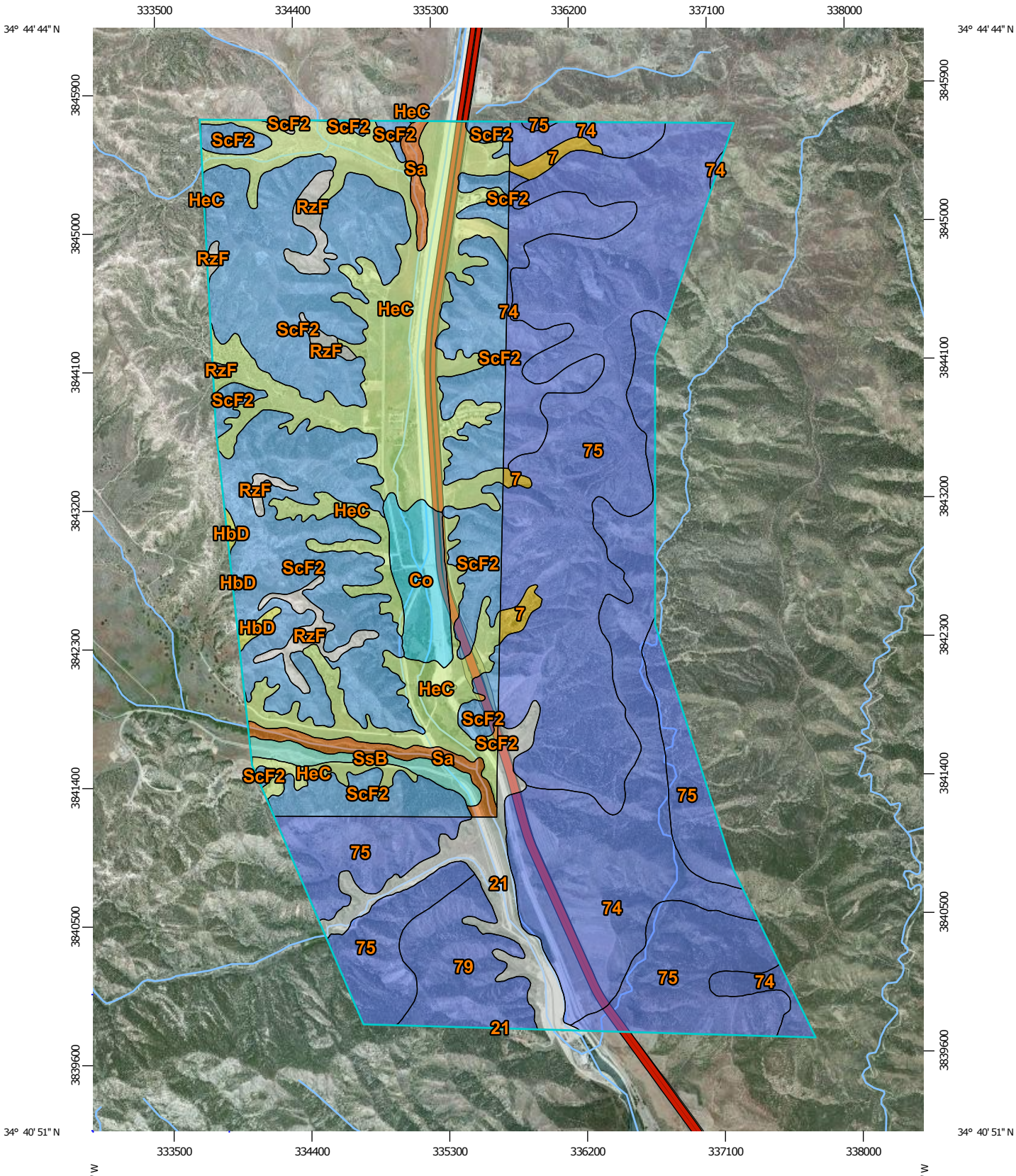
Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil

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

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



Map Scale: 1:35,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 500 1000 2000 3000

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Table—K Factor, Whole Soil

K Factor, Whole Soil— Summary by Map Unit — Angeles National Forest Area, California (CA776)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
7	Hanford family, 3 to 25 percent slopes	.15	28.7	0.7%
21	Riverwash		141.7	3.3%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	.49	670.1	15.6%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	.49	1,279.2	29.7%
79	Trigo-Lodo families-Haploxerolls, warm complex, 50 to 90 percent slopes	.49	140.6	3.3%
Subtotals for Soil Survey Area			**2,260.3**	**52.6%**
Totals for Area of Interest			**4,300.3**	**100.0%**

K Factor, Whole Soil— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Co	Chino loam	.37	86.0	2.0%
HbD	Hanford coarse sandy loam, 9 to 15 percent slopes	.20	10.4	0.2%
HeC	Hanford sandy loam, calcareous variant, 2 to 9 percent slopes	.24	709.5	16.5%
RzF	Rough broken land		81.0	1.9%
Sa	Sandy alluvial land	.05	57.5	1.3%
ScF2	Saugus loam, 30 to 50 percent slopes, eroded	.43	1,056.9	24.6%
SsB	Sorrento loam, 2 to 5 percent slopes	.32	38.7	0.9%
Subtotals for Soil Survey Area			**2,040.0**	**47.4%**
Totals for Area of Interest			**4,300.3**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

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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 Angeles National Forest Area, California, and Los Padres National Forest Area, California

Pyramid Dam and Lake

November 9, 2015

Preface

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

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

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

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

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

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

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

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

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

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

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

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

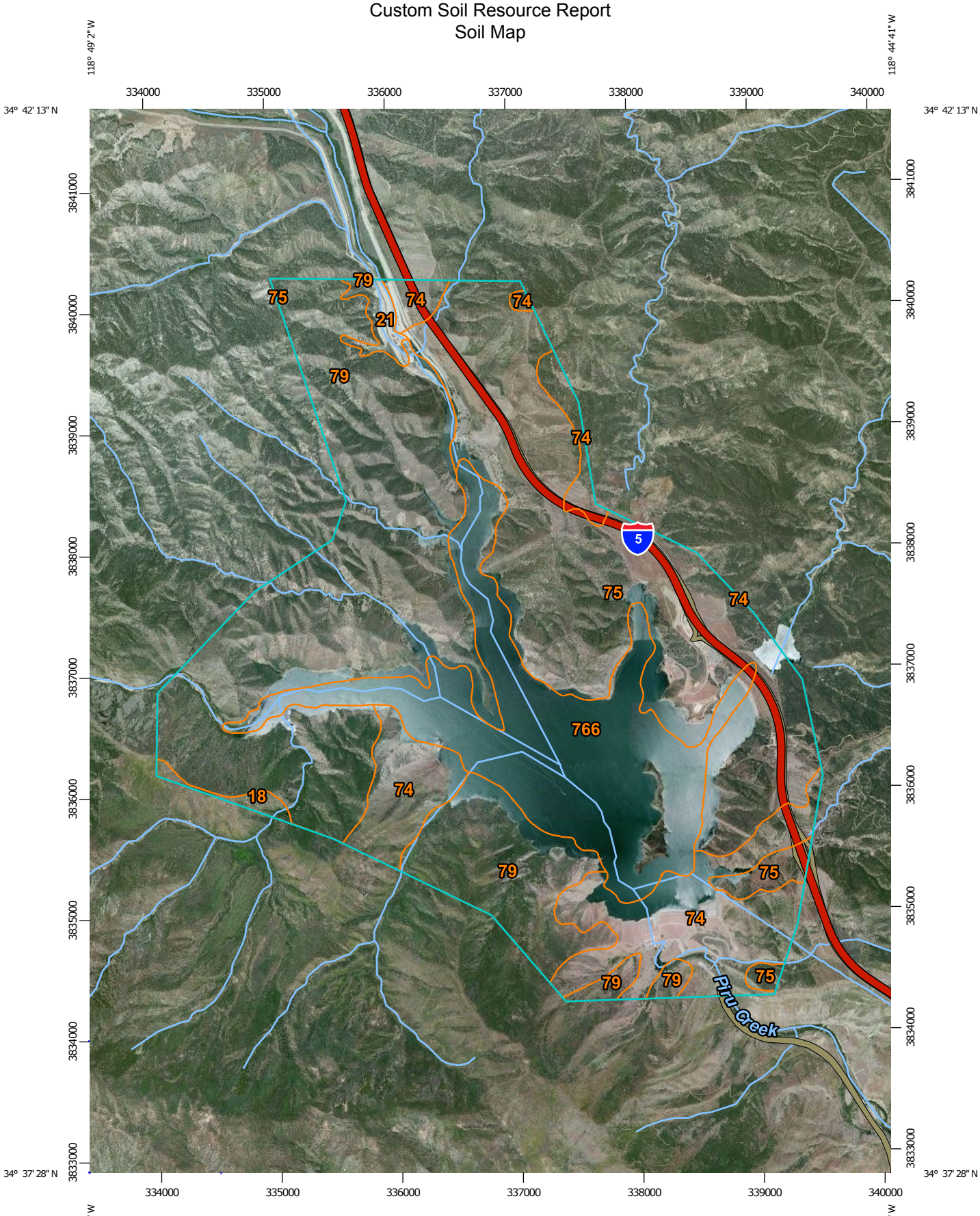
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree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

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

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:42,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Los Padres National Forest Area, California
Survey Area Data: Version 7, Sep 3, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Map Unit Legend

Angeles National Forest Area, California (CA776)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
21	Riverwash	44.9	0.9%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	690.2	14.1%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	1,399.2	28.5%
79	Trigo-Lodo families-Haploxerolls, warm complex, 50 to 90 percent slopes	1,839.1	37.5%
766	Water	910.7	18.5%
Subtotals for Soil Survey Area		**4,884.1**	**99.5%**
Totals for Area of Interest		**4,909.8**	**100.0%**

Los Padres National Forest Area, California (CA772)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
18	Lodo-Modjeska-Botella families association, 10 to 70 percent slopes	25.6	0.5%
Subtotals for Soil Survey Area		**25.6**	**0.5%**
Totals for Area of Interest		**4,909.8**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

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

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

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

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

Angeles National Forest Area, California

21—Riverwash

Map Unit Setting

National map unit symbol: hm6p
Elevation: 1,800 to 4,800 feet
Mean annual precipitation: 14 to 30 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium

Typical profile

H1 - 0 to 60 inches: extremely stony coarse sand

Properties and qualities

Slope: 2 to 10 percent
Percent of area covered with surface fragments: 25.0 percent
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Frequency of flooding: Frequent
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w

Minor Components

Hanford family

Percent of map unit: 7 percent

Vista family

Percent of map unit: 6 percent

Capistrano family

Percent of map unit: 6 percent

Tujunga family

Percent of map unit: 6 percent

74—Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes

Map Unit Setting

National map unit symbol: hm87
Elevation: 2,200 to 3,730 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Rock outcrop: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Scarps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 0 inches to paralithic bedrock
Natural drainage class: Excessively drained
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Minor Components

Rubble land
Percent of map unit: 4 percent

Unnamed, colluvial soils
Percent of map unit: 3 percent

Trigo family, fine textured
Percent of map unit: 3 percent

75—Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes

Map Unit Setting
National map unit symbol: hm88
Elevation: 2,400 to 4,000 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Haploxeralfs and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities
Slope: 30 to 70 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock

Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Haploxeralfs

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 6 inches: gravelly loam
H2 - 6 to 15 inches: gravelly clay loam, gravelly sandy clay loam
H2 - 6 to 15 inches: unweathered bedrock
H3 - 15 to 19 inches:

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 7 to 19 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Minor Components

Osito family

Percent of map unit: 3 percent

Unnamed, moderately deep soils

Percent of map unit: 3 percent

Modesto family

Percent of map unit: 3 percent

Rock outcrop

Percent of map unit: 2 percent

Vertic xerochrepts

Percent of map unit: 2 percent

Caperton family

Percent of map unit: 2 percent

79—Trigo-Lodo families-Haploxerolls, warm complex, 50 to 90 percent slopes

Map Unit Setting

National map unit symbol: hm8c
Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 15 to 21 inches

Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 45 percent
Lodo family and similar soils: 25 percent
Haploxerolls, warm, and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 20 inches:

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Lodo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from schist

Typical profile

H1 - 0 to 17 inches: gravelly loam
H2 - 17 to 21 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 6 to 19 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Haploxerolls, Warm

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and/or colluvium derived from schist

Typical profile

H1 - 0 to 10 inches: gravelly loam
H2 - 10 to 60 inches: very gravelly loam, very gravelly sandy loam
H2 - 10 to 60 inches: weathered bedrock
H3 - 60 to 64 inches:

Properties and qualities

Slope: 50 to 90 percent
Depth to restrictive feature: 60 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Mollic haploxeralfs

Percent of map unit: 5 percent

Caperton family
Percent of map unit: 5 percent

766—Water

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

Description of Water

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Los Padres National Forest Area, California

18—Lodo-Modjeska-Botella families association, 10 to 70 percent slopes

Map Unit Setting

National map unit symbol: hm54
Elevation: 1,300 to 5,800 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Modjeska family and similar soils: 30 percent
Lodo family and similar soils: 30 percent
Botella family and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lodo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 7 inches: sandy loam
H2 - 7 to 16 inches: gravelly sandy loam
H3 - 16 to 26 inches: unweathered bedrock

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 15 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Modjeska Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from granodiorite

Typical profile

H1 - 0 to 13 inches: sandy loam
H2 - 13 to 27 inches: extremely gravelly sandy loam, very gravelly sandy loam
H2 - 13 to 27 inches: unweathered bedrock
H3 - 27 to 31 inches:

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Description of Botella Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 40 inches: gravelly sandy loam, gravelly sandy clay loam
H2 - 9 to 40 inches: unweathered bedrock
H3 - 40 to 44 inches:

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Rock outcrop
Percent of map unit: 7 percent

Oak glen family
Percent of map unit: 7 percent

Chualar family
Percent of map unit: 6 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities 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 property or quality.

Soil Erosion Factors

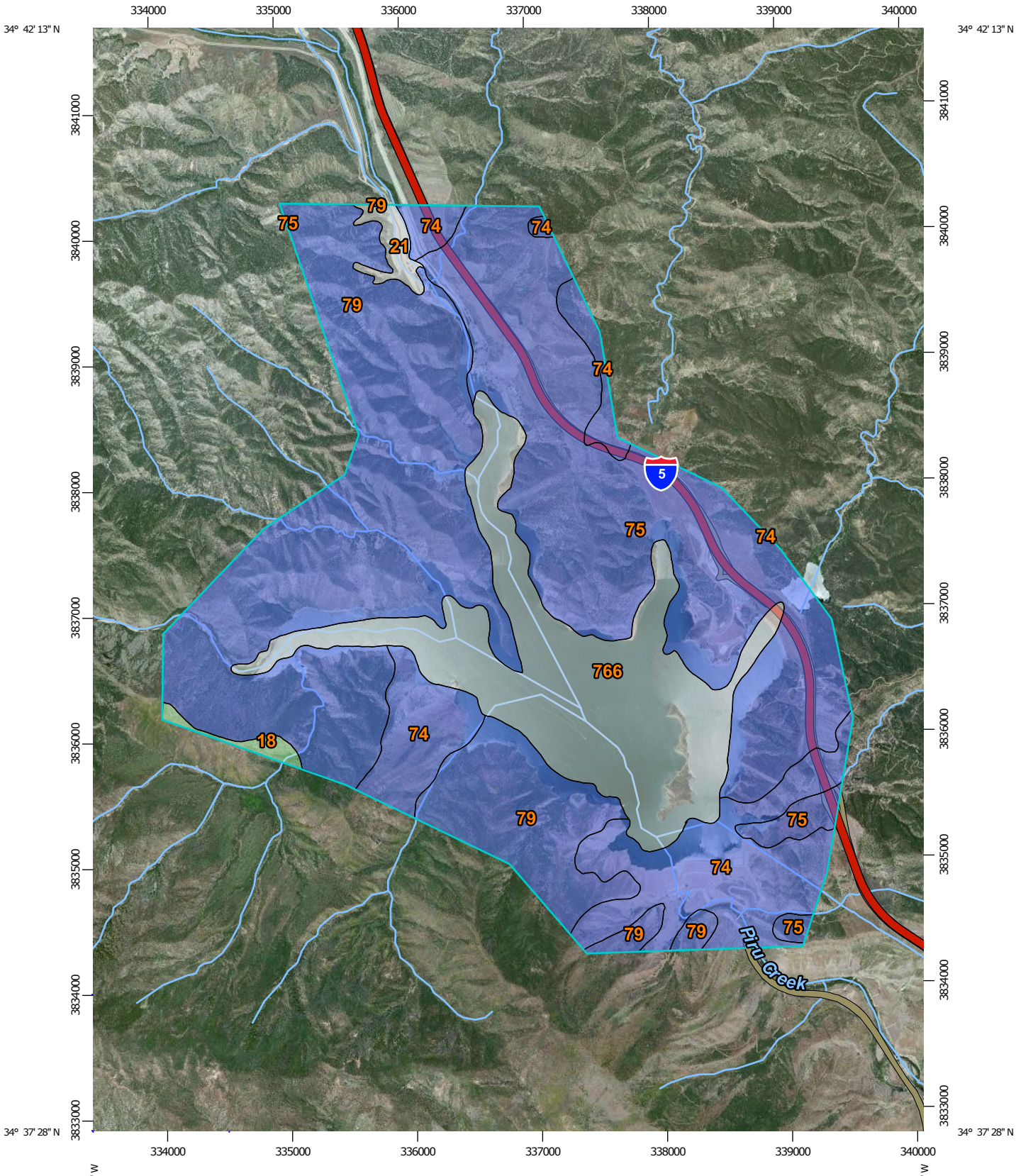
Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil

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

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

Custom Soil Resource Report
Map—K Factor, Whole Soil



Map Scale: 1:42,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Los Padres National Forest Area, California
Survey Area Data: Version 7, Sep 3, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Table—K Factor, Whole Soil

K Factor, Whole Soil— Summary by Map Unit — Angeles National Forest Area, California (CA776)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
21	Riverwash		44.9	0.9%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	.49	690.2	14.1%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	.49	1,399.2	28.5%
79	Trigo-Lodo families-Haploxerolls, warm complex, 50 to 90 percent slopes	.49	1,839.1	37.5%
766	Water		910.7	18.5%
Subtotals for Soil Survey Area			**4,884.1**	**99.5%**
Totals for Area of Interest			**4,909.8**	**100.0%**

K Factor, Whole Soil— Summary by Map Unit — Los Padres National Forest Area, California (CA772)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
18	Lodo-Modjeska-Botella families association, 10 to 70 percent slopes	.28	25.6	0.5%
Subtotals for Soil Survey Area			**25.6**	**0.5%**
Totals for Area of Interest			**4,909.8**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

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United States Department of Agriculture

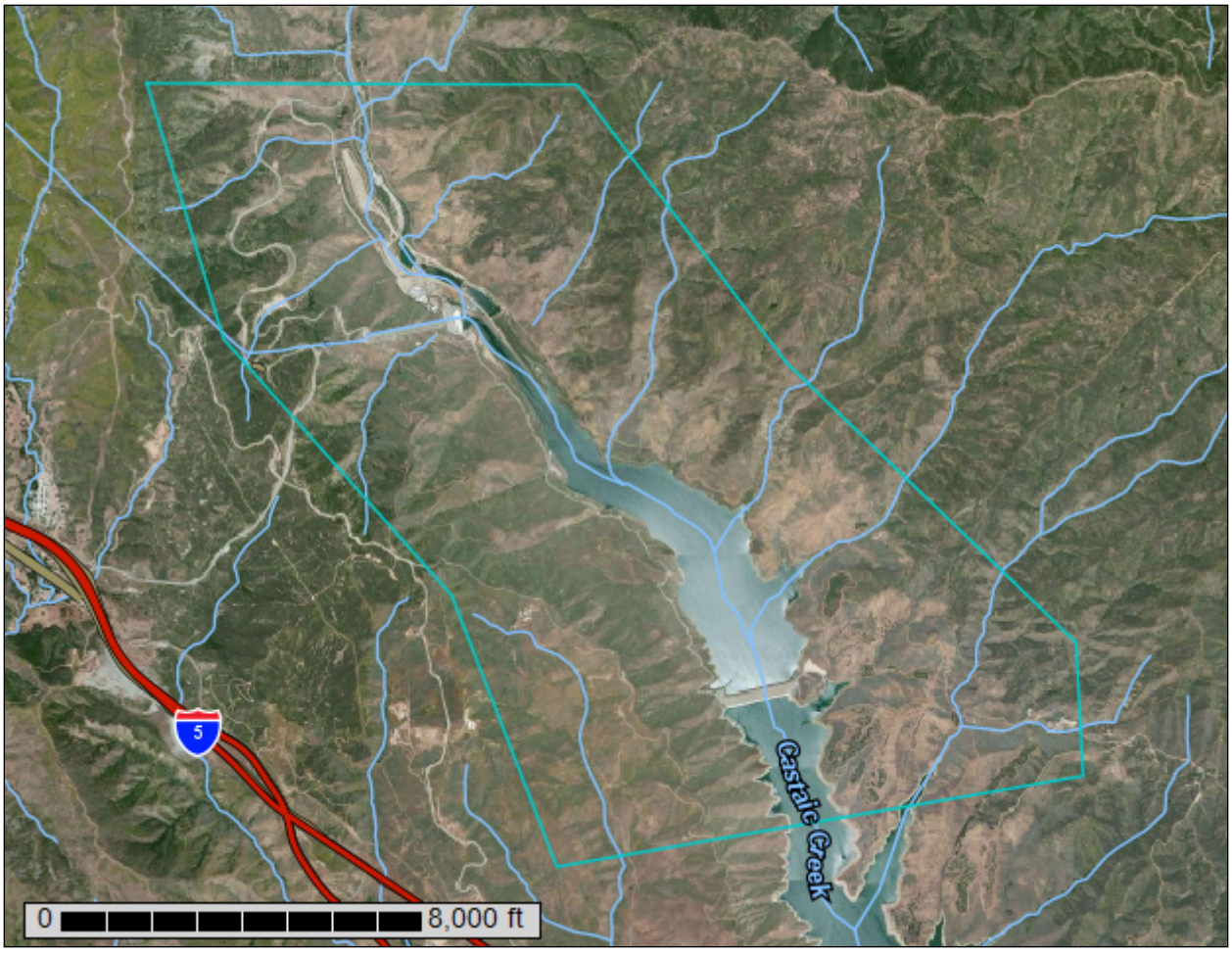
NRCS

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 Angeles National Forest Area, California, and Antelope Valley Area, California

Castaic-Elderberry



November 9, 2015

Preface

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

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

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

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

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

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

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

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

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

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

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

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

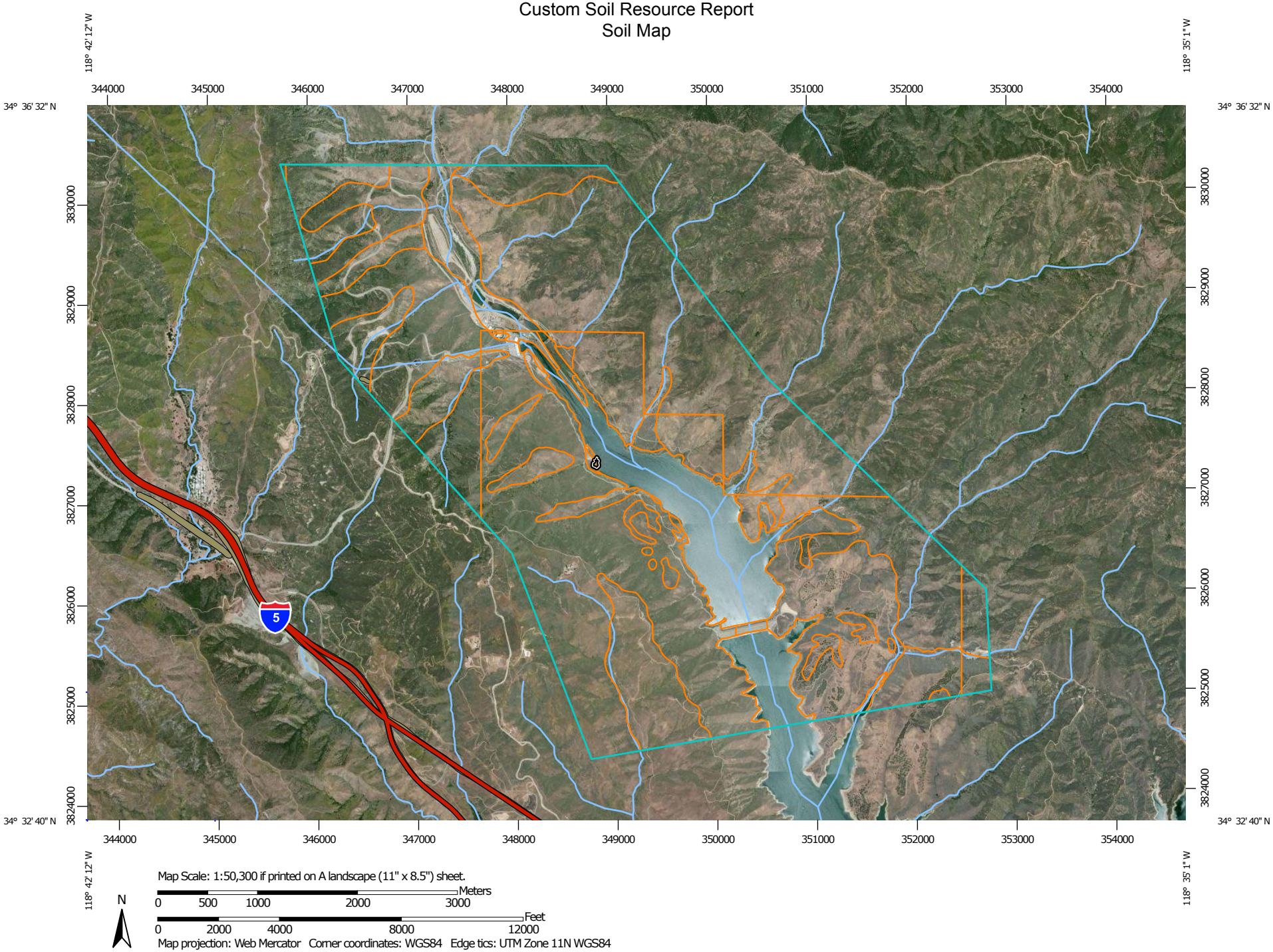
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree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

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

Soil Map

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

Custom Soil Resource Report
Soil Map



MAP 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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Map Unit Legend

Angeles National Forest Area, California (CA776)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
19	Trigo family-Calcixerollic Xerochrepts-Vista family complex, 30 to 70 percent slopes	27.0	0.5%
21	Riverwash	149.7	2.6%
26	Stonyford-Millsholm families complex, 30 to 70 percent slopes	1,195.7	21.0%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	361.1	6.3%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	589.2	10.3%
82	Vertic Xerochrepts, 5 to 50 percent slopes	1.4	0.0%
316	Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 percent slopes	99.8	1.8%
714	Trigo-Millsholm families-Rock outcrop complex, 45 to 90 percent slopes	0.1	0.0%
CzC	Cortina cobbly sandy loam, 2 to 9 percent slopes	37.7	0.7%
Subtotals for Soil Survey Area		**2,461.7**	**43.2%**
Totals for Area of Interest		**5,697.8**	**100.0%**

Antelope Valley Area, California (CA675)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
CmE	Castaic-Balcom silty clay loams, 15 to 30 percent slopes	97.5	1.7%
CmF	Castaic-Balcom silty clay loams, 30 to 50 percent slopes	846.7	14.9%
CmF2	Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded	103.9	1.8%
CnG3	Castaic and Saugus soils, 30 to 65 percent slopes, severely eroded	99.5	1.7%
CyA	Cortina sandy loam, 0 to 2 percent slopes	15.0	0.3%
CzC	Cortina cobbly sandy loam, 2 to 9 percent slopes	27.4	0.5%

Antelope Valley Area, California (CA675)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
MhE2	Millsholm rocky loam, 15 to 30 percent slopes, eroded	34.5	0.6%
MhF2	Millsholm rocky loam, 30 to 50 percent slopes, eroded	1,406.6	24.7%
RcD	Ramona coarse sandy loam, 9 to 15 percent slopes	5.0	0.1%
Sa	Sandy alluvial land	37.5	0.7%
W	Water	554.5	9.7%
YoC	Yolo loam, 2 to 9 percent slopes	8.0	0.1%
Subtotals for Soil Survey Area		**3,236.1**	**56.8%**
Totals for Area of Interest		**5,697.8**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that

have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

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

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

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

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

Angeles National Forest Area, California

19—Trigo family-Calcixerollic Xerochrepts-Vista family complex, 30 to 70 percent slopes

Map Unit Setting

National map unit symbol: hm6n
Elevation: 430 to 2,200 feet
Mean annual precipitation: 12 to 22 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 35 percent
Calcixerollic xerochrepts and similar soils: 30 percent
Vista family and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: loam
C - 3 to 17 inches: gravelly sandy loam
Cr - 17 to 21 inches: weathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calcixerollic Xerochrepts

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 5 inches: clay loam
H2 - 5 to 39 inches: clay loam, loam
H2 - 5 to 39 inches: weathered bedrock
H3 - 39 to 59 inches:

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 15 to 42 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very high (about 12.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

Description of Vista Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Typical profile

A - 0 to 9 inches: sandy loam
B1 - 9 to 29 inches: sandy loam
B2 - 29 to 50 inches: sandy loam
C - 50 to 60 inches: gravelly coarse sandy loam
Cr - 60 to 79 inches: bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Rock outcrop

Percent of map unit: 4 percent

Modesto family

Percent of map unit: 4 percent

Millsholm family

Percent of map unit: 4 percent

Trigo family, silt loam surface

Percent of map unit: 3 percent

21—Riverwash

Map Unit Setting

National map unit symbol: hm6p
Elevation: 1,800 to 4,800 feet
Mean annual precipitation: 14 to 30 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium

Typical profile

H1 - 0 to 60 inches: extremely stony coarse sand

Properties and qualities

Slope: 2 to 10 percent

Percent of area covered with surface fragments: 25.0 percent
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Frequency of flooding: Frequent
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w

Minor Components

Hanford family
Percent of map unit: 7 percent

Vista family
Percent of map unit: 6 percent

Capistrano family
Percent of map unit: 6 percent

Tujunga family
Percent of map unit: 6 percent

26—Stonyford-Millsholm families complex, 30 to 70 percent slopes

Map Unit Setting
National map unit symbol: hm6r
Elevation: 1,800 to 3,700 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Stonyford family and similar soils: 50 percent
Millsholm family and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stonyford Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 5 inches: gravelly clay loam
H2 - 5 to 19 inches: gravelly clay loam
H3 - 19 to 29 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Millsholm Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 5 inches: clay loam
H2 - 5 to 17 inches: clay loam
H3 - 17 to 27 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 12 to 19 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Minor Components

Rock outcrop
Percent of map unit: 4 percent

Modesto family
Percent of map unit: 4 percent

Typic haploxeralfs
Percent of map unit: 4 percent

Exchequer family
Percent of map unit: 4 percent

Lodo family
Percent of map unit: 4 percent

74—Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes

Map Unit Setting
National map unit symbol: hm87
Elevation: 2,200 to 3,730 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Rock outcrop: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 60 to 100 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Scarps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex

Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities
Slope: 60 to 100 percent
Depth to restrictive feature: 0 inches to paralithic bedrock
Natural drainage class: Excessively drained
Runoff class: Very high

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Minor Components

Rubble land
Percent of map unit: 4 percent

Unnamed, colluvial soils
Percent of map unit: 3 percent

Trigo family, fine textured
Percent of map unit: 3 percent

75—Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes

Map Unit Setting
National map unit symbol: hm88
Elevation: 2,400 to 4,000 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Trigo family and similar soils: 35 percent
Calleguas family and similar soils: 30 percent
Haploxeralfs and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 59 inches:

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Calleguas Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Haploxeralfs

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile
H1 - 0 to 6 inches: gravelly loam
H2 - 6 to 15 inches: gravelly clay loam, gravelly sandy clay loam
H2 - 6 to 15 inches: unweathered bedrock
H3 - 15 to 19 inches:

Properties and qualities
Slope: 30 to 70 percent
Depth to restrictive feature: 7 to 19 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Minor Components

Osito family
Percent of map unit: 3 percent

Unnamed, moderately deep soils
Percent of map unit: 3 percent

Modesto family
Percent of map unit: 3 percent

Rock outcrop
Percent of map unit: 2 percent

Vertic xerochrepts
Percent of map unit: 2 percent

Caperton family
Percent of map unit: 2 percent

82—Vertic Xerochrepts, 5 to 50 percent slopes

Map Unit Setting

National map unit symbol: hm8f
Elevation: 2,200 to 4,000 feet
Mean annual precipitation: 19 to 22 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Vertic xerochrepts and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vertic Xerochrepts

Setting

Landform: Mountains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from calcareous shale

Typical profile

H1 - 0 to 8 inches: silty clay
H2 - 8 to 30 inches: channery silty clay, silty clay
H2 - 8 to 30 inches: weathered bedrock
H3 - 30 to 34 inches:

Properties and qualities

Slope: 5 to 50 percent
Depth to restrictive feature: 18 to 45 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Minor Components

Unnamed, deep, well developed soil
Percent of map unit: 13 percent

Osito family
Percent of map unit: 12 percent

316—Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 percent slopes

Map Unit Setting
National map unit symbol: hm6z
Elevation: 430 to 5,500 feet
Mean annual precipitation: 11 to 30 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Rock outcrop: 40 percent
Chilao family and similar soils: 35 percent
Haploxerolls, warm, and similar soils: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from granodiorite

Typical profile
R - 0 to 10 inches: unweathered bedrock

Properties and qualities
Slope: 15 to 120 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Natural drainage class: Excessively drained
Runoff class: Very high

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Description of Chilao Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from granodiorite

Typical profile

A - 0 to 5 inches: gravelly loam
C - 5 to 18 inches: very cobbly loam, very gravelly loam, very gravelly sandy loam
C - 5 to 18 inches: weathered bedrock
C - 5 to 18 inches:
C - 18 to 28 inches:

Properties and qualities

Slope: 15 to 85 percent
Depth to restrictive feature: 6 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D

Description of Haploxerolls, Warm

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium

Typical profile

A - 0 to 10 inches: gravelly loam
C - 10 to 60 inches: very gravelly loam, very gravelly sandy loam
C - 10 to 60 inches: weathered bedrock
Cr - 60 to 70 inches:

Properties and qualities

Slope: 15 to 85 percent
Depth to restrictive feature: 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: A

Minor Components

Shortcut family

Percent of map unit: 2 percent
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex

Exchequer family

Percent of map unit: 2 percent
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex

Lodo family

Percent of map unit: 2 percent
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave

Hanford family

Percent of map unit: 2 percent
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex

Modjeska family

Percent of map unit: 1 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex

Vista family

Percent of map unit: 1 percent
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave

714—Trigo-Millsholm families-Rock outcrop complex, 45 to 90 percent slopes

Map Unit Setting

National map unit symbol: hm82
Elevation: 1,800 to 4,200 feet
Mean annual precipitation: 15 to 21 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigo family and similar soils: 45 percent
Millsholm families and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigo Family

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 16 inches: gravelly silt loam, gravelly loam
H2 - 8 to 16 inches: weathered bedrock
H3 - 16 to 20 inches:

Properties and qualities

Slope: 45 to 90 percent
Depth to restrictive feature: 3 to 19 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 3.97 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Millsholm Families

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 5 inches: clay loam
H2 - 5 to 17 inches: clay loam
H3 - 17 to 21 inches: unweathered bedrock

Properties and qualities

Slope: 45 to 90 percent
Depth to restrictive feature: 12 to 19 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Properties and qualities

Slope: 45 to 90 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Natural drainage class: Excessively drained
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8e

Minor Components

Modesto, mod deep family
Percent of map unit: 7 percent

Osito family
Percent of map unit: 7 percent

Chilao family, mod deep
Percent of map unit: 6 percent

CzC—Cortina cobbly sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: v5jh
Elevation: 30 to 2,400 feet
Mean annual precipitation: 12 to 40 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 275 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Cortina and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cortina

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 6 inches: cobbly sandy loam
H2 - 6 to 60 inches: stratified very cobbly sandy loam to very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: SANDY 9-20" (R019XD065CA)

Minor Components

Metz

Percent of map unit: 10 percent

Unnamed

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

Antelope Valley Area, California

CmE—Castaic-Balcom silty clay loams, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: hcd7
Elevation: 50 to 2,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 280 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Castaic and similar soils: 50 percent
Balcom and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Castaic

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 9 inches: silty clay loam
H2 - 9 to 26 inches: silty clay loam
H3 - 26 to 30 inches: weathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 22 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: CLAYEY 9-20" (R019XD063CA)

Description of Balcom

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 10 inches: silty clay loam
H2 - 10 to 28 inches: silty clay loam
H3 - 28 to 32 inches: weathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 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)
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: CLAYEY 9-20" (R019XD063CA)

Minor Components

Saugus

Percent of map unit: 9 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

CmF—Castaic-Balcom silty clay loams, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: hcd8
Elevation: 50 to 2,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 61 to 63 degrees F

Frost-free period: 280 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Castaic and similar soils: 50 percent
Balcom and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Castaic

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 11 inches: silty clay loam
H2 - 11 to 28 inches: silty clay loam
H3 - 28 to 32 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 22 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: CLAYEY 9-20" (R019XD063CA)

Description of Balcom

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 10 inches: silty clay loam
H2 - 10 to 28 inches: silty clay loam

H3 - 28 to 32 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 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)
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: CLAYEY 9-20" (R019XD063CA)

Minor Components

Gaviota

Percent of map unit: 4 percent

Saugus

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 3 percent
Landform: Drainageways

CmF2—Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcd9
Elevation: 50 to 2,500 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 280 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Castaic and similar soils: 50 percent
Balcom and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Castaic

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 9 inches: silty clay loam
H2 - 9 to 26 inches: silty clay loam
H3 - 26 to 30 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 22 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: CLAYEY 9-20" (R019XD063CA)

Description of Balcom

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 7 inches: silty clay loam
H2 - 7 to 25 inches: silty clay loam
H3 - 25 to 29 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 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)
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: CLAYEY 9-20" (R019XD063CA)

Minor Components

Saugus

Percent of map unit: 4 percent

Gaviota

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 3 percent
Landform: Drainageways

CnG3—Castaic and Saugus soils, 30 to 65 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: hcdc
Elevation: 50 to 2,500 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 280 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Castaic and similar soils: 45 percent
Saugus and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Castaic

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 9 inches: silty clay loam
H2 - 9 to 26 inches: silty clay loam
H3 - 26 to 30 inches: weathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 22 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

Description of Saugus

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 40 inches: loam, sandy loam
H2 - 8 to 40 inches: weathered bedrock
H3 - 40 to 44 inches:

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 35 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Minor Components

Balcom
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 10 percent
Landform: Drainageways

CyA—Cortina sandy loam, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hcdf
Elevation: 30 to 2,400 feet
Mean annual precipitation: 8 to 40 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 275 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Cortina and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cortina

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile
H1 - 0 to 12 inches: sandy loam
H2 - 12 to 28 inches: very gravelly sandy loam
H3 - 28 to 60 inches: very cobbly sandy loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: SANDY 9-20" (R019XD065CA)

Minor Components

Metz

Percent of map unit: 10 percent

Unnamed

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

CzC—Cortina cobbly sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcdh
Elevation: 30 to 2,400 feet
Mean annual precipitation: 12 to 40 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 275 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Cortina and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cortina

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 6 inches: cobbly sandy loam
H2 - 6 to 60 inches: stratified very cobbly sandy loam to very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained

Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups
Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: SANDY 9-20" (R019XD065CA)

Minor Components

Metz
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

MhE2—Millsholm rocky loam, 15 to 30 percent slopes, eroded

Map Unit Setting
National map unit symbol: hcfs
Elevation: 300 to 4,000 feet
Mean annual precipitation: 8 to 50 inches
Mean annual air temperature: 45 to 63 degrees F
Frost-free period: 110 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition
Millsholm and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millsholm

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile
H1 - 0 to 16 inches: loam

H2 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: SHALLOW LOAMY 9-20" (R019XD066CA)

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Gaviota

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 3 percent
Landform: Drainageways

Castaic

Percent of map unit: 2 percent

MhF2—Millsholm rocky loam, 30 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcft
Elevation: 300 to 4,000 feet
Mean annual precipitation: 8 to 50 inches
Mean annual air temperature: 45 to 63 degrees F
Frost-free period: 110 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Millsholm and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millsholm

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: SHALLOW LOAMY 9-20" (R019XD066CA)

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 5 percent

Castaic

Percent of map unit: 3 percent

Gaviota

Percent of map unit: 1 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

RcD—Ramona coarse sandy loam, 9 to 15 percent slopes

Map Unit Setting

National map unit symbol: hcgl
Elevation: 2,700 to 3,900 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ramona and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 20 inches: coarse sandy loam
H2 - 20 to 31 inches: fine sandy loam
H3 - 31 to 90 inches: sandy clay loam

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Greenfield
Percent of map unit: 5 percent

Hanford
Percent of map unit: 5 percent

Unnamed
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

Sa—Sandy alluvial land

Map Unit Setting
National map unit symbol: hch5
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Farmland classification: Not prime farmland

Map Unit Composition
Sandy alluvial land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sandy Alluvial Land

Setting
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 10 inches: sand
H2 - 10 to 30 inches: stratified sand to loam
H3 - 30 to 60 inches: stratified gravelly sand to gravelly loam

Properties and qualities
Slope: 0 to 2 percent
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 10 inches
Frequency of flooding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: SANDY 9-20" (R020XE025CA)

Minor Components

Riverwash

Percent of map unit: 10 percent
Landform: Drainageways

Unnamed

Percent of map unit: 5 percent

W—Water

Map Unit Composition

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

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

YoC—Yolo loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcj9
Elevation: 30 to 400 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Yolo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yolo

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 18 inches: loam
H2 - 18 to 72 inches: loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: LOAMY 9-20" (R019XD064CA)

Minor Components

Metz

Percent of map unit: 5 percent

Sorrento

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 5 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities 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 property or quality.

Soil Erosion Factors

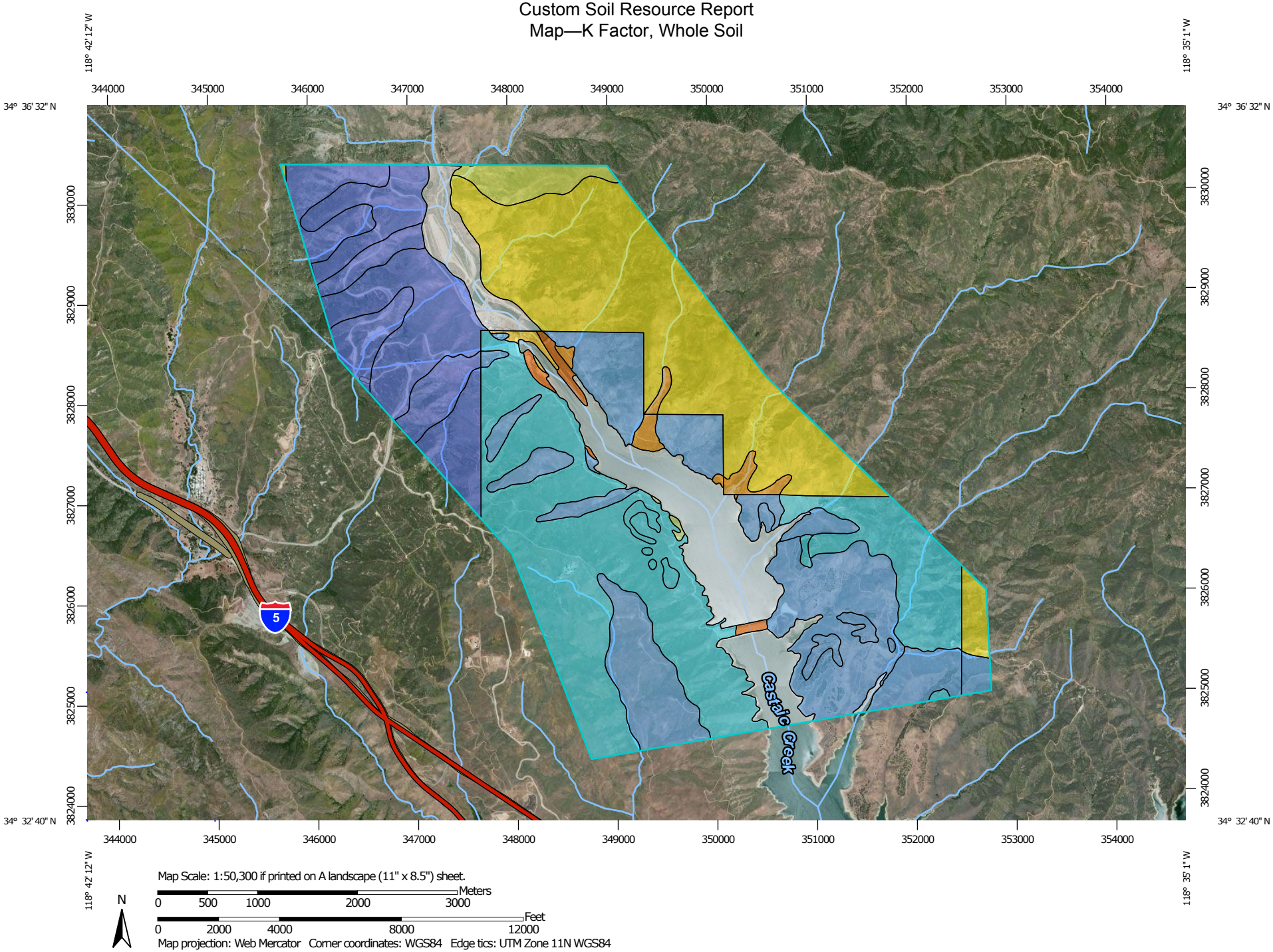
Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil

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

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

Custom Soil Resource Report
Map—K Factor, Whole Soil



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Table—K Factor, Whole Soil

K Factor, Whole Soil— Summary by Map Unit — Angeles National Forest Area, California (CA776)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
19	Trigo family-Calcixerollic Xerochrepts-Vista family complex, 30 to 70 percent slopes	.43	27.0	0.5%
21	Riverwash		149.7	2.6%
26	Stonyford-Millsholm families complex, 30 to 70 percent slopes	.17	1,195.7	21.0%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	.49	361.1	6.3%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	.49	589.2	10.3%
82	Vertic Xerochrepts, 5 to 50 percent slopes	.20	1.4	0.0%
316	Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 percent slopes	.20	99.8	1.8%
714	Trigo-Millsholm families-Rock outcrop complex, 45 to 90 percent slopes	.49	0.1	0.0%
CzC	Cortina cobbly sandy loam, 2 to 9 percent slopes	.10	37.7	0.7%
Subtotals for Soil Survey Area			**2,461.7**	**43.2%**
Totals for Area of Interest			**5,697.8**	**100.0%**

K Factor, Whole Soil— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
CmE	Castaic-Balcom silty clay loams, 15 to 30 percent slopes	.43	97.5	1.7%
CmF	Castaic-Balcom silty clay loams, 30 to 50 percent slopes	.43	846.7	14.9%
CmF2	Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded	.43	103.9	1.8%
CnG3	Castaic and Saugus soils, 30 to 65 percent slopes, severely eroded	.43	99.5	1.7%
CyA	Cortina sandy loam, 0 to 2 percent slopes	.15	15.0	0.3%

K Factor, Whole Soil— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CzC	Cortina cobbly sandy loam, 2 to 9 percent slopes	.10	27.4	0.5%
MhE2	Millsholm rocky loam, 15 to 30 percent slopes, eroded	.37	34.5	0.6%
MhF2	Millsholm rocky loam, 30 to 50 percent slopes, eroded	.37	1,406.6	24.7%
RcD	Ramona coarse sandy loam, 9 to 15 percent slopes	.24	5.0	0.1%
Sa	Sandy alluvial land	.05	37.5	0.7%
W	Water		554.5	9.7%
YoC	Yolo loam, 2 to 9 percent slopes	.43	8.0	0.1%
Subtotals for Soil Survey Area			**3,236.1**	**56.8%**
Totals for Area of Interest			**5,697.8**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

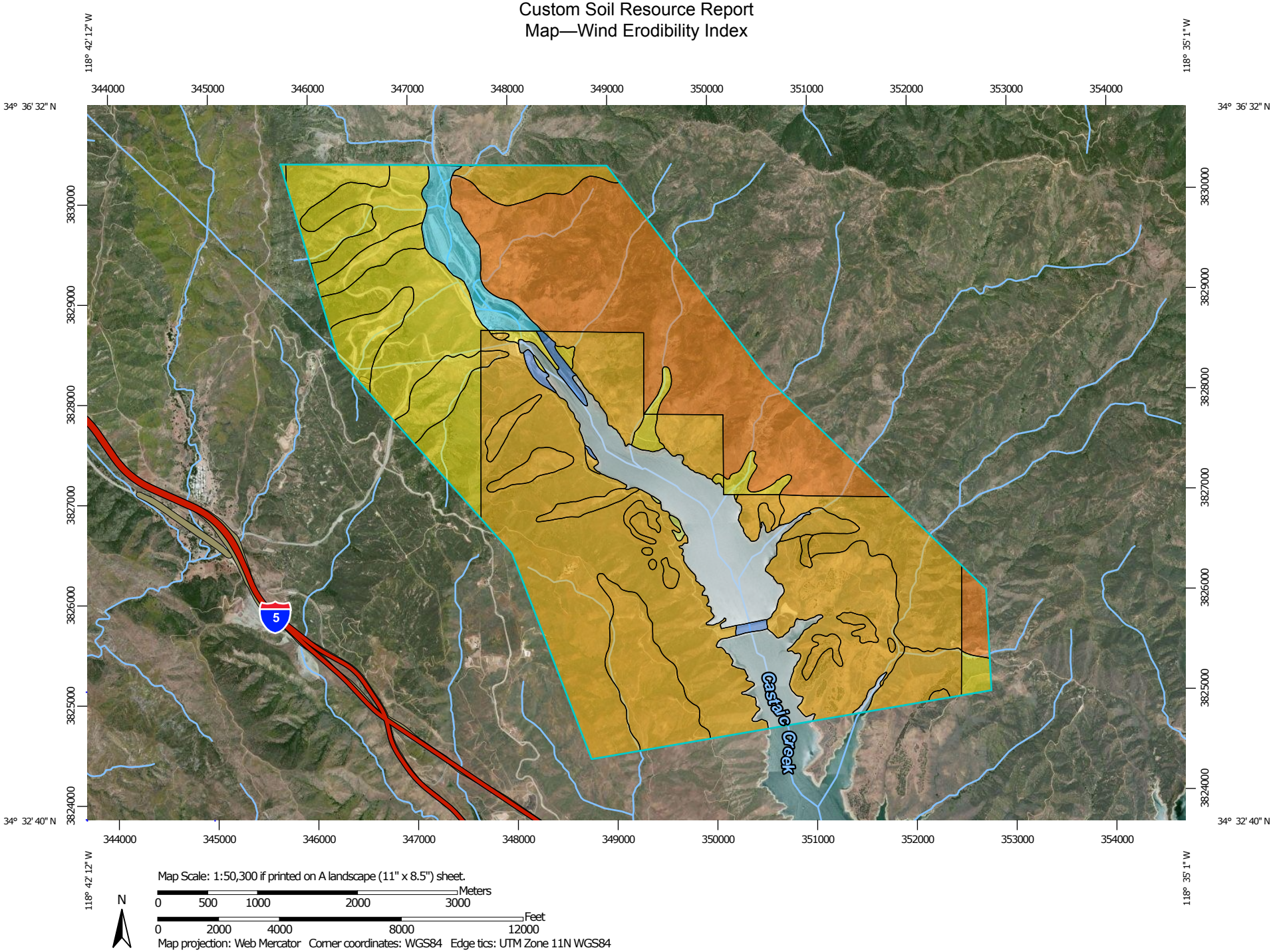
Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Wind Erodibility Index

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

Custom Soil Resource Report
Map—Wind Erodibility Index



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Angeles National Forest Area, California
Survey Area Data: Version 9, Sep 18, 2015

Soil Survey Area: Antelope Valley Area, California
Survey Area Data: Version 8, Sep 17, 2015

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: Jun 3, 2010—Aug 31, 2010

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

Table—Wind Erodibility Index

Wind Erodibility Index— Summary by Map Unit — Angeles National Forest Area, California (CA776)				
Map unit symbol	**Map unit name**	**Rating (tons per acre per year)**	**Acres in AOI**	**Percent of AOI**
19	Trigo family-Calcixerollic Xerochrepts-Vista family complex, 30 to 70 percent slopes	56	27.0	0.5%
21	Riverwash	180	149.7	2.6%
26	Stonyford-Millsholm families complex, 30 to 70 percent slopes	38	1,195.7	21.0%
74	Trigo-Calleguas families-Rock outcrop complex, 60 to 100 percent slopes	56	361.1	6.3%
75	Trigo-Calleguas families-Haploxeralfs complex, 30 to 70 percent slopes	56	589.2	10.3%
82	Vertic Xerochrepts, 5 to 50 percent slopes	86	1.4	0.0%
316	Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 percent slopes	48	99.8	1.8%
714	Trigo-Millsholm families-Rock outcrop complex, 45 to 90 percent slopes	56	0.1	0.0%
CzC	Cortina cobbly sandy loam, 2 to 9 percent slopes	56	37.7	0.7%
Subtotals for Soil Survey Area			**2,461.7**	**43.2%**
Totals for Area of Interest			**5,697.8**	**100.0%**

Wind Erodibility Index— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating (tons per acre per year)**	**Acres in AOI**	**Percent of AOI**
CmE	Castaic-Balcom silty clay loams, 15 to 30 percent slopes	48	97.5	1.7%
CmF	Castaic-Balcom silty clay loams, 30 to 50 percent slopes	48	846.7	14.9%
CmF2	Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded	48	103.9	1.8%
CnG3	Castaic and Saugus soils, 30 to 65 percent slopes, severely eroded	48	99.5	1.7%

Wind Erodibility Index— Summary by Map Unit — Antelope Valley Area, California (CA675)				
Map unit symbol	**Map unit name**	**Rating (tons per acre per year)**	**Acres in AOI**	**Percent of AOI**
CyA	Cortina sandy loam, 0 to 2 percent slopes	56	15.0	0.3%
CzC	Cortina cobbly sandy loam, 2 to 9 percent slopes	56	27.4	0.5%
MhE2	Millsholm rocky loam, 15 to 30 percent slopes, eroded	48	34.5	0.6%
MhF2	Millsholm rocky loam, 30 to 50 percent slopes, eroded	48	1,406.6	24.7%
RcD	Ramona coarse sandy loam, 9 to 15 percent slopes	86	5.0	0.1%
Sa	Sandy alluvial land	220	37.5	0.7%
W	Water		554.5	9.7%
YoC	Yolo loam, 2 to 9 percent slopes	48	8.0	0.1%
Subtotals for Soil Survey Area			**3,236.1**	**56.8%**
Totals for Area of Interest			**5,697.8**	**100.0%**

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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