



United States
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Natural
Resources
Conservation
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National Park
Service

Soil Survey of Golden Gate National Recreation Area, California



How To Use This Soil Survey

This publication consists of text, tables, and maps. The text includes descriptions of detailed soil map units and provides an explanation of the information presented in the tables. It also includes a glossary of terms used in the text and tables and a list of references.

The detailed soil maps can be useful in planning the use and management of small areas. To find information about your area of interest, locate that area on the map sheet. Note the map unit symbols that are in that area. Go to the Contents, which lists the map units by symbol and name and shows where each map unit is described.

The Contents shows which table has data on a specific land use for each detailed soil map unit. Also see the Contents for sections of this publication that may address your specific needs.

National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the United States Department of Agriculture, Natural Resources Conservation Service, and the United States Department of the Interior, National Park Service.

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

Literature Citation

The correct citation for this survey is as follows:

United States Department of Agriculture, Natural Resources Conservation Service, and United States Department of the Interior, National Park Service. 2013. Soil survey of Golden Gate National Recreation Area, California. (Accessible online at: http://soils.usda.gov/survey/printed_surveys)

Cover Caption

The Golden Gate Bridge, which connects the San Francisco areas of Golden Gate National Recreation Area, including Fort Point and Ocean Beach (to the south), with the Marin Headlands and Fort Baker (to the north). Parent material at one end of the bridge differs from that at the other end, resulting in different soils.

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Issued 2013

Preface

This soil survey was developed in conjunction with the National Park Service's Soil Inventory and Monitoring Program and is intended to serve as the official source document for soils occurring within Golden Gate National Recreation Area.

This soil survey contains information that affects current and future land use planning in the park. It contains predictions of soil behavior for selected land uses. The survey highlights soil limitations, actions needed to overcome the limitations, and the impact of selected land uses on the environment. It is designed to meet the needs of the National Park Service and its partners to better understand the properties of the soils in the park and the effects of these soil properties on various natural ecological characteristics. This knowledge can help the National Park Service and its partners to understand, protect, and enhance the environment.

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

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

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the park office for Golden Gate National Recreation Area.

Soil Survey of Golden Gate National Recreation Area, California

United States Department of Agriculture, Natural Resources Conservation Service, and United States Department of the Interior, National Park Service

How This Survey Was Made

This manuscript was made in conjunction with the USDA Natural Resources Conservation Service and the National Park Service's Soil Inventory and Monitoring Program to provide information about the soils and miscellaneous areas within Golden Gate National Recreation Area (NRA).

Golden Gate NRA was mapped almost 30 years ago by three separate Natural Resources Conservation Service field crews involved in the mapping of three separate soil survey projects: 1) Marin County, California; 2) San Mateo Area, California; and 3) San Mateo County, Eastern Part, and San Francisco County, California. The survey of Marin County was correlated in 1979 at a scale of 1:24,000. The survey of San Mateo Area was correlated in 1958 at a scale of 1:15,000. The survey of San Mateo County, Eastern Part, and San Francisco County was correlated in 1985 at a scale of 1:24,000. Because the concepts of soil taxonomy and mapping have evolved over the 26-year span of correlation, some data needs updating and may not join across county boundaries. Some post processing and updating of information was needed in order to assemble this manuscript. Differences in the scale used and in land use at the time of mapping influenced map unit design. In some instances, because data was clipped from more than one county-based set of soil maps, some same-named detailed soil map units may have more than one map symbol and their properties may vary.

Five new soils were established in Golden Gate NRA during the span of mapping, and four were established in the adjacent Point Reyes National Seashore. The four series established in Point Reyes National Seashore were also mapped in Golden Gate NRA. There are 156 map units and 848 map unit components used within the boundary of Golden Gate NRA as of October 2011.

The information in this report includes descriptions of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area 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.

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.

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 delineated the boundaries of these bodies on digital imagery and identified each as a specific map unit.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the park. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

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. The contrasting components are mentioned in the map unit descriptions. 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 the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given 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, Alambique sandy loam, 15 to 75 percent slopes, is a phase of the Alambique 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. Barnabe-Candlestick complex, 30 to 75 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. Tocaloma-Saurin association, steep, 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. Hugo and Josephine loams, steep, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Beaches is an example.

Table 1 lists each map unit in the park, its major and minor components, and the percentage of each component in the unit. Map unit composition may not total 100 percent. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

455964—Alambique sandy loam, 15 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Elevation: 295 to 990 feet

Mean annual precipitation: 30 to 45 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 330 days

Map Unit Composition

Alambique and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Alambique Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Ustic Dystropepts

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 30 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 6 inches; sandy loam
6 to 30 inches; loam
30 to 34 inches; weathered bedrock

Minor Components

Rock outcrop

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Zeni soils

Percent of map unit: 6 percent
Meets hydric soil criteria: No

Zeni variant soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

455965—Alambique-McGarvey complex, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt
Elevation: 345 to 1,985 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 275 to 330 days

Map Unit Composition

Alambique and similar soils: 45 percent
McGarvey and similar soils: 35 percent
Dissimilar minor components: 18 percent

Description of Alambique Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Ustic Dystropepts

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Paralitich bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 12 inches; gravelly loam
12 to 30 inches; gravelly loam
30 to 34 inches; weathered bedrock

Description of McGarvey Soil

Classification

Soil taxonomic classification: Fine, mixed, isomesic Ultic Tropudalfs

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex

Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 7 inches; loam
7 to 14 inches; clay loam
14 to 37 inches; clay
37 to 41 inches; weathered bedrock

Minor Components

Maymen soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 12 percent
Meets hydric soil criteria: No

455966—Barnabe-Candlestick complex, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 1,340 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 300 to 350 days

Map Unit Composition

Barnabe and similar soils: 45 percent

Candlestick and similar soils: 35 percent
Dissimilar minor components: 15 percent

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: South to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Hard, fractured residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 8 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 0.9 inch)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 7 inches; very gravelly sandy loam
7 to 12 inches; very gravelly sandy loam
12 to 16 inches; unweathered bedrock

Description of Candlestick Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: South to east (clockwise)

Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Hard, fractured residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 2 inches; fine sandy loam
2 to 20 inches; loam
20 to 24 inches; sandy clay loam
24 to 28 inches; unweathered bedrock

Minor Components

Buriburi soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Candlestick variant soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Kron soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

455967—Barnabe-Rock outcrop complex, 15 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 295 to 845 feet
Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Barnabe and similar soils: 40 percent

Rock outcrop: 40 percent

Dissimilar minor components: 18 percent

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 30 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Hard, fractured residuum weathered from sandstone

Restrictive feature(s): Lithic bedrock at a depth of 8 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.9 inch)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 7 inches; very gravelly sandy loam

7 to 12 inches; very gravelly sandy loam

12 to 16 inches; unweathered bedrock

Description of Rock Outcrop

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 15 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest
Aspect range: East to northwest (clockwise)

Minor Components

Buriburi soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Candlestick soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Kron soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 9 percent
Meets hydric soil criteria: No

455970—Candlestick-Barnabe complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 75 to 1,200 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 300 to 350 days

Map Unit Composition

Candlestick and similar soils: 45 percent
Barnabe and similar soils: 25 percent
Dissimilar minor components: 20 percent

Description of Candlestick Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: Southeast to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Hard, fractured residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 2 inches; fine sandy loam
2 to 20 inches; loam
20 to 24 inches; sandy clay loam
24 to 28 inches; unweathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: Southeast to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 8 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 0.9 inch)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 7 inches; very gravelly sandy loam
7 to 12 inches; very gravelly sandy loam
12 to 16 inches; unweathered bedrock

Minor Components

Buriburi soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Kron soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Orthents, cut and fill

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

455971—Candlestick-Kron-Buriburi complex, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 1,340 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 300 to 350 days

Map Unit Composition

Candlestick and similar soils: 40 percent
Kron and similar soils: 25 percent
Buriburi and similar soils: 20 percent
Dissimilar minor components: 14 percent

Description of Candlestick Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: Southeast to east (clockwise)

Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Hard, fractured residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Very slightly saline (about 2.0 mmhos/cm)
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 2 inches; fine sandy loam
2 to 20 inches; loam
20 to 24 inches; sandy clay loam

Description of Kron Soil

Classification

Soil taxonomic classification: Loamy, mixed, isomesic Lithic Haplustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: Southeast to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Hard, fractured residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 2.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 3 inches; sandy loam

3 to 14 inches; loam

14 to 18 inches; unweathered bedrock

Description of Buriburi Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Haplustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 30 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: Southeast to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Hard, fractured residuum weathered from sandstone

Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Very slightly saline (about 2.0 mmhos/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 30 inches; gravelly loam

Minor Components

Barnabe soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Orthents, cut and fill

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Typic Argiustolls

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 6 percent

Meets hydric soil criteria: No

455972—Candlestick variant loam, 2 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 26.2 to 400 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Candlestick variant and similar soils: 85 percent

Dissimilar minor components: 10 percent

Description of Candlestick Variant Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Footslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 2 to 15 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southeast

Aspect range: Northwest to west (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Alluvium derived from mixed sources

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 10.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 21 inches; loam

21 to 65 inches; clay loam

Minor Components

Unnamed soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

455973—Candlestick variant loam, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 26.2 to 400 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Candlestick variant and similar soils: 85 percent

Dissimilar minor components: 9 percent

Description of Candlestick Variant Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Footslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 15 to 30 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: East

Aspect range: Northwest to southwest (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Alluvium derived from mixed sources

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 10.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 21 inches; loam
21 to 65 inches; clay loam

Minor Components

Unnamed soils

Percent of map unit: 9 percent
Meets hydric soil criteria: No

455974—Fagan loam, 15 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 1,985 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 275 to 330 days

Map Unit Composition

Fagan and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Fagan Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Typic Argixerolls

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 50 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches

Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.1 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 5 inches; loam
5 to 26 inches; clay loam
26 to 43 inches; clay

Minor Components

Maymen soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Obispo soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

455976—Los Gatos loam, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 395 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 275 to 330 days

Map Unit Composition

Los Gatos and similar soils: 85 percent
Dissimilar minor components: 14 percent

Description of Los Gatos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 75 percent

Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: South to east (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 22 inches; loam
22 to 36 inches; sandy clay loam
36 to 40 inches; unweathered bedrock

Minor Components

Fagan soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Obispo soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Orthents, cut and fill

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Urban land

Percent of map unit: 2 percent
Meets hydric soil criteria: No

455977—Maymen gravelly loam, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 400 to 1,190 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 55 to 59 degrees F

Frost-free period: 275 to 330 days

Map Unit Composition

Maymen and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Maymen Soil

Classification

Soil taxonomic classification: Loamy, mixed, mesic Dystric Lithic Xerochrepts

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank and side slope

Slope range: 30 to 50 percent

Down-slope shape: Convex and concave

Across-slope shape: Convex

Representative aspect: Northeast

Aspect range: Northwest to southeast (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from siltstone

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 12 inches; gravelly loam

12 to 16 inches; unweathered bedrock

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Meets hydric soil criteria: No

455980—Obispo clay, 5 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 95 to 595 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 to 59 degrees F

Frost-free period: 275 to 330 days

Map Unit Composition

Obispo and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Obispo Soil

Classification

Soil taxonomic classification: Clayey, magnesian, thermic Lithic Haploxerolls

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 5 to 15 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from serpentinite

Restrictive feature(s): Lithic bedrock at a depth of 8 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 12 inches; clay

12 to 16 inches; unweathered bedrock

Minor Components

Fagan soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Urban land

Percent of map unit: 3 percent

Meets hydric soil criteria: No

455981—Obispo clay, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 95 to 595 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 to 61 degrees F

Frost-free period: 275 to 330 days

Map Unit Composition

Obispo and similar soils: 85 percent

Dissimilar minor components: 12 percent

Description of Obispo Soil

Classification

Soil taxonomic classification: Clayey, magnesian, thermic Lithic Haploxerolls

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: South to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from serpentinite

Restrictive feature(s): Lithic bedrock at a depth of 8 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 12 inches; clay

12 to 16 inches; unweathered bedrock

Minor Components

Fagan soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Urban land

Percent of map unit: 3 percent

Meets hydric soil criteria: No

455982—Orthents, cut and fill, 0 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 0 to 696 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 59 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Orthents and similar soils: 85 percent

Dissimilar minor components: 6 percent

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landform: Hills, terraces, and alluvial fans

Landform position (two-dimensional): Backslope and footslope

Landform position (three-dimensional): Side slope and tread

Slope range: 0 to 15 percent

Down-slope shape: Linear and convex

Across-slope shape: Linear and convex

Representative aspect: Northwest

Aspect range: South to east (clockwise)

Soil temperature regime: Mesic

Properties and Qualities

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e

Meets hydric soil criteria: No

Hydrologic soil group: B

Minor Components

Unnamed soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Urban land

Percent of map unit: 2 percent

Meets hydric soil criteria: No

455983—Orthents, cut and fill, 15 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 0 to 696 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Orthents and similar soils: 85 percent

Dissimilar minor components: 5 percent

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 15 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: East

Aspect range: Northwest to southwest (clockwise)

Soil temperature regime: Mesic

Properties and Qualities

Parent material: Residuum

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e

Meets hydric soil criteria: No

Hydrologic soil group: D

Minor Components

Urban land

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

455984—Orthents, cut and fill-Urban land complex, 0 to 5 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 9.8 to 597 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Orthents and similar soils: 65 percent

Urban land: 35 percent

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landform position (two-dimensional): Footslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 5 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: North

Aspect range: West to east (clockwise)

Properties and Qualities

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e

Meets hydric soil criteria: No

Hydrologic soil group: A

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 5 percent

Representative aspect: North

Aspect range: West to east (clockwise)

Properties and Qualities

Runoff: Very high

455985—Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes (fig. 1)

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 75 to 790 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Orthents and similar soils: 50 percent

Urban land: 35 percent

Dissimilar minor components: 12 percent

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 5 to 75 percent

Down-slope shape: Convex



Figure 1.—Alcatraz, which is in an area of Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes. Orthents, cut and fill, are undeveloped, manmade soils that have no horizonation.

Across-slope shape: Convex
Representative aspect: East
Aspect range: Northwest to south (clockwise)

Properties and Qualities

Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e
Meets hydric soil criteria: No
Hydrologic soil group: D

Description of Urban Land

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 5 to 75 percent
Down-slope shape: Convex
Across-slope shape: Convex

Representative aspect: East
Aspect range: Northwest to south (clockwise)

Properties and Qualities

Runoff: Very high

Minor Components

Botella soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Fagan soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Francisquito soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Los Gatos soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Obispo soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

455986—Pits and dumps

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Map Unit Composition

Pits: 50 percent

Dumps: 50 percent

Description of Pits

Setting

Slope range: 0 to 3 percent

Representative aspect: Northwest

Aspect range: Southeast to east (clockwise)

Description of Dumps

Setting

Slope range: 0 to 50 percent

Representative aspect: Northwest

Aspect range: Southeast to east (clockwise)

Interpretive Groups

Land capability subclass (nonirrigated): 8s

Meets hydric soil criteria: No

Hydrologic soil group: A

455988—Rock outcrop-Orthents complex, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 0 to 646 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Rock outcrop: 45 percent

Orthents and similar soils: 45 percent

Dissimilar minor components: 10 percent

Description of Rock Outcrop

Setting

Slope range: 30 to 75 percent

Representative aspect: West

Aspect range: South to north (clockwise)

Description of Orthents

Classification

Soil taxonomic classification: Lithic Xerorthents

Setting

Landform position (three-dimensional): Riser

Slope range: 30 to 75 percent

Down-slope shape: Convex

Across-slope shape: Linear

Representative aspect: West

Aspect range: South to north (clockwise)

Properties and Qualities

Parent material: Mixed sedimentary, serpentine, or basaltic volcanic rock

Restrictive feature(s): Lithic bedrock at a depth of 0 to 10 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Excessively drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8s

Meets hydric soil criteria: No

Hydrologic soil group: D

Minor Components

Miramar soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Scarper soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Sirdrak soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Typic Argiustolls

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Urban land

Percent of map unit: 2 percent

Meets hydric soil criteria: No

455989—Scarper-Miramar complex, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 1,790 feet

Mean annual precipitation: 20 to 45 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Scarper and similar soils: 40 percent

Miramar and similar soils: 35 percent

Dissimilar minor components: 24 percent

Description of Scarper Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, isomesic Typic Haplustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 30 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from quartz-diorite

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 2.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 16 inches; gravelly coarse sandy loam
16 to 25 inches; gravelly coarse sandy loam
25 to 29 inches; weathered bedrock

Description of Miramar Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to northwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from quartz-diorite
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 15 inches; loam
15 to 24 inches; clay loam
24 to 29 inches; loam
29 to 33 inches; weathered bedrock

Minor Components

Orthents, cut and fill

Percent of map unit: 6 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 6 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 6 percent

Meets hydric soil criteria: No

Urban land

Percent of map unit: 6 percent

Meets hydric soil criteria: No

455990—Sirdrak sand, 5 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 19.7 to 696 feet

Mean annual precipitation: 20 to 25 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Sirdrak and similar soils: 85 percent

Dissimilar minor components: 8 percent

Description of Sirdrak Soil

Classification

Soil taxonomic classification: Sandy, mixed, isomesic Humic Dystrustepts

Setting

Landform: Dunes

Landform position (three-dimensional): Tread

Slope range: 5 to 50 percent

Down-slope shape: Convex

Across-slope shape: Concave

Representative aspect: Northwest

Aspect range: South to northeast (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Low

Parent material: Eolian sands

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: A

Typical Profile

0 to 17 inches; sand
17 to 60 inches; sand

Minor Components

Beaches

Percent of map unit: 3 percent
Meets hydric soil criteria: Yes

Dune land

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Typic Argiustolls

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 2 percent
Landform: Tidal flats
Meets hydric soil criteria: Yes

Urban land

Percent of map unit: 1 percent
Meets hydric soil criteria: No

**455991—Typic Argiustolls, loamy-Urban land association,
5 to 15 percent slopes**

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 26.2 to 446 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 300 to 350 days

Map Unit Composition

Typic Argiustolls and similar soils: 50 percent
Urban land: 30 percent
Dissimilar minor components: 16 percent

Description of Typic Argiustolls

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Argiustolls

Setting

Landform: Fluviomarine terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Slope range: 5 to 15 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Northwest
Aspect range: South to northeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Parent material: Coastal alluvium derived from sedimentary rock
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 11 inches; sandy clay loam
11 to 37 inches; sandy clay loam
37 to 60 inches; sandy clay loam

Description of Urban Land

Setting

Landform: Fluviomarine terraces
Slope range: 5 to 15 percent
Representative aspect: Northwest
Aspect range: South to northeast (clockwise)

Properties and Qualities

Runoff: Very high

Minor Components

Candlestick soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Candlestick variant soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Obispo soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Orthents, cut and fill

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Scarper soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Sirdrak soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

455992—Urban land

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 9.8 to 325 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Urban land: 85 percent

Dissimilar minor components: 14 percent

Description of Urban Land

Setting

Landform position (two-dimensional): Toeslope

Slope range: 0 to 15 percent

Representative aspect: Northeast

Aspect range: Northwest to southeast (clockwise)

Properties and Qualities

Runoff: Very high

Minor Components

Orthents, cut and fill

Percent of map unit: 7 percent

Meets hydric soil criteria: No

Orthents, reclaimed

Percent of map unit: 7 percent

Meets hydric soil criteria: No

455993—Urban land-Orthents, cut and fill complex, 0 to 5 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 26.2 to 499 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Urban land: 50 percent

Orthents and similar soils: 45 percent

Dissimilar minor components: 4 percent

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Slope range: 0 to 5 percent

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Properties and Qualities

Runoff: Very high

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Slope range: 0 to 5 percent

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Properties and Qualities

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e

Meets hydric soil criteria: No

Hydrologic soil group: B

Minor Components

Botella soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Orthents, reclaimed

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Sirdrak soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

455994—Urban land-Orthents, cut and fill complex, 5 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 75 to 790 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Urban land: 50 percent

Orthents and similar soils: 40 percent

Dissimilar minor components: 10 percent

Description of Urban Land

Setting

Landform position (two-dimensional): Backslope

Slope range: 5 to 75 percent

Representative aspect: East

Aspect range: Northwest to south (clockwise)

Properties and Qualities

Runoff: Very high

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Slope range: 5 to 75 percent

Representative aspect: East

Aspect range: Northwest to south (clockwise)

Properties and Qualities

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e

Meets hydric soil criteria: No

Hydrologic soil group: C

Minor Components

Barnabe soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Candlestick soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Candlestick variant soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Fagan soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Los Gatos soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Mayman soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Obispo soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Scarper soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Sirdrak soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

455995—Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 0 to 49 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Urban land: 65 percent
Orthents and similar soils: 30 percent
Dissimilar minor components: 4 percent

Description of Urban Land

Setting

Slope range: 0 to 2 percent
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)

Properties and Qualities

Runoff: Very high

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Slope range: 0 to 2 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)

Properties and Qualities

Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Water table (depth, kind): At the soil surface, perched (see table 19)
Drainage class: Well drained
Salinity maximum: Moderately saline (about 12.0 mmhos/cm)
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e
Meets hydric soil criteria: No
Hydrologic soil group: D

Minor Components

Novato soils

Percent of map unit: 2 percent
Landform: Salt marshes
Meets hydric soil criteria: Yes

Orthents, cut and fill

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Reyes soils

Percent of map unit: 1 percent
Landform: Salt marshes
Meets hydric soil criteria: Yes

455996—Urban land-Orthents, smoothed complex, 5 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 95 to 495 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Urban land: 65 percent

Orthents and similar soils: 25 percent

Dissimilar minor components: 10 percent

Description of Urban Land

Setting

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope and tread

Slope range: 5 to 50 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: Southeast to east (clockwise)

Properties and Qualities

Runoff: Very high

Description of Orthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landform: Terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Crest, side slope, and tread

Slope range: 5 to 50 percent

Down-slope shape: Linear and convex

Across-slope shape: Linear and convex

Representative aspect: Northwest

Aspect range: Southeast to east (clockwise)

Properties and Qualities

Parent material: Sandstone

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 0.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 8e

Meets hydric soil criteria: No

Hydrologic soil group: D

Minor Components

Unnamed soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

455997—Urban land-Sirdrak complex, 2 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 9.8 to 801 feet

Mean annual precipitation: 15 to 25 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Urban land: 45 percent

Sirdrak and similar soils: 35 percent

Dissimilar minor components: 20 percent

Description of Urban Land

Setting

Slope range: 2 to 50 percent

Representative aspect: West

Aspect range: Southeast to north (clockwise)

Properties and Qualities

Runoff: Very high

Description of Sirdrak Soil

Classification

Soil taxonomic classification: Sandy, mixed, isomesic Humic Dystrustepts

Setting

Landform: Marine terraces

Landform position (three-dimensional): Tread

Slope range: 2 to 50 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: West

Aspect range: Southeast to north (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very low

Parent material: Eolian dune deposits

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: A

Typical Profile

0 to 17 inches; sand
17 to 60 inches; sand

Minor Components

Unnamed soils

Percent of map unit: 20 percent
Meets hydric soil criteria: No

455998—Zeni-Zeni variant gravelly loams, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt
Elevation: 295 to 1,095 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 54 to 55 degrees F
Frost-free period: 275 to 330 days

Map Unit Composition

Zeni and similar soils: 40 percent
Zeni variant and similar soils: 35 percent
Dissimilar minor components: 24 percent

Description of Zeni Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Ultic Haplustalfs

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank and side slope
Slope range: 30 to 75 percent
Down-slope shape: Concave
Across-slope shape: Linear and convex
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone

Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Very slightly saline (about 2.0 mmhos/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 9 inches; gravelly loam

9 to 26 inches; gravelly sandy clay loam and gravelly clay loam

26 to 30 inches; weathered bedrock

Description of Zeni Variant Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, isomesic Typic Argiustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank and side slope

Slope range: 30 to 75 percent

Down-slope shape: Linear and concave

Across-slope shape: Linear and convex

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from metasedimentary rock

Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Very slightly saline (about 2.0 mmhos/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 13 inches; gravelly loam

13 to 31 inches; very gravelly clay loam

31 to 39 inches; gravelly clay loam

39 to 43 inches; unweathered bedrock

Minor Components

Alambique soils

Percent of map unit: 6 percent

Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 6 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 12 percent

Meets hydric soil criteria: No

456000—Beaches

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Map Unit Composition

Beaches: 100 percent

Description of Beaches

Setting

Landscape: Shore complexes

Landform: Beaches

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 2 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: South to northwest (clockwise)

456001—Water

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Map Unit Composition

Water: 100 percent

456330—Botella loam, sloping, seeped

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 801 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 57 to 59 degrees F

Frost-free period: 250 to 350 days

Map Unit Composition

Botella and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Botella Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Argixerolls

Setting

Landform: Benches, terraces, and alluvial fans

Landform position (two-dimensional): Backslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 7 to 15 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 9.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 28 inches; loam

28 to 60 inches; silty clay loam

Minor Components

Dublin soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Soquel soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 5 percent

Landform: Flood plains

Geomorphic position (two-dimensional): Toeslope

Down-slope shape: Linear

Across-slope shape: Linear

Meets hydric soil criteria: Yes

456331—Butano shaly loam, very steep

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Elevation: 600 to 2,385 feet

Mean annual precipitation: 30 to 50 inches

Mean annual air temperature: 52 degrees F

Frost-free period: 250 to 350 days

Map Unit Composition

Butano and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Butano Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Hapludults

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 45 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: Southeast to northeast (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Siliceous shale

Restrictive feature(s): Lithic bedrock at a depth of 36 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 23 inches; channery loam

23 to 28 inches; channery clay loam

28 to 36 inches; channery silty clay loam

36 to 40 inches; weathered bedrock

Minor Components

Hugo soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Josephine soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456344—Coastal beaches

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 0 to 7 feet

Mean annual precipitation: 42 to 48 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 190 to 210 days

Map Unit Composition

Coastal beaches: 85 percent

Dissimilar minor components: 15 percent

Description of Coastal Beaches

Setting

Landform: Beaches

Slope range: 1 to 5 percent

Representative aspect: Southwest

Aspect range: South to west (clockwise)

Properties and Qualities

Runoff: Low

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Water table (depth, kind): At the soil surface, perched (see table 19)

Drainage class: Poorly drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Moderately saline (about 10.0 mmhos/cm)

Sodicity maximum: Sodium adsorption ratio of 2.0

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 2.4 inches)

Minor Components

Active dune land

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Terrace escarpments

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456364—Denison clay loam, nearly level, imperfectly drained

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 299 feet

Mean annual precipitation: 25 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Denison and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Denison Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argixerolls

Setting

Landform: Terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 2 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southeast

Aspect range: North to southwest (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Water table (depth, kind): At the soil surface, perched (see table 19)

Drainage class: Somewhat poorly drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 11.4 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3w; irrigated areas—2w

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 10 inches; clay loam

10 to 45 inches; clay

45 to 61 inches; clay loam

61 to 70 inches; loam

Minor Components

Elkhorn soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Farallone soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent

Landform: Depressions

Meets hydric soil criteria: Yes

456365—Denison coarse sandy loam, nearly level

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 299 feet

Mean annual precipitation: 25 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Denison and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Denison Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argixerolls

Setting

Landform: Terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 1 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: South
Aspect range: Southeast to southwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 11.1 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3s; irrigated areas—2s
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 10 inches; coarse sandy loam
10 to 20 inches; clay loam
20 to 55 inches; clay
55 to 71 inches; clay loam

Minor Components

Elkhorn soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Farallone soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456367—Denison loam, gently sloping

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 49.2 to 299 feet
Mean annual precipitation: 25 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 325 days

Map Unit Composition

Denison and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Denison Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argixerolls

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Slope range: 2 to 6 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: South
Aspect range: Southeast to southwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 11.2 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e; irrigated areas—2e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 15 inches; loam
15 to 45 inches; clay
45 to 60 inches; clay loam
60 to 70 inches; loam

Minor Components

Elkhorn soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Farallone soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456368—Denison loam, sloping

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 299 feet

Mean annual precipitation: 25 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Denison and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Denison Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argixerolls

Setting

Landform: Terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 6 to 15 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: East

Aspect range: North to southeast (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 11.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 15 inches; loam

15 to 45 inches; clay

45 to 60 inches; clay loam

60 to 70 inches; loam

Minor Components

Elkhorn soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Farallone soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456376—Elkhorn sandy loam, gently sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 2,385 feet

Mean annual precipitation: 14 to 22 inches

Mean annual air temperature: 57 degrees F

Frost-free period: 270 days

Map Unit Composition

Elkhorn and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Elkhorn Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Argixerolls

Setting

Landform: Terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 2 to 5 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: West

Aspect range: Southwest to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Low

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 8.5 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e; irrigated areas—2e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 25 inches; sandy loam

25 to 60 inches; sandy clay loam

Minor Components

Baywood soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Denison soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Tierra soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456377—Elkhorn sandy loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 2,385 feet

Mean annual precipitation: 14 to 22 inches

Mean annual air temperature: 57 degrees F

Frost-free period: 270 days

Map Unit Composition

Elkhorn and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Elkhorn Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Argixerolls

Setting

Landform: Terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 5 to 11 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest

Aspect range: South to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 8.5 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e; irrigated areas—2e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 25 inches; sandy loam
25 to 60 inches; sandy clay loam

Minor Components

Baywood soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Denison soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Tierra soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456379—Elkhorn sandy loam, moderately steep and steep, severely eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 57 degrees F
Frost-free period: 270 days

Map Unit Composition

Elkhorn and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Elkhorn Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Argixerolls

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 11 to 41 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 8.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 20 inches; sandy loam

20 to 60 inches; sandy clay loam

Minor Components

Denison soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Gullied land

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Tierra soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456382—Farallone loam, nearly level

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 200 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans

Landform position (two-dimensional): Backslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 1 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very low

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3c; irrigated areas—1

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 20 inches; loam

20 to 48 inches; sandy loam

48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Denison soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent

Landform: Depressions
Meets hydric soil criteria: Yes

456383—Farallone loam, gently sloping

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 49.2 to 200 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans
Landform position (two-dimensional): Backslope and toeslope
Landform position (three-dimensional): Tread
Slope range: 1 to 4 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: West
Aspect range: South to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very low
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e; irrigated areas—2e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 20 inches; loam
20 to 48 inches; sandy loam
48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Dennison soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456384—Farallone coarse sandy loam, nearly level

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 200 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans

Landform position (two-dimensional): Backslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 0 to 1 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very low

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 6.6 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3s; irrigated areas—2s

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 20 inches; coarse sandy loam

20 to 48 inches; sandy loam

48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Denison soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456385—Farallone coarse sandy loam, gently sloping

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 200 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans

Landform position (two-dimensional): Backslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 1 to 4 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: South

Aspect range: Southeast to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very low

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.6 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e; irrigated areas—2e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 20 inches; coarse sandy loam
20 to 48 inches; sandy loam
48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Denison soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456386—Farallone coarse sandy loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 49.2 to 200 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans
Landform position (two-dimensional): Backslope and toeslope
Landform position (three-dimensional): Tread
Slope range: 4 to 10 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Low
Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 15 inches; coarse sandy loam
15 to 48 inches; sandy loam
48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Denison soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent
Landform: Depressions
Meets hydric soil criteria: Yes

**456387—Farallone coarse sandy loam, moderately steep,
eroded**

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 49.2 to 200 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans
Landform position (two-dimensional): Backslope and toeslope
Landform position (three-dimensional): Tread
Slope range: 10 to 20 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: South
Aspect range: Northeast to west (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Low
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 15 inches; coarse sandy loam
15 to 48 inches; sandy loam
48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Denison soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456388—Farallone coarse sandy loam, over coarse sands, gently sloping, seeped

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 49.2 to 200 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans
Landform position (two-dimensional): Backslope and toeslope
Landform position (three-dimensional): Tread
Slope range: 1 to 4 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very low
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.1 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e; irrigated areas—2e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 20 inches; coarse sandy loam
20 to 30 inches; sandy loam
30 to 60 inches; gravelly coarse sand

Minor Components

Denison soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 4 percent
Landform: Flood plains
Geomorphic position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Meets hydric soil criteria: Yes

Unnamed soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

456390—Farallone loamy coarse sand, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 49.2 to 200 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 325 days

Map Unit Composition

Farallone and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Farallone Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Fluventic Haploxerolls

Setting

Landform: Flood plains and alluvial fans

Landform position (two-dimensional): Backslope and toeslope

Landform position (three-dimensional): Tread

Slope range: 5 to 10 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: South

Aspect range: Northeast to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Low

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 15 inches; loamy coarse sand

15 to 48 inches; sandy loam
48 to 60 inches; stratified coarse sandy loam to sandy loam

Minor Components

Denison soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Miramar soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456394—Gazos loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 15 to 30 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 200 to 300 days

Map Unit Composition

Gazos and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Gazos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 9 to 11 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: North
Aspect range: West to northeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 25 to 29 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam

12 to 25 inches; silt loam

25 to 29 inches; unweathered bedrock

Minor Components

Calera soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Lobitos soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456397—Gazos loam, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 2,385 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 200 to 300 days

Map Unit Composition

Gazos and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Gazos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 21 to 40 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 25 to 29 inches

Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam
12 to 25 inches; silt loam
25 to 29 inches; unweathered bedrock

Minor Components

Calera soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Lobitos soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456398—Gazos loam, very steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 15 to 30 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 200 to 300 days

Map Unit Composition

Gazos and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Gazos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 40 to 75 percent
Down-slope shape: Concave

Across-slope shape: Convex
Representative aspect: North
Aspect range: South to southeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 25 to 29 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam
12 to 25 inches; silt loam
25 to 29 inches; unweathered bedrock

Minor Components

Calera soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Lobitos soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

**456399—Gazos (dark phase)-Calera loams, sloping,
eroded**

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 15 to 30 inches
Mean annual air temperature: 54 to 63 degrees F
Frost-free period: 200 to 325 days

Map Unit Composition

Gazos (dark phase) and similar soils: 60 percent

Calera and similar soils: 20 percent
Dissimilar minor components: 20 percent

Description of Gazos Soil (Dark Phase)

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 9 to 16 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: East
Aspect range: Northwest to southwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 24 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam
12 to 24 inches; silt loam
24 to 28 inches; unweathered bedrock

Description of Calera Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 7 to 16 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: East
Aspect range: Northwest to southwest (clockwise)

Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from limestone
Restrictive feature(s): Lithic bedrock at a depth of 30 to 34 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 10 inches; loam
10 to 30 inches; clay loam
30 to 34 inches; unweathered bedrock

Minor Components

Lobitos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

456400—Gazos (dark phase)-Calera loams, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 15 to 30 inches
Mean annual air temperature: 54 to 63 degrees F
Frost-free period: 200 to 325 days

Map Unit Composition

Gazos (dark phase) and similar soils: 40 percent
Calera and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Gazos Soil (Dark Phase)

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 31 to 45 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 24 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam
12 to 24 inches; silt loam
24 to 28 inches; unweathered bedrock

Description of Calera Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 31 to 45 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from limestone
Restrictive feature(s): Lithic bedrock at a depth of 30 to 34 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches

Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 10 inches; loam
10 to 30 inches; clay loam
30 to 34 inches; unweathered bedrock

Minor Components

Lobitos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

456401—Gazos (dark phase)-Calera loams, very steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 15 to 30 inches
Mean annual air temperature: 54 to 63 degrees F
Frost-free period: 200 to 325 days

Map Unit Composition

Gazos (dark phase) and similar soils: 40 percent
Calera and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Gazos Soil (Dark Phase)

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 45 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)

Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 24 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam
12 to 24 inches; silt loam
24 to 28 inches; unweathered bedrock

Description of Calera Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 45 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from limestone
Restrictive feature(s): Lithic bedrock at a depth of 30 to 34 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 10 inches; loam

10 to 30 inches; clay loam

30 to 34 inches; unweathered bedrock

Minor Components

Lobitos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

456403—Gazos (dark phase)-Sweeney loams, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 2,500 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 200 to 300 days

Map Unit Composition

Gazos (dark phase) and similar soils: 40 percent

Sweeney and similar soils: 40 percent

Dissimilar minor components: 20 percent

Description of Gazos Soil (Dark Phase)

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 16 to 45 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southeast

Aspect range: North to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum derived from shale

Restrictive feature(s): Lithic bedrock at a depth of 24 to 28 inches

Frequency of flooding: None

Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 12 inches; loam
12 to 24 inches; silt loam
24 to 28 inches; unweathered bedrock

Description of Sweeney Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 16 to 45 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southeast
Aspect range: North to southwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum derived from diabase and basalt
Restrictive feature(s): Paralithic bedrock at a depth of 50 to 54 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 7 inches; loam

7 to 22 inches; clay loam
22 to 50 inches; fine sandy loam
50 to 54 inches; weathered bedrock

Minor Components

Calera soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Lobitos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

456404—Gazos-Lobitos silt loams, gently sloping

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 2,385 feet
Mean annual precipitation: 15 to 30 inches
Mean annual air temperature: 55 to 63 degrees F
Frost-free period: 200 to 300 days

Map Unit Composition

Gazos and similar soils: 40 percent
Lobitos and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Gazos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 5 to 6 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: West
Aspect range: South to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 28 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 16 inches; silt loam
16 to 28 inches; silt loam
28 to 32 inches; unweathered bedrock

Description of Lobitos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 5 to 6 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: West
Aspect range: South to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Shale
Restrictive feature(s): Lithic bedrock at a depth of 38 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 22 inches; silt loam
22 to 33 inches; channery clay loam
33 to 38 inches; channery loam
38 to 42 inches; unweathered bedrock

Minor Components

Calera soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

456405—Gazos-Lobitos silt loams, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 2,385 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 55 to 63 degrees F

Frost-free period: 200 to 300 days

Map Unit Composition

Gazos and similar soils: 40 percent

Lobitos and similar soils: 40 percent

Dissimilar minor components: 20 percent

Description of Gazos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 6 to 15 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: South to northeast (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 24 to 28 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 12 inches; silt loam

12 to 24 inches; silt loam

24 to 28 inches; unweathered bedrock

Description of Lobitos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 6 to 15 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: South to northeast (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 34 to 38 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 18 inches; silt loam

18 to 29 inches; channery clay loam

29 to 34 inches; channery loam

34 to 38 inches; unweathered bedrock

Minor Components

Calera soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

456406—Gazos-Lobitos silt loams, moderately steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 2,385 feet

Mean annual precipitation: 15 to 30 inches

Mean annual air temperature: 55 to 63 degrees F

Frost-free period: 200 to 300 days

Map Unit Composition

Gazos and similar soils: 40 percent

Lobitos and similar soils: 40 percent

Dissimilar minor components: 20 percent

Description of Gazos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: South to north (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 24 to 28 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 12 inches; silt loam

12 to 24 inches; silt loam

24 to 28 inches; unweathered bedrock

Description of Lobitos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: South to north (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 34 to 38 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 18 inches; silt loam

18 to 29 inches; channery clay loam

29 to 34 inches; channery loam

34 to 38 inches; unweathered bedrock

Minor Components

Calera soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

456412—Gullied land (alluvial soil material)

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Map Unit Composition

Gullied land: 85 percent

Dissimilar minor components: 15 percent

Description of Gullied Land

Setting

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Slope range: 2 to 15 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Properties and Qualities

Runoff: Very high

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Depth to water table: More than 72 inches

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Landform: Draws

Meets hydric soil criteria: Yes

Botella soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Farallone soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Soquel soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

456414—Gullied land (Tierra and Watsonville soil materials)

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Map Unit Composition

Gullied land: 85 percent
Dissimilar minor components: 15 percent

Description of Gullied Land

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Slope range: 0 to 9 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: South
Aspect range: East to west (clockwise)

Properties and Qualities

Runoff: Very high
Parent material: Alluvium derived from sedimentary rock
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Depth to water table: More than 72 inches
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0

Minor Components

Tierra soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Watsonville soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456416—Hugo and Josephine loams, moderately steep

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt
Elevation: 495 to 2,385 feet
Mean annual precipitation: 30 to 70 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 100 to 300 days

Map Unit Composition

Hugo and similar soils: 40 percent
Josephine and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Hugo Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Dystric Xerochrepts

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: Southeast to north (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 45 to 49 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 8 inches; loam

8 to 45 inches; gravelly loam

45 to 49 inches; weathered bedrock

Description of Josephine Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerults

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: Southeast to north (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high
Parent material: Sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 47 to 51 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 8.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 12 inches; loam
12 to 47 inches; clay loam
47 to 51 inches; weathered bedrock

Minor Components

Laughlin soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Los Gatos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

456418—Hugo and Josephine loams, steep

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt
Elevation: 495 to 2,385 feet
Mean annual precipitation: 30 to 70 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 100 to 300 days

Map Unit Composition

Hugo and similar soils: 40 percent
Josephine and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Hugo Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Dystric Xerochrepts

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank

Slope range: 30 to 45 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: West
Aspect range: Southeast to northeast (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 45 to 49 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 8 inches; loam
8 to 45 inches; gravelly loam
45 to 49 inches; weathered bedrock

Description of Josephine Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerults

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 45 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: West
Aspect range: Southeast to northeast (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high
Parent material: Sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 47 to 51 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 8.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 12 inches; loam
12 to 47 inches; clay loam
47 to 51 inches; weathered bedrock

Minor Components

Laughlin soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Los Gatos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

456420—Hugo and Josephine loams, very steep

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt
Elevation: 495 to 2,385 feet
Mean annual precipitation: 30 to 70 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 100 to 300 days

Map Unit Composition

Hugo and similar soils: 40 percent
Josephine and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Hugo Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Dystric Xerochrepts

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 45 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 45 to 49 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 8 inches; loam
8 to 45 inches; gravelly loam
45 to 49 inches; weathered bedrock

Description of Josephine Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerults

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 45 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high
Parent material: Sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 47 to 51 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 8.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 12 inches; loam

12 to 47 inches; clay loam

47 to 51 inches; weathered bedrock

Minor Components

Laughlin soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Los Gatos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

**456423—Hugo and Josephine sandy loams, sloping,
eroded**

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Elevation: 495 to 2,385 feet

Mean annual precipitation: 30 to 70 inches

Mean annual air temperature: 45 to 57 degrees F

Frost-free period: 100 to 300 days

Map Unit Composition

Hugo and similar soils: 40 percent

Josephine and similar soils: 40 percent

Dissimilar minor components: 20 percent

Description of Hugo Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Dystric Xerochrepts

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 5 to 11 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: South to northeast (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Low

Parent material: Sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 41 to 45 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 4 inches; sandy loam
4 to 41 inches; gravelly sandy loam
41 to 45 inches; weathered bedrock

Description of Josephine Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerults

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 5 to 11 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: South to northeast (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 43 to 47 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 8 inches; sandy loam
8 to 43 inches; loam
43 to 47 inches; weathered bedrock

Minor Components

Laughlin soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Los Gatos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

456444—Lobitos loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 1,000 feet

Mean annual precipitation: 30 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 270 to 300 days

Map Unit Composition

Lobitos and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Lobitos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 7 to 16 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: South to north (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 34 to 38 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 18 inches; loam

18 to 29 inches; channery clay loam

29 to 34 inches; channery loam

34 to 38 inches; unweathered bedrock

Minor Components

Gazos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Pomponio soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456445—Lobitos loam, moderately steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 1,000 feet

Mean annual precipitation: 30 inches

Mean annual air temperature: 55 degrees F

Frost-free period: 270 to 300 days

Map Unit Composition

Lobitos and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Lobitos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 16 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: Southeast to north (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 34 to 38 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 18 inches; loam
18 to 29 inches; channery clay loam
29 to 34 inches; channery loam
34 to 38 inches; unweathered bedrock

Minor Components

Gazos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Pomponio soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456446—Lobitos loam, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 1,000 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 270 to 300 days

Map Unit Composition

Lobitos and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Lobitos Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Argixerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 41 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Shale

Restrictive feature(s): Lithic bedrock at a depth of 34 to 38 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Typical Profile

0 to 18 inches; loam

18 to 29 inches; channery clay loam

29 to 34 inches; channery loam

34 to 38 inches; unweathered bedrock

Minor Components

Gazos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Pomponio soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456460—Mixed alluvial land

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Mean annual precipitation: 14 inches

Mean annual air temperature: 61 degrees F

Map Unit Composition

Mixed alluvial land: 90 percent

Dissimilar minor components: 10 percent

Description of Mixed Alluvial Land

Classification

Soil taxonomic classification: Xerofluvents

Setting

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Slope range: 0 to 5 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest
Aspect range: East to northwest (clockwise)

Properties and Qualities

Runoff: Low
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Nonsaline (about 1.0 mmho/cm)
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.1 inches)

Minor Components

Terrace escarpments

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 5 percent
Landform: Draws
Meets hydric soil criteria: Yes

456464—Miramar coarse sandy loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 2,000 feet
Mean annual precipitation: 0 to 45 inches
Mean annual air temperature: 54 to 55 degrees F
Frost-free period: 275 to 350 days

Map Unit Composition

Miramar and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Miramar Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 9 to 11 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: South
Aspect range: Northeast to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Quartz-diorite

Restrictive feature(s): Paralitric bedrock at a depth of 37 to 41 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 22 inches; coarse sandy loam

22 to 37 inches; sandy clay loam

37 to 41 inches; weathered bedrock

Minor Components

Sheridan soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Gullied land

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456465—Miramar coarse sandy loam, moderately steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 2,000 feet

Mean annual precipitation: 0 to 45 inches

Mean annual air temperature: 54 to 55 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Miramar and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Miramar Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 11 to 21 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: Northeast to west (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Quartz-diorite

Restrictive feature(s): Paralithic bedrock at a depth of 37 to 41 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 22 inches; coarse sandy loam

22 to 37 inches; sandy clay loam

37 to 41 inches; weathered bedrock

Minor Components

Sheridan soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Gullied land

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456466—Miramar coarse sandy loam, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 2,000 feet

Mean annual precipitation: 0 to 45 inches

Mean annual air temperature: 54 to 55 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Miramar and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Miramar Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 21 to 40 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southeast

Aspect range: North to west (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Quartz-diorite

Restrictive feature(s): Paralithic bedrock at a depth of 37 to 41 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 22 inches; coarse sandy loam

22 to 37 inches; sandy clay loam

37 to 41 inches; weathered bedrock

Minor Components

Sheridan soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Gullied land

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456467—Miramar coarse sandy loam, steep, severely eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 2,000 feet

Soil Survey of Golden Gate National Recreation Area, California

Mean annual precipitation: 0 to 45 inches
Mean annual air temperature: 54 to 55 degrees F
Frost-free period: 275 to 350 days

Map Unit Composition

Miramar and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Miramar Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic Argiustolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 21 to 40 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southeast
Aspect range: Northwest to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Quartz-diorite
Restrictive feature(s): Paralithic bedrock at a depth of 33 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 18 inches; coarse sandy loam
18 to 33 inches; sandy clay loam
33 to 37 inches; weathered bedrock

Minor Components

Sheridan soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Gullied land

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456468—Miramar coarse sandy loam, very steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 2,000 feet

Mean annual precipitation: 0 to 45 inches

Mean annual air temperature: 54 to 55 degrees F

Frost-free period: 275 to 350 days

Map Unit Composition

Miramar and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Miramar Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, isomesic Pachic
Argiustolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 41 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: Northeast to northwest (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Quartz-diorite

Restrictive feature(s): Paralithic bedrock at a depth of 37 to 41 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: B

Typical Profile

0 to 22 inches; coarse sandy loam

22 to 37 inches; sandy clay loam

37 to 41 inches; weathered bedrock

Minor Components

Sheridan soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Gullied land

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456469—Montara stony loam, steep and very steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 95 to 2,385 feet

Mean annual precipitation: 12 to 50 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 175 to 350 days

Map Unit Composition

Montara and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Montara Soil

Classification

Soil taxonomic classification: Loamy, magnesian, thermic Lithic Haploxerolls

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountain flank

Slope range: 21 to 40 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: Southeast to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Serpentine

Restrictive feature(s): Lithic bedrock at a depth of 15 to 19 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 6 inches; stony loam

6 to 15 inches; stony clay loam

15 to 19 inches; unweathered bedrock

Minor Components

Gazos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Sweeney soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456475—Rough broken land

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 645 to 2,385 feet

Mean annual precipitation: 8 to 15 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 110 to 300 days

Map Unit Composition

Rough broken land: 50 percent

Lithic Xerorthents and similar soils: 35 percent

Dissimilar minor components: 15 percent

Description of Rough Broken Land

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Slope range: 41 to 75 percent

Representative aspect: South

Aspect range: East to west (clockwise)

Properties and Qualities

Runoff: Very high

Parent material: Basalt, sandstone, shale, and granite

Restrictive feature(s): Paralithic bedrock at a depth of 0 to 10 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Excessively drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Description of Lithic Xerorthents

Classification

Soil taxonomic classification: Lithic Xerorthents

Setting

Landscape: Uplands

Slope range: 41 to 75 percent

Representative aspect: South

Aspect range: East to west (clockwise)

Properties and Qualities

Runoff: Very high

Parent material: Residuum

Restrictive feature(s): Lithic bedrock at a depth of 0 to 4 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Excessively drained

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Interpretive Groups

Land capability subclass (nonirrigated): 8s

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 4 inches; unweathered bedrock

Minor Components

Gazos soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Lobitos soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

456485—Stabilized dune land

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Frost-free period: 275 to 350 days

Map Unit Composition

Stabilized dune land: 90 percent

Dissimilar minor components: 10 percent

Description of Stabilized Dune Land

Setting

Landform: Dunes

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Slope range: 5 to 50 percent

Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: South to west (clockwise)

Properties and Qualities

Runoff: Very low
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 2.5 inches)

Minor Components

Active dune land

Percent of map unit: 10 percent
Meets hydric soil criteria: No

456486—Sheridan coarse sandy loam, moderately steep

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 1,000 to 2,385 feet
Mean annual precipitation: 16 to 50 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 170 to 250 days

Map Unit Composition

Sheridan and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Sheridan Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 11 to 15 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: West
Aspect range: East to northeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Low

Parent material: Quartz-diorite
Restrictive feature(s): Paralithic bedrock at a depth of 38 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 5 inches; gravelly coarse sandy loam
5 to 38 inches; gravelly coarse sandy loam
38 to 42 inches; weathered bedrock

Minor Components

Miramar soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Montara soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456487—Sheridan coarse sandy loam, steep

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 1,000 to 2,385 feet
Mean annual precipitation: 16 to 50 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 170 to 250 days

Map Unit Composition

Sheridan and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Sheridan Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 20 to 30 percent
Down-slope shape: Concave
Across-slope shape: Convex

Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium
Parent material: Quartz-diorite
Restrictive feature(s): Paralithic bedrock at a depth of 38 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 5 inches; gravelly coarse sandy loam
5 to 38 inches; gravelly coarse sandy loam
38 to 42 inches; weathered bedrock

Minor Components

Miramar soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Montara soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456488—Sheridan coarse sandy loam, very steep

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 1,000 to 2,385 feet
Mean annual precipitation: 16 to 50 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 170 to 250 days

Map Unit Composition

Sheridan and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Sheridan Soil

Classification

Soil taxonomic classification: Coarse-loamy, mixed, thermic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 40 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium
Parent material: Quartz-diorite
Restrictive feature(s): Paralitich bedrock at a depth of 38 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 5 inches; gravelly coarse sandy loam
5 to 38 inches; gravelly coarse sandy loam
38 to 42 inches; weathered bedrock

Minor Components

Miramar soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Montara soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456494—Soquel loam, gently sloping, poorly drained

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 19.7 to 1,001 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 57 degrees F
Frost-free period: 220 to 275 days

Map Unit Composition

Soquel and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Soquel Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Cumulic Haploxerolls

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Slope range: 3 to 6 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: South to southwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Water table (depth, kind): At the soil surface, perched (see table 19)
Drainage class: Poorly drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 10.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3w
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 30 inches; loam
30 to 60 inches; silt loam
60 to 70 inches; loam

Minor Components

Corralitos soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Farallone soils

Percent of map unit: 4 percent
Geomorphic position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent

Landform: Alluvial fans
Geomorphic position (two-dimensional): Backslope
Geomorphic position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Meets hydric soil criteria: Yes

456506—Sweeney loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 2,385 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 57 degrees F
Frost-free period: 250 to 300 days

Map Unit Composition

Sweeney and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Sweeney Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 7 to 15 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southeast
Aspect range: North to southwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum derived from diabase and basalt
Restrictive feature(s): Paralitric bedrock at a depth of 50 to 54 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 7 inches; loam
7 to 22 inches; sandy clay loam
22 to 50 inches; fine sandy loam
50 to 54 inches; weathered bedrock

Minor Components

Butano soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Mindego soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Santa Lucia soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

456511—Sweeney stony clay loam, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 200 to 2,385 feet
Mean annual precipitation: 8 to 30 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 110 to 300 days

Map Unit Composition

Sweeney and similar soils: 75 percent
Dissimilar minor components: 25 percent

Description of Sweeney Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Pachic Haploxerolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 45 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum derived from diabase and basalt
Restrictive feature(s): Paralithic bedrock at a depth of 50 to 54 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches

Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Typical Profile

0 to 7 inches; stony clay loam
7 to 22 inches; gravelly sandy clay loam
22 to 50 inches; gravelly fine sandy loam
50 to 54 inches; weathered bedrock

Minor Components

Butano soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 10 percent
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Slope range: 30 to 45 percent
Meets hydric soil criteria: No

Mindego soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent
Landform: Valley sides
Meets hydric soil criteria: Yes

456517—Tierra loam, sloping, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 95 to 1,095 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 57 to 59 degrees F
Frost-free period: 200 to 300 days

Map Unit Composition

Tierra and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Tierra Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Mollic Palexeralfs

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 5 to 11 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 17 inches; loam

17 to 37 inches; clay

37 to 60 inches; sandy clay loam

Minor Components

Colma soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Santa Lucia soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 2 percent

Landform: Swales

Meets hydric soil criteria: Yes

456518—Tierra loam, moderately steep, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 95 to 1,095 feet

Mean annual precipitation: 14 to 25 inches

Mean annual air temperature: 57 to 59 degrees F

Frost-free period: 200 to 300 days

Map Unit Composition

Tierra and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Tierra Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Mollic Palexeralfs

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 11 to 21 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 4e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 17 inches; loam

17 to 37 inches; clay

37 to 60 inches; sandy clay loam

Minor Components

Colma soils

Percent of map unit: 10 percent

Meets hydric soil criteria: No

Santa Lucia soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 2 percent

Landform: Swales

Meets hydric soil criteria: Yes

456519—Tierra loam, moderately steep, severely eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 95 to 1,095 feet

Mean annual precipitation: 14 to 25 inches

Mean annual air temperature: 57 to 59 degrees F

Frost-free period: 200 to 300 days

Map Unit Composition

Tierra and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Tierra Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Mollic Palexeralfs

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 11 to 21 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 13 inches; loam

13 to 33 inches; clay
33 to 60 inches; sandy clay loam

Minor Components

Gullied land

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Santa Lucia soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent
Landform: Swales
Meets hydric soil criteria: Yes

456520—Tierra loam, steep, eroded

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 95 to 1,095 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 57 to 59 degrees F
Frost-free period: 200 to 300 days

Map Unit Composition

Tierra and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Tierra Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Mollic Palexeraalfs

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Crest and side slope
Slope range: 21 to 41 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high
Parent material: Alluvium
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 17 inches; loam
17 to 37 inches; clay
37 to 60 inches; sandy clay loam

Minor Components

Colma soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Santa Lucia soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

459393—Ballard gravelly loam, 2 to 9 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 9.8 to 299 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 230 to 300 days

Map Unit Composition

Ballard and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Ballard Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Argixerolls

Setting

Landscape: River valleys
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Slope range: 2 to 9 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium

Parent material: Alluvium derived from shale, sandstone, and/or granite

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 9.1 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e-4; irrigated areas—2e-4

Meets hydric soil criteria: No

Hydrologic soil group: B

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, red brome, stork's bill, foxtail fescue, foxtail barley, burclover, and needlegrass

Typical Profile

0 to 19 inches; gravelly loam

19 to 65 inches; gravelly clay loam

Minor Components

Clear Lake soils

Percent of map unit: 5 percent

Landform: Depressions

Geomorphic position (two-dimensional): Backslope

Meets hydric soil criteria: Yes

Cortina soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

459395—Barnabe very gravelly loam, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,699 feet

Mean annual precipitation: 30 to 50 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 275 to 360 days

Map Unit Composition

Barnabe and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and/or chert

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam

8 to 16 inches; very gravelly loam

16 to 20 inches; bedrock

Minor Components

Cronkhite soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459396—Beaches

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Map Unit Composition

Beaches: 100 percent

Description of Beaches

Setting

Landscape: Fluviomarine terraces

Landform: Beaches

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 0 to 5 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Properties and Qualities

Parent material: Beach sand derived from igneous and metamorphic rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

459397—Blucher-Cole complex, 2 to 5 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 0 to 499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 57 to 61 degrees F

Frost-free period: 210 to 290 days

Map Unit Composition

Blucher and similar soils: 40 percent

Cole and similar soils: 30 percent

Dissimilar minor components: 30 percent

Description of Blucher Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Fluvaquentic Haploxerolls

Setting

Landscape: Basin floors
Landform: Alluvial fans and basin floors
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Slope range: 2 to 5 percent
Down-slope shape: Linear and concave
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: All aspects
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium
Parent material: Alluvium derived from sandstone, granite, or shale
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Water table (depth, kind): At the soil surface, perched (see table 19)
Drainage class: Somewhat poorly drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Nonsaline (about 1.0 mmho/cm)
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 10.4 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3w-2; irrigated areas—2w-2
Meets hydric soil criteria: Yes
Hydrologic soil group: C

Vegetation

Existing plants: Soft chess, ripgut brome, blue wildrye, fescue, velvetgrass, rush, Italian ryegrass, and poison oak

Typical Profile

0 to 7 inches; silt loam
7 to 23 inches; silt loam
23 to 60 inches; clay loam

Description of Cole Soil

Classification

Soil taxonomic classification: Fine, mixed, thermic Pachic Argixerolls

Setting

Landscape: Basin floors
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope and tread
Slope range: 2 to 5 percent
Down-slope shape: Concave
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: All aspects

Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Alluvium derived from shale, sandstone, or granite
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Water table (depth, kind): At the soil surface, perched (see table 19)
Drainage class: Somewhat poorly drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Nonsaline (about 1.0 mmho/cm)
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 9.1 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3w-2
Meets hydric soil criteria: Yes
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, beardless wildrye, stork's bill, foxtail fescue, leporinum barley, Baltic rush, Italian ryegrass, burclover, narrowleaf plantain, and dock

Typical Profile

0 to 5 inches; clay loam
5 to 14 inches; silty clay loam
14 to 60 inches; silty clay

Minor Components

Clear Lake soils

Percent of map unit: 10 percent
Landform: Depressions
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

Cortina soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Soils with slopes of less than 2 percent

Percent of map unit: 10 percent
Meets hydric soil criteria: No

459398—Bonnydoon gravelly loam, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 1,499 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 270 to 320 days

Map Unit Composition

Bonnydoon and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone

Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 15 inches; gravelly loam

15 to 19 inches; weathered bedrock

Minor Components

Unnamed shallow soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Felton variant soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soulajule soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459399—Bonnydoon gravelly loam, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 59 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Bonnydoon and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 75 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from shale or sandstone

Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 15 inches; gravelly loam
15 to 19 inches; weathered bedrock

Minor Components

Unnamed shallow soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Felton variant soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soulajule soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459402—Centissima-Barnabe complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 495 to 1,695 feet

Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 365 days

Map Unit Composition

Centissima and similar soils: 50 percent
Barnabe and similar soils: 20 percent
Dissimilar minor components: 22 percent

Description of Centissima Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, active, isomesic Humic Dystrustepts

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 30 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: South to northeast (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Madrone, blueblossom, poison hemlock, hazel, swordfern, strawberry, salal, western brackenfern, cascara buckthorn, blackberry, redwood, trillium, and blueberry

Typical Profile

0 to 15 inches; loam
15 to 22 inches; loam
22 to 33 inches; gravelly clay loam
33 to 37 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Northeast

Aspect range: South to northeast (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and/or chert

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam

8 to 16 inches; very gravelly loam

16 to 20 inches; bedrock

Minor Components

Soils with slopes of less than 15 percent

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Dipsea soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459403—Centissima-Barnabe complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 495 to 1,695 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 275 to 365 days

Map Unit Composition

Centissima and similar soils: 50 percent

Barnabe and similar soils: 20 percent

Dissimilar minor components: 30 percent

Description of Centissima Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, active, isomesic Humic Dystrustepts

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Northwest

Aspect range: Southwest to northeast (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: B

Vegetation

Existing plants: Madrone, blueblossom, poison hemlock, hazel, swordfern, strawberry, salal, western brackenfern, cascara buckthorn, blackberry, redwood, trillium, and blueberry

Typical Profile

0 to 15 inches; loam

15 to 22 inches; loam

22 to 33 inches; gravelly clay loam

33 to 37 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: Southwest to northeast (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and/or chert

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam

8 to 16 inches; very gravelly loam

16 to 20 inches; bedrock

Minor Components

Soils with slopes of less than 30 percent

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Cronkhite soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Dipsea soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Maymen variant soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459404—Centissima-Barnabe complex, 50 to 75 percent slopes (fig. 2)

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 495 to 1,695 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 275 to 365 days

Map Unit Composition

Centissima and similar soils: 40 percent

Barnabe and similar soils: 20 percent

Dissimilar minor components: 40 percent



Figure 2.—An area of Centissima-Barnabe complex, 50 to 75 percent slopes, along the Ocean View Trail in Muir Woods National Monument.

Description of Centissima Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, active, isomesic Humic Dystrustepts

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Madrone, blueblossom, poison hemlock, hazel, swordfern, strawberry, salal, western brackenfern, cascara buckthorn, blackberry, redwood, trillium, and blueberry

Typical Profile

0 to 15 inches; loam
15 to 22 inches; loam
22 to 33 inches; gravelly clay loam
33 to 37 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam
8 to 16 inches; very gravelly loam
16 to 20 inches; bedrock

Minor Components

Dipsea soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 10 percent
Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

459406—Cortina gravelly sandy loam, 0 to 5 percent slopes

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys
Elevation: 26.2 to 299 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 300 to 325 days

Map Unit Composition

Cortina and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Cortina Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, nonacid, thermic Typic Xerofluvents

Setting

Landscape: Basin floors
Landform: Interior valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Slope range: 0 to 5 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: North to west (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very low
Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: Rare
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4s-4
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, longbeak stork's bill, redstem stork's bill, foxtail fescue, leporinum barley, Italian ryegrass, burclover, narrowleaf plantain, and dock

Typical Profile

0 to 10 inches; gravelly sandy loam
10 to 44 inches; stratified very gravelly loamy sand to very gravelly loam
44 to 60 inches; stratified very gravelly sand to very gravelly loamy sand

Minor Components

Unnamed soils

Percent of map unit: 7 percent
Meets hydric soil criteria: No

Ballard soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Clear Lake soils

Percent of map unit: 2 percent

Landform: Depressions

Geomorphic position (two-dimensional): Backslope

Meets hydric soil criteria: Yes

Unnamed soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459407—Cronkhite-Barnabe complex, 9 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 801 feet

Mean annual precipitation: 24 to 35 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 275 to 300 days

Map Unit Composition

Cronkhite and similar soils: 50 percent

Barnabe and similar soils: 30 percent

Dissimilar minor components: 20 percent

Description of Cronkhite Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argiustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 9 to 15 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-3
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, Scotch broom, California oatgrass, blue wildrye, lupine, plantain, blackberry, purple tussock grass, and poison oak

Typical Profile

0 to 15 inches; loam
15 to 26 inches; clay loam
26 to 45 inches; clay loam
45 to 55 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 9 to 15 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam

8 to 16 inches; very gravelly loam
16 to 20 inches; bedrock

Minor Components

Barnabe variant soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Soils with slopes of less than 9 percent

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Tamalpais soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459408—Cronkhite-Barnabe complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 801 feet
Mean annual precipitation: 24 to 35 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 275 to 300 days

Map Unit Composition

Cronkhite and similar soils: 50 percent
Barnabe and similar soils: 30 percent
Dissimilar minor components: 20 percent

Description of Cronkhite Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argiustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, Scotch broom, California oatgrass, blue wildrye, lupine, plantain, blackberry, purple tussock grass, and poison oak

Typical Profile

0 to 15 inches; loam
15 to 26 inches; clay loam
26 to 45 inches; clay loam
45 to 55 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 30 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam
8 to 16 inches; very gravelly loam
16 to 20 inches; bedrock

Minor Components

Centissima soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Dipsea soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Maymen variant soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459409—Cronkhite-Barnabe complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 801 feet

Mean annual precipitation: 24 to 35 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 275 to 300 days

Map Unit Composition

Cronkhite and similar soils: 40 percent

Barnabe and similar soils: 30 percent

Dissimilar minor components: 30 percent

Description of Cronkhite Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argiustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, Scotch broom, California oatgrass, blue wildrye, lupine, plantain, blackberry, purple tussock grass, and poison oak

Typical Profile

0 to 15 inches; loam
15 to 26 inches; clay loam
26 to 45 inches; clay loam
45 to 55 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam
8 to 16 inches; very gravelly loam
16 to 20 inches; bedrock

Minor Components

Centissima soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Dipsea soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 4 percent

Meets hydric soil criteria: No

Maymen variant soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459410—Cronkhite-Barnabe complex, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 801 feet

Mean annual precipitation: 24 to 35 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 275 to 300 days

Map Unit Composition

Cronkhite and similar soils: 40 percent

Barnabe and similar soils: 30 percent

Dissimilar minor components: 30 percent

Description of Cronkhite Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Pachic Argiustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, Scotch broom, California oatgrass, blue wildrye, lupine, plantain, blackberry, purple tussock grass, and poison oak

Typical Profile

0 to 15 inches; loam
15 to 26 inches; clay loam
26 to 45 inches; clay loam
45 to 55 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam
8 to 16 inches; very gravelly loam
16 to 20 inches; bedrock

Minor Components

Centissima soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Dipsea soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Maymen variant soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Soils with slopes of less than 50 percent

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459411—Dipsea-Barnabe very gravelly loams, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Elevation: 495 to 1,695 feet

Mean annual precipitation: 30 to 50 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 275 to 365 days

Map Unit Composition

Dipsea and similar soils: 50 percent

Barnabe and similar soils: 20 percent

Dissimilar minor components: 30 percent

Description of Dipsea Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, isomesic Typic Tropudalfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: North

Aspect range: West to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: B

Vegetation

Existing plants: Sedge, poison hemlock, salal, tanoak, ryegrass, woodsorrel, fern, western swordfern, buckthorn, trillium, and California huckleberry

Typical Profile

0 to 8 inches; very gravelly loam
8 to 25 inches; very gravelly clay loam
25 to 48 inches; very gravelly loam
48 to 52 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: North
Aspect range: West to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam
8 to 16 inches; very gravelly loam
16 to 20 inches; bedrock

Minor Components

Centissima soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Maymen variant soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459412—Dipsea-Barnabe very gravelly loams, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Elevation: 495 to 1,695 feet

Mean annual precipitation: 30 to 50 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 275 to 365 days

Map Unit Composition

Dipsea and similar soils: 50 percent

Barnabe and similar soils: 20 percent

Dissimilar minor components: 30 percent

Description of Dipsea Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, isomesic Typic Tropudalfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Sedge, poison hemlock, salal, tanoak, ryegrass, woodsorrel, fern, western swordfern, buckthorn, trillium, and California huckleberry

Typical Profile

0 to 8 inches; very gravelly loam
8 to 25 inches; very gravelly clay loam
25 to 48 inches; very gravelly loam
48 to 52 inches; weathered bedrock

Description of Barnabe Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 8 inches; very gravelly loam

8 to 16 inches; very gravelly loam

16 to 20 inches; bedrock

Minor Components

Centissima soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Maymen variant soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed moderately deep soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459414—Dune land

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 3.3 to 299 feet

Map Unit Composition

Dune land: 95 percent

Dissimilar minor components: 5 percent

Description of Dune Land

Setting

Landscape: Dune fields

Landform: Dunes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 5 to 30 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: West
Aspect range: South to northwest (clockwise)

Properties and Qualities

Runoff: Very low
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0

Minor Components

Unnamed soils

Percent of map unit: 5 percent
Landform: Basin floors
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

459415—Felton variant-Soulajule complex, 9 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 0 to 1,299 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 260 to 300 days

Map Unit Composition

Felton variant and similar soils: 40 percent
Soulajule and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Felton Variant Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Pachic Ultic Argixerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 9 to 15 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Southwest
Aspect range: Southeast to northwest (clockwise)

Soil Survey of Golden Gate National Recreation Area, California

Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-1
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, California oatgrass, foxtail fescue, rush, burclover, narrowleaf plantain, and needlegrass

Typical Profile

0 to 23 inches; loam
23 to 34 inches; clay loam
34 to 47 inches; clay
47 to 51 inches; weathered bedrock

Description of Soulajule Soil

Classification

Soil taxonomic classification: Clayey-skeletal, mixed, mesic Ultic Haploxeralfs

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 9 to 15 percent
Down-slope shape: Linear
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-1
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, sedge, blue wildrye, burclover, plantain, and needlegrass

Typical Profile

0 to 17 inches; clay loam
17 to 22 inches; gravelly clay
22 to 28 inches; very gravelly clay
28 to 32 inches; weathered bedrock

Minor Components

Soils with slopes of less than 9 percent

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent
Landform: Depressions
Meets hydric soil criteria: Yes

459416—Felton variant-Soulajule complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 0 to 1,299 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 260 to 300 days

Map Unit Composition

Felton variant and similar soils: 40 percent
Soulajule and similar soils: 40 percent
Dissimilar minor components: 20 percent

Description of Felton Variant Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Pachic Ultic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-1

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, California oatgrass, foxtail fescue, rush, burclover, narrowleaf plantain, and needlegrass

Typical Profile

0 to 23 inches; loam

23 to 34 inches; clay loam

34 to 47 inches; clay

47 to 51 inches; weathered bedrock

Description of Soulajule Soil

Classification

Soil taxonomic classification: Clayey-skeletal, mixed, mesic Ultic Haploxeralfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralitric bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-3

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, sedge, blue wildrye, burclover, plantain, and needlegrass

Typical Profile

0 to 17 inches; clay loam

17 to 22 inches; gravelly clay

22 to 28 inches; very gravelly clay

28 to 32 inches; weathered bedrock

Minor Components

Olompali soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed thermic soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459417—Felton variant-Soulajule complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 0 to 1,299 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 260 to 300 days

Map Unit Composition

Felton variant and similar soils: 50 percent

Soulajule and similar soils: 40 percent

Dissimilar minor components: 10 percent

Description of Felton Variant Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Pachic Ultic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Soil Survey of Golden Gate National Recreation Area, California

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, California oatgrass, foxtail fescue, rush, burclover, narrowleaf plantain, and needlegrass

Typical Profile

0 to 23 inches; loam

23 to 34 inches; clay loam

34 to 47 inches; clay

47 to 51 inches; weathered bedrock

Description of Soulajule Soil

Classification

Soil taxonomic classification: Clayey-skeletal, mixed, mesic Ultic Haploxeralfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralitric bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, sedge, blue wildrye, burclover, plantain, and needlegrass

Typical Profile

0 to 17 inches; clay loam
17 to 22 inches; gravelly clay
22 to 28 inches; very gravelly clay
28 to 32 inches; weathered bedrock

Minor Components

McMullin soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Olompali soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed thermic soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459418—Felton variant-Soulajule complex, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 0 to 1,299 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 260 to 300 days

Map Unit Composition

Felton variant and similar soils: 50 percent
Soulajule and similar soils: 40 percent
Dissimilar minor components: 10 percent

Description of Felton Variant Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Pachic Ultic Argixerolls

Setting

Landscape: Uplands

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Northwest
Aspect range: Southwest to northeast (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitric bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, coyotebrush, soft chess, California oatgrass, foxtail fescue, rush, burclover, narrowleaf plantain, and needlegrass

Typical Profile

0 to 23 inches; loam
23 to 34 inches; clay loam
34 to 47 inches; clay
47 to 51 inches; weathered bedrock

Description of Soulajule Soil

Classification

Soil taxonomic classification: Clayey-skeletal, mixed, mesic Ultic Haploxeralfs

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: Southwest to northeast (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, sedge, blue wildrye, burclover, plantain, and needlegrass

Typical Profile

0 to 17 inches; clay loam

17 to 22 inches; gravelly clay

22 to 28 inches; very gravelly clay

28 to 32 inches; weathered bedrock

Minor Components

Unnamed shallow soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Eroded areas

Percent of map unit: 2 percent

Meets hydric soil criteria: No

McMullin soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459419—Fluvents, channeled

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 95 to 1,495 feet

Map Unit Composition

Fluvents and similar soils: 100 percent

Description of Fluvents

Classification

Soil taxonomic classification: Fluvents

Setting

Landscape: River valleys

Landform: Flood plains

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 0 to 5 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southeast

Aspect range: Northeast to southwest (clockwise)

Properties and Qualities

Runoff: Low

Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 8w

Meets hydric soil criteria: Yes

Hydrologic soil group: A

Typical Profile

0 to 60 inches; stratified cobbly sand to silt loam

459420—Gilroy-Gilroy variant-Bonnydoon variant loams, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 95 to 1,495 feet

Mean annual precipitation: 16 to 35 inches

Mean annual air temperature: 59 to 63 degrees F

Frost-free period: 250 to 330 days

Map Unit Composition

Gilroy and similar soils: 35 percent

Gilroy variant and similar soils: 25 percent

Bonnydoon variant and similar soils: 20 percent

Dissimilar minor components: 18 percent

Description of Gilroy Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: Northwest to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from igneous and metamorphic rock

Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, red brome, blue wildrye, stork's bill, foxtail fescue, burclover, needlegrass, and clover

Typical Profile

0 to 12 inches; loam

12 to 21 inches; clay loam

21 to 30 inches; gravelly clay loam

30 to 34 inches; unweathered bedrock

Description of Gilroy Variant Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave
Representative aspect: South
Aspect range: Northwest to southwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from igneous and metamorphic rock
Restrictive feature(s): Lithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, longbeak stork's bill, croton, Italian ryegrass, burclover, and California live oak

Typical Profile

0 to 21 inches; loam
21 to 45 inches; gravelly clay loam
45 to 49 inches; unweathered bedrock

Description of Bonnydoon Variant Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic Lithic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: South
Aspect range: Northwest to southwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from igneous and metamorphic rock
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None

Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 2.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, longbeak stork's bill, leporinum barley, Italian ryegrass, burclover, and narrowleaf blue-eyed grass

Typical Profile

0 to 18 inches; loam
18 to 22 inches; unweathered bedrock

Minor Components

McMullin soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Montara soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459421—Henneke stony clay loam, 15 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 495 to 2,000 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 230 to 250 days

Map Unit Composition

Henneke and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Henneke Soil

Classification

Soil taxonomic classification: Clayey-skeletal, magnesian, thermic Lithic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Northeast

Aspect range: Northwest to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from serpentinite

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.0 inch)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Chamise, manzanita, wild oat, ceanothus, buckbrush, soap plant, MacNab's cypress, foxtail fescue, foothill pine, coastal sage scrub oak, leather oak, squirreltail, and purple tussock grass

Typical Profile

0 to 3 inches; stony clay loam

3 to 16 inches; very cobbly clay

16 to 20 inches; unweathered bedrock

Minor Components

Soils with slopes of more than 50 percent

Percent of map unit: 8 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 7 percent

Meets hydric soil criteria: No

459422—Humaquepts, seeped

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Map Unit Composition

Humaquepts and similar soils: 90 percent

Dissimilar minor components: 10 percent

Description of Humaquepts

Classification

Soil taxonomic classification: Humaquepts

Setting

Landscape: River valleys

Landform: Drainageways

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 0 to 5 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Properties and Qualities

Runoff: Very high

Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Water table (depth, kind): At the soil surface, perched (see table 19)

Drainage class: Poorly drained

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 9.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6w

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 5 inches; peat

5 to 60 inches; clay loam

Minor Components

Unnamed soils with surface layers of loamy sand

Percent of map unit: 10 percent

Meets hydric soil criteria: No

459423—Hydraquents, saline

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 0 to 33 feet

Map Unit Composition

Hydraquents and similar soils: 90 percent
Dissimilar minor components: 10 percent

Description of Hydraquents

Classification

Soil taxonomic classification: Hydraquents

Setting

Landscape: Estuaries
Landform: Tidal flats
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Slope range: 0 to 2 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: North
Aspect range: All aspects

Properties and Qualities

Runoff: High
Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: At the soil surface
Drainage class: Very poorly drained
Salinity maximum: Strongly saline (about 24.0 mmhos/cm)
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 8w
Meets hydric soil criteria: Yes
Hydrologic soil group: D

Typical Profile

0 to 60 inches; stratified peat, silt, and clay

Minor Components

Unnamed soils with sandy surface layers

Percent of map unit: 10 percent
Meets hydric soil criteria: No

459425—Inverness loam, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 245 to 1,200 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 300 to 365 days

Map Unit Composition

Inverness and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Inverness Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, active, isomesic Ultic Haplustalfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: South to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from quartz-diorite

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 8.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-1

Meets hydric soil criteria: No

Hydrologic soil group: B

Vegetation

Existing plants: Madrone, wild oat, California brome, ripgut brome, fescue, salal, huckleberry, common velvetgrass, rush, tanoak, monkeyflower, pine, western swordfern, oak, and blackberry

Typical Profile

0 to 22 inches; loam

22 to 36 inches; clay loam
36 to 60 inches; loam
60 to 64 inches; weathered bedrock

Minor Components

Bayview soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Pablo soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Palomarin soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Sheridan variant soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Wittenberg soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459427—Inverness loam, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 245 to 1,200 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 300 to 365 days

Map Unit Composition

Inverness and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Inverness Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, active, isomesic Ultic Haplustalfs

Setting

Landscape: Uplands
Landform: Hills

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from quartz-diorite
Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 8.6 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Madrone, wild oat, California brome, ripgut brome, fescue, salal, huckleberry, common velvetgrass, rush, tanoak, monkeyflower, pine, western swordfern, oak, and blackberry

Typical Profile

0 to 22 inches; loam
22 to 36 inches; clay loam
36 to 60 inches; loam
60 to 64 inches; weathered bedrock

Minor Components

Palomarin soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Sheridan variant soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 3 percent
Meets hydric soil criteria: No

Wittenberg soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

459432—Los Osos-Bonnydoon complex, 5 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 1,200 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 59 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Los Osos and similar soils: 60 percent

Bonnydoon and similar soils: 25 percent

Dissimilar minor components: 14 percent

Description of Los Osos Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 5 to 15 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-3

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, stork's bill, miniature lupine, burclover, blue oak, oak, purple tussock grass, and clover

Typical Profile

0 to 18 inches; loam

18 to 38 inches; clay

38 to 42 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 5 to 15 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from shale or sandstone

Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 15 inches; gravelly loam

15 to 19 inches; weathered bedrock

Minor Components

Saurin soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Yorkville soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Unnamed hydric soils

Percent of map unit: 1 percent

Landform: Depressions

Meets hydric soil criteria: Yes

459433—Los Osos-Bonnydoon complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 59 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Los Osos and similar soils: 60 percent

Bonnydoon and similar soils: 20 percent

Dissimilar minor components: 17 percent

Description of Los Osos Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 5.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-3
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, stork's bill, miniature lupine, burclover, blue oak, oak, purple tussock grass, and clover

Typical Profile

0 to 18 inches; loam
18 to 38 inches; clay
38 to 42 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 30 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from shale or sandstone
Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 15 inches; gravelly loam
15 to 19 inches; weathered bedrock

Minor Components

Saurin soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Yorkville soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed hydric soils

Percent of map unit: 1 percent
Landform: Depressions
Meets hydric soil criteria: Yes

459434—Los Osos-Bonnydoon complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 1,200 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 59 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Los Osos and similar soils: 60 percent

Bonnydoon and similar soils: 20 percent

Dissimilar minor components: 20 percent

Description of Los Osos Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, stork's bill, miniature lupine, burclover, blue oak, oak, purple tussock grass, and clover

Typical Profile

0 to 15 inches; loam

15 to 30 inches; clay

30 to 34 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from shale or sandstone

Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 11 inches; gravelly loam

11 to 15 inches; weathered bedrock

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Soils with slopes of more than 50 percent

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Yorkville soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

459436—Los Osos-Urban land-Bonnydoon complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 200 to 1,200 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Los Osos and similar soils: 40 percent

Urban land: 30 percent

Bonnydoon and similar soils: 20 percent

Dissimilar minor components: 8 percent

Description of Los Osos Soil

Classification

Soil taxonomic classification: Fine, smectitic, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Typical Profile

0 to 15 inches; loam
15 to 30 inches; clay
30 to 34 inches; weathered bedrock

Description of Urban Land

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)

Properties and Qualities

Runoff: Very high

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from shale or sandstone
Restrictive feature(s): Paralitich bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 11 inches; gravelly loam
11 to 15 inches; weathered bedrock

Minor Components

Henneke soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Xerorthents

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459437—Maymen-Maymen variant gravelly loams, 30 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 495 to 2,495 feet
Mean annual precipitation: 36 to 52 inches

Mean annual air temperature: 52 to 59 degrees F

Frost-free period: 250 to 300 days

Map Unit Composition

Maymen and similar soils: 50 percent

Maymen variant and similar soils: 20 percent

Dissimilar minor components: 28 percent

Description of Maymen Soil

Classification

Soil taxonomic classification: Loamy, mixed, mesic Dystric Lithic Xerochrepts

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 75 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Chamise, manzanita, ceanothus, and coastal sage scrub oak

Typical Profile

0 to 12 inches; gravelly loam

12 to 16 inches; unweathered bedrock

Description of Maymen Variant Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Typic Haploxerults

Setting

Landscape: Uplands

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 75 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Chamise, manzanita, ceanothus, and coastal sage scrub oak

Typical Profile

0 to 4 inches; gravelly loam
4 to 37 inches; gravelly clay
37 to 41 inches; unweathered bedrock

Minor Components

Centissima soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Dipsea soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Henneke soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459438—Montara clay loam, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 95 to 1,495 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 290 to 330 days

Map Unit Composition

Montara and similar soils: 85 percent

Dissimilar minor components: 10 percent

Description of Montara Soil

Classification

Soil taxonomic classification: Loamy, magnesian, thermic Lithic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from serpentinite

Restrictive feature(s): Lithic bedrock at a depth of 10 to 15 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 2.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Chamise, whiteleaf manzanita, soft chess, red brome, buckbrush, California yerba santa, foxtail fescue, foothill pine, squirreltail, and purple tussock grass

Typical Profile

0 to 13 inches; clay loam

13 to 17 inches; unweathered bedrock

Minor Components

Henneke soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed stony soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Yorkville soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459439—Novato clay

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Elevation: 0 to 10 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 59 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Novato and similar soils: 90 percent

Dissimilar minor components: 10 percent

Description of Novato Soil

Classification

Soil taxonomic classification: Fine, mixed, nonacid, isomesic Typic Hydraquents

Setting

Landscape: Estuaries

Landform: Tidal marshes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 0 to 2 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium

Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Depth to water table: At the soil surface

Drainage class: Very poorly drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Strongly saline (about 16.0 mmhos/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 3.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 8w

Meets hydric soil criteria: Yes

Hydrologic soil group: D

Typical Profile

0 to 15 inches; clay

15 to 60 inches; clay

Minor Components

Unnamed strongly acid soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed, overwash soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

459440—Olompali loam, 2 to 9 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 801 feet

Mean annual precipitation: 35 to 45 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 250 to 300 days

Map Unit Composition

Olompali and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Olompali Soil

Classification

Soil taxonomic classification: Fine, smectitic, mesic Ultic Palexeralfs

Setting

Landscape: Fluviomarine terraces

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 2 to 9 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Water table (depth, kind): At the soil surface, perched (see table 19)

Drainage class: Somewhat poorly drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 8.2 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—3e-2; irrigated areas—2e-2

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Spike bentgrass, wild oat, California oatgrass, blue wildrye, foxtail fescue, common velvetgrass, Douglas iris, Italian ryegrass, plantain, Kellogg bluegrass, and purple tussock grass

Typical Profile

0 to 13 inches; loam

13 to 28 inches; clay

28 to 42 inches; gravelly clay

42 to 60 inches; clay

60 to 64 inches; weathered bedrock

Minor Components

Felton variant soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed hydric soils

Percent of map unit: 5 percent

Landform: Basin floors

Geomorphic position (two-dimensional): Backslope

Meets hydric soil criteria: Yes

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of less than 2 percent

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Soulajule soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459441—Olompali loam, 9 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 801 feet

Mean annual precipitation: 35 to 45 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 250 to 300 days

Map Unit Composition

Olompali and similar soils: 85 percent

Dissimilar minor components: 15 percent

Description of Olompali Soil

Classification

Soil taxonomic classification: Fine, smectitic, mesic Ultic Palexeralfs

Setting

Landscape: Fluvio-marine terraces

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 9 to 15 percent

Down-slope shape: Linear

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Water table (depth, kind): At the soil surface, perched (see table 19)

Drainage class: Somewhat poorly drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 8.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-2
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Spike bentgrass, wild oat, California oatgrass, blue wildrye, foxtail fescue, common velvetgrass, Douglas iris, Italian ryegrass, plantain, Kellogg bluegrass, and purple tussock grass

Typical Profile

0 to 13 inches; loam
13 to 28 inches; clay
28 to 42 inches; gravelly clay
42 to 60 inches; clay
60 to 64 inches; weathered bedrock

Minor Components

Unnamed hydric soils

Percent of map unit: 5 percent
Landform: Basin floors
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

Felton variant soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 9 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soulajule soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459442—Olompali loam, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 801 feet
Mean annual precipitation: 35 to 45 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 250 to 300 days

Map Unit Composition

Olompali and similar soils: 85 percent

Dissimilar minor components: 14 percent

Description of Olompali Soil

Classification

Soil taxonomic classification: Fine, smectitic, mesic Ultic Palexeralfs

Setting

Landscape: Fluviomarine terraces

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Very high

Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Water table (depth, kind): At the soil surface, perched (see table 19)

Drainage class: Somewhat poorly drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 8.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-2

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Spike bentgrass, wild oat, California oatgrass, blue wildrye, foxtail fescue, common velvetgrass, Douglas iris, Italian ryegrass, plantain, Kellogg bluegrass, and purple tussock grass

Typical Profile

0 to 13 inches; loam

13 to 28 inches; clay

28 to 42 inches; gravelly clay

42 to 60 inches; clay

60 to 64 inches; weathered bedrock

Minor Components

Felton variant soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of more than 50 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soulajule soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Yorkville soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459448—Palomarin-Wittenberg complex, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 4B—Coastal Redwood Belt

Elevation: 495 to 1,295 feet

Mean annual precipitation: 30 to 42 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 300 to 365 days

Map Unit Composition

Palomarin and similar soils: 40 percent

Wittenberg and similar soils: 30 percent

Dissimilar minor components: 27 percent

Description of Palomarin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, superactive, isomesic Humic

Dystrudepts

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Concave

Across-slope shape: Concave
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Lithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Hazel, swordfern, anise, ryegrass, honeysuckle, western brackenfern, currant, Himalayan berry, poison oak, trillium, and blueberry

Typical Profile

0 to 18 inches; loam
18 to 29 inches; loam
29 to 41 inches; gravelly loam
41 to 45 inches; unweathered bedrock

Description of Wittenberg Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, superactive, isomesic Humic
Pachic Dystrudepts

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Lithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Alder, hazel, swordfern, tanoak, ryegrass, honeysuckle, western brackenfern, California live oak, poison oak, trillium, California laurel, and blueberry

Typical Profile

0 to 26 inches; very gravelly loam
26 to 50 inches; very gravelly loam
50 to 54 inches; unweathered bedrock

Minor Components

Bayview soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Inverness soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Pablo soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Sheridan variant soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459451—Rock outcrop-Xerorthents complex, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Map Unit Composition

Rock outcrop: 50 percent
Xerorthents and similar soils: 30 percent

Description of Rock Outcrop

Setting

Landscape: Mountains
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 50 to 75 percent
Down-slope shape: Convex
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)

Description of Xerorthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landscape: Mountains
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank and riser
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southwest
Aspect range: Southeast to west (clockwise)

Properties and Qualities

Parent material: Residuum weathered from chert, serpentinite, slate, and/or sandstone
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 8s
Meets hydric soil criteria: No
Hydrologic soil group: None assigned

459452—Rodeo clay loam, 2 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 19.7 to 200 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 300 to 365 days

Map Unit Composition

Rodeo and similar soils: 90 percent
Dissimilar minor components: 9 percent

Description of Rodeo Soil

Classification

Soil taxonomic classification: Fine, smectitic, isomesic Aquic Paleustolls

Setting

Landscape: Basin floors
Landform: Interior valleys and basin floors
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Slope range: 2 to 15 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Southwest
Aspect range: East to northwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Alluvium derived from igneous, metamorphic, and sedimentary rock
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Water table (depth, kind): At the soil surface, perched (see table 19)
Drainage class: Poorly drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 11.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3w-3
Meets hydric soil criteria: Yes
Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, thistle, California oatgrass, orchardgrass, beardless wildrye, foxtail fescue, fescue, barley, rush, perennial ryegrass, plantain, and dock

Typical Profile

0 to 20 inches; clay loam
20 to 75 inches; clay

Minor Components

Humaquepts

Percent of map unit: 3 percent
Landform: Drainageways
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

Soils with slopes of less than 2 percent

Percent of map unit: 3 percent

Meets hydric soil criteria: No

Unnamed very gravelly soils

Percent of map unit: 3 percent

Meets hydric soil criteria: No

459453—Saurin-Bonnydoon complex, 2 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 40 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Saurin and similar soils: 50 percent

Bonnydoon and similar soils: 30 percent

Dissimilar minor components: 20 percent

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 2 to 15 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: West

Aspect range: Southeast to northeast (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-8

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam

10 to 33 inches; clay loam

33 to 37 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 2 to 15 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: West

Aspect range: Southeast to northeast (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 15 inches; gravelly loam

15 to 19 inches; weathered bedrock

Minor Components

Los Osos soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

459454—Saurin-Bonnydoon complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 40 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Saurin and similar soils: 40 percent

Bonnydoon and similar soils: 30 percent

Dissimilar minor components: 24 percent

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-8
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam
10 to 33 inches; clay loam
33 to 37 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 30 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Southwest
Aspect range: Southeast to northwest (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 15 inches; gravelly loam

15 to 19 inches; weathered bedrock

Minor Components

Los Osos soils

Percent of map unit: 8 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 8 percent

Meets hydric soil criteria: No

Unnamed soils with dark surface layers

Percent of map unit: 8 percent

Meets hydric soil criteria: No

459455—Saurin-Bonnydoon complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 40 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Saurin and similar soils: 50 percent

Bonnydoon and similar soils: 40 percent

Dissimilar minor components: 8 percent

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam

10 to 33 inches; clay loam

33 to 37 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 1.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 11 inches; gravelly loam

11 to 15 inches; weathered bedrock

Minor Components

Los Osos soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed soils with dark surface layers

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459456—Saurin-Bonnydoon complex, 50 to 75 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 40 inches

Mean annual air temperature: 57 to 63 degrees F

Frost-free period: 270 to 320 days

Map Unit Composition

Saurin and similar soils: 50 percent

Bonnydoon and similar soils: 40 percent

Dissimilar minor components: 8 percent

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Soil Survey of Golden Gate National Recreation Area, California

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam

10 to 33 inches; clay loam

33 to 37 inches; weathered bedrock

Description of Bonnydoon Soil

Classification

Soil taxonomic classification: Loamy, mixed, thermic, shallow Entic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Convex

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Somewhat excessively drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, soap plant, California oatgrass, longbeak stork's bill, burclover, and purple tussock grass

Typical Profile

0 to 11 inches; gravelly loam
11 to 15 inches; weathered bedrock

Minor Components

Los Osos soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed soils with dark surface layers

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459463—Sirdrak sand, 15 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 19.7 to 499 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 54 to 55 degrees F
Frost-free period: 300 to 365 days

Map Unit Composition

Sirdrak and similar soils: 90 percent
Dissimilar minor components: 9 percent

Description of Sirdrak Soil

Classification

Soil taxonomic classification: Sandy, mixed, isomesic Humic Dystrustepts

Setting

Landscape: Dune fields

Landform: Dunes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: West

Aspect range: South to north (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Low

Parent material: Eolian sands derived from sandstone

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Somewhat excessively drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 5.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: A

Vegetation

Existing plants: Mustard, soft chess, ripgut brome, leporinum barley, perennial ryegrass, yellow bush lupine, and western brackenfern

Typical Profile

0 to 16 inches; sand

16 to 48 inches; sand

48 to 73 inches; sand

Minor Components

Bayview soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Dune land

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Humaquepts

Percent of map unit: 1 percent

Landform: Drainageways

Geomorphic position (two-dimensional): Backslope

Meets hydric soil criteria: Yes

Kehoe soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Kehoe variant soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Pablo soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Sirdrak variant soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 1 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

**459467—Tamalpais-Barnabe variant very gravelly loams,
15 to 30 percent slopes**

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 39.4 to 801 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 300 to 365 days

Map Unit Composition

Tamalpais and similar soils: 60 percent

Barnabe variant and similar soils: 30 percent

Dissimilar minor components: 7 percent

Description of Tamalpais Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Typic Argiustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: South

Aspect range: East to west (clockwise)

Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone or chert
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4s-4
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Bentgrass, western pearly everlasting, California sagebrush, coyotebrush, sedge, hairgrass, buckwheat, perennial ryegrass, lupine, narrowleaf plantain, western brackenfern, blackberry, needlegrass, and poison oak

Typical Profile

0 to 19 inches; very gravelly loam
19 to 39 inches; very gravelly clay loam
39 to 43 inches; unweathered bedrock

Description of Barnabe Variant Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, isomesic Lithic Haplustolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 30 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4s-4
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California sagebrush, wild oat, coyotebrush, soap plant, hairgrass, buckwheat, Italian ryegrass, other perennial forbs, and needlegrass

Typical Profile

0 to 13 inches; very gravelly loam
13 to 17 inches; unweathered bedrock

Minor Components

Barnabe soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Cronkhite soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed loam soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

**459468—Tamalpais-Barnabe variant very gravelly loams,
30 to 50 percent slopes (fig. 3)**

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 39.4 to 801 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 300 to 365 days

Map Unit Composition

Tamalpais and similar soils: 50 percent
Barnabe variant and similar soils: 30 percent
Dissimilar minor components: 15 percent



Figure 3.—An area of map unit 459468 along the Conzelman Road. The road cut has exposed Barnabe and Tamalpais soils, which have inherited colors from the chert.

Description of Tamalpais Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Typic Argiustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Southeast

Aspect range: Northeast to southwest (clockwise)

Soil Survey of Golden Gate National Recreation Area, California

Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high
Parent material: Residuum weathered from sandstone or chert
Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 3.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Bentgrass, western pearly everlasting, California sagebrush, coyotebrush, sedge, hairgrass, buckwheat, perennial ryegrass, lupine, narrowleaf plantain, western brackenfern, blackberry, needlegrass, and poison oak

Typical Profile

0 to 19 inches; very gravelly loam
19 to 39 inches; very gravelly clay loam
39 to 43 inches; unweathered bedrock

Description of Barnabe Variant Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, isomesic Lithic Haplustolls

Setting

Landscape: Mountains
Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountain flank
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Southeast
Aspect range: Northeast to southwest (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California sagebrush, wild oat, coyotebrush, soap plant, hairgrass, buckwheat, Italian ryegrass, other perennial forbs, and needlegrass

Typical Profile

0 to 13 inches; very gravelly loam
13 to 17 inches; unweathered bedrock

Minor Components

Barnabe soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Cronkhite soils

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 4 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed loam soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

**459469—Tamalpais-Barnabe variant very gravelly loams,
50 to 75 percent slopes**

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 39.4 to 801 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 300 to 365 days

Map Unit Composition

Tamalpais and similar soils: 50 percent
Barnabe variant and similar soils: 40 percent
Dissimilar minor components: 7 percent

Description of Tamalpais Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, active, isomesic Typic Argiustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Northwest

Aspect range: South to east (clockwise)

Soil temperature class: Isomesic

Soil temperature regime: Isomesic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from sandstone or chert

Restrictive feature(s): Lithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 3.7 inches)

Interpretive Groups

Land capability subclass: Nonirrigated areas—7s; irrigated areas—7e

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Bentgrass, western pearly everlasting, California sagebrush, coyotebrush, sedge, hairgrass, buckwheat, perennial ryegrass, lupine, narrowleaf plantain, western brackenfern, blackberry, needlegrass, and poison oak

Typical Profile

0 to 19 inches; very gravelly loam

19 to 39 inches; very gravelly clay loam

39 to 43 inches; unweathered bedrock

Description of Barnabe Variant Soil

Classification

Soil taxonomic classification: Loamy-skeletal, mixed, isomesic Lithic Haplustolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 50 to 75 percent

Down-slope shape: Concave

Across-slope shape: Convex
Representative aspect: Northwest
Aspect range: South to east (clockwise)
Soil temperature class: Isomesic
Soil temperature regime: Isomesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and/or chert
Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 1.2 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California sagebrush, wild oat, coyotebrush, soap plant, hairgrass, buckwheat, Italian ryegrass, other perennial forbs, and needlegrass

Typical Profile

0 to 13 inches; very gravelly loam
13 to 17 inches; unweathered bedrock

Minor Components

Barnabe soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Cronkhite soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed loam soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459471—Tocaloma-McMullin complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 55 to 61 degrees F
Frost-free period: 290 to 330 days

Map Unit Composition

Tocaloma and similar soils: 40 percent
McMullin and similar soils: 35 percent
Dissimilar minor components: 19 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam
19 to 39 inches; very gravelly loam
39 to 43 inches; weathered bedrock

Description of McMullin Soil

Classification

Soil taxonomic classification: Loamy, mixed, mesic Lithic Ultic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northeast

Aspect range: Northwest to east (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from conglomerate

Restrictive feature(s): Lithic bedrock at a depth of 12 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 2.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Madrone, wild oat, brome, blue wildrye, toyon, oak, poison oak, and California laurel

Typical Profile

0 to 4 inches; gravelly loam

4 to 18 inches; gravelly loam

18 to 22 inches; unweathered bedrock

Minor Components

Saurin soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed soils with dark surface layers

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No



Figure 4.—Angel Island, most of which is mapped as Tocaloma-McMullin complex, 50 to 75 percent slopes. These soils formed on metamorphosed rocks of the Franciscan Complex.

Los Osos soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459472—Tocaloma-McMullin complex, 50 to 75 percent slopes (fig. 4)

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 30 to 40 inches

Mean annual air temperature: 55 to 61 degrees F

Frost-free period: 290 to 330 days

Map Unit Composition

Tocaloma and similar soils: 40 percent

McMullin and similar soils: 35 percent

Dissimilar minor components: 18 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam
19 to 39 inches; very gravelly loam
39 to 43 inches; weathered bedrock

Description of McMullin Soil

Classification

Soil taxonomic classification: Loamy, mixed, mesic Lithic Ultic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex

Representative aspect: Northeast
Aspect range: Northwest to east (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from conglomerate
Restrictive feature(s): Lithic bedrock at a depth of 12 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 2.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Madrone, wild oat, brome, blue wildrye, toyon, oak, poison oak, and California laurel

Typical Profile

0 to 4 inches; gravelly loam
4 to 18 inches; gravelly loam
18 to 22 inches; unweathered bedrock

Minor Components

Bonnydoon soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Maymen soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed deep soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459473—Tocaloma-McMullin-Urban land complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 30 to 40 inches

Mean annual air temperature: 55 to 63 degrees F

Frost-free period: 290 to 330 days

Map Unit Composition

Tocaloma and similar soils: 30 percent

McMullin and similar soils: 25 percent

Urban land: 25 percent

Dissimilar minor components: 12 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: East

Aspect range: North to south (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-8

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam

19 to 39 inches; very gravelly loam

39 to 43 inches; weathered bedrock

Description of McMullin Soil

Classification

Soil taxonomic classification: Loamy, mixed, mesic Lithic Ultic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: East

Aspect range: North to south (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from conglomerate

Restrictive feature(s): Lithic bedrock at a depth of 12 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Very low (about 2.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Typical Profile

0 to 4 inches; gravelly loam

4 to 18 inches; gravelly loam

18 to 22 inches; unweathered bedrock

Description of Urban Land

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 15 to 30 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: East
Aspect range: North to south (clockwise)

Properties and Qualities

Runoff: Very high

Minor Components

Dipsea soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of more than 30 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Xerorthents

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459474—Tocaloma-McMullin-Urban land complex, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 9.8 to 1,499 feet
Mean annual precipitation: 25 to 40 inches
Mean annual air temperature: 55 to 64 degrees F
Frost-free period: 250 to 330 days

Map Unit Composition

Tocaloma and similar soils: 40 percent
McMullin and similar soils: 20 percent
Urban land: 20 percent
Dissimilar minor components: 12 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-8
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam
19 to 39 inches; very gravelly loam
39 to 43 inches; weathered bedrock

Description of McMullin Soil

Classification

Soil taxonomic classification: Loamy, mixed, mesic Lithic Ultic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)

Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from conglomerate
Restrictive feature(s): Lithic bedrock at a depth of 12 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Very low (about 2.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Typical Profile

0 to 4 inches; gravelly loam
4 to 18 inches; gravelly loam
18 to 22 inches; unweathered bedrock

Description of Urban Land

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Linear
Across-slope shape: Linear
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)

Properties and Qualities

Runoff: Very high

Minor Components

Dipsea soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 30 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of more than 50 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Xerorthents

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459475—Tocaloma-Saurin association, steep

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 30 to 40 inches

Mean annual air temperature: 55 to 63 degrees F

Frost-free period: 290 to 330 days

Map Unit Composition

Tocaloma and similar soils: 35 percent

Saurin and similar soils: 30 percent

Dissimilar minor components: 20 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: North

Aspect range: Southeast to northeast (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Low (about 1.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-8

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam

19 to 39 inches; very gravelly loam

39 to 43 inches; weathered bedrock

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Southwest

Aspect range: Southeast to northeast (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Well drained

Shrink-swell potential: Moderate (about 4.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-8

Meets hydric soil criteria: No

Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam

10 to 33 inches; clay loam

33 to 37 inches; weathered bedrock

Minor Components

Bonnydoon soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Los Osos soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

McMullin soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 5 percent

Meets hydric soil criteria: No

459476—Tocaloma-Saurin association, very steep

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 30 to 40 inches

Mean annual air temperature: 55 to 63 degrees F

Frost-free period: 290 to 330 days

Map Unit Composition

Tocaloma and similar soils: 40 percent

Saurin and similar soils: 30 percent

Dissimilar minor components: 26 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: North

Aspect range: West to east (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium

Parent material: Residuum weathered from sandstone and shale

Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Soil Survey of Golden Gate National Recreation Area, California

Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam
19 to 39 inches; very gravelly loam
39 to 43 inches; weathered bedrock

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex and concave
Representative aspect: North
Aspect range: West to east (clockwise)
Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, rippgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam
10 to 33 inches; clay loam
33 to 37 inches; weathered bedrock

Minor Components

Bonnydoon soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Los Osos soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

McMullin soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Montara soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed hydric soils

Percent of map unit: 2 percent
Landform: Depressions
Meets hydric soil criteria: Yes

Unnamed gravelly soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed light-colored soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459477—Tocaloma-Saurin association, extremely steep

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 1,499 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 55 to 63 degrees F
Frost-free period: 290 to 330 days

Map Unit Composition

Tocaloma and similar soils: 40 percent
Saurin and similar soils: 30 percent
Dissimilar minor components: 23 percent

Description of Tocaloma Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Typic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: South
Aspect range: East to west (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralitich bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Low (about 1.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 4.3 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: California brome, ripgut brome, slender hairgrass, swordfern, blue wildrye, bedstraw, rabbitsfoot grass, western brackenfern, California live oak, California wildrose, poison oak, and California laurel

Typical Profile

0 to 19 inches; loam
19 to 39 inches; very gravelly loam
39 to 43 inches; weathered bedrock

Description of Saurin Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, thermic Typic Haploxerolls

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 50 to 75 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: South
Aspect range: East to west (clockwise)

Soil temperature class: Thermic
Soil temperature regime: Thermic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone and shale
Restrictive feature(s): Paralithic bedrock at a depth of 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Low (about 6.0 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 7e
Meets hydric soil criteria: No
Hydrologic soil group: C

Vegetation

Existing plants: Wild oat, soft chess, ripgut brome, California oatgrass, blue wildrye, longbeak stork's bill, Idaho fescue, Italian ryegrass, squirreltail, and purple tussock grass

Typical Profile

0 to 10 inches; clay loam
10 to 33 inches; clay loam
33 to 37 inches; weathered bedrock

Minor Components

Bonnydoon soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

McMullin soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed gravelly soils

Percent of map unit: 5 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed hydric soils

Percent of map unit: 1 percent
Landform: Depressions
Meets hydric soil criteria: Yes

459481—Tomales fine sandy loam, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 0 to 801 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 300 to 365 days

Map Unit Composition

Tomales and similar soils: 85 percent

Dissimilar minor components: 13 percent

Description of Tomales Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Ultic Paleustalfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Northeast to northwest (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 6.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Redtop, silver hairgrass, coyotebrush, soft chess, Pacific reedgrass, slender hairgrass, blue wildrye, foxtail fescue, common velvetgrass, perennial ryegrass, western brackenfern, and Himalayan berry

Typical Profile

0 to 12 inches; fine sandy loam
12 to 24 inches; loam
24 to 47 inches; clay
47 to 51 inches; weathered bedrock

Minor Components

Bayview soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Pablo soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Sobega soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Steinbeck soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed isomesic soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Humaquepts

Percent of map unit: 1 percent
Landform: Drainageways
Meets hydric soil criteria: Yes

459489—Tomales-Steinbeck fine sandy loams, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 0 to 801 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 300 to 365 days

Map Unit Composition

Tomales and similar soils: 50 percent
Steinbeck and similar soils: 30 percent
Dissimilar minor components: 11 percent

Description of Tomales Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Ultic Paleustalfs

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent
Down-slope shape: Concave
Across-slope shape: Convex
Representative aspect: South
Aspect range: Northeast to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Paralitich bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Moderately well drained
Shrink-swell potential: High (about 7.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.4 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Redtop, silver hairgrass, coyotebrush, soft chess, Pacific reedgrass, slender hairgrass, blue wildrye, foxtail fescue, common velvetgrass, perennial ryegrass, western brackenfern, and Himalayan berry

Typical Profile

0 to 12 inches; fine sandy loam
12 to 24 inches; loam
24 to 47 inches; clay
47 to 51 inches; weathered bedrock

Description of Steinbeck Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Ultic Haplustalfs

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 30 to 50 percent

Down-slope shape: Concave
Across-slope shape: Concave
Representative aspect: South
Aspect range: Northeast to northwest (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: High
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 6.8 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Wild oat, soft chess, California oatgrass, blue wildrye, musky stork's bill, foxtail fescue, Mediterranean barley, perennial ryegrass, burclover, annual bluegrass, and purple tussock grass

Typical Profile

0 to 35 inches; fine sandy loam
35 to 48 inches; clay loam
48 to 52 inches; weathered bedrock

Minor Components

Rodeo soils

Percent of map unit: 3 percent
Landform: Drainageways
Meets hydric soil criteria: Yes

Bayview soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Pablo soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Sobega soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459490—Tomales-Steinbeck loams, 5 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 0 to 801 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 270 to 365 days

Map Unit Composition

Tomales and similar soils: 50 percent

Steinbeck and similar soils: 30 percent

Dissimilar minor components: 8 percent

Description of Tomales Soil

Classification

Soil taxonomic classification: Fine, mixed, mesic Ultic Paleustalfs

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 5 to 15 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: North

Aspect range: Southwest to east (clockwise)

Soil temperature class: Mesic

Soil temperature regime: Mesic

Properties and Qualities

Runoff: High

Parent material: Residuum weathered from sandstone

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: Moderate (about 6.9 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-3

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Redtop, silver hairgrass, coyotebrush, soft chess, Pacific reedgrass, slender hairgrass, blue wildrye, foxtail fescue, common velvetgrass, perennial ryegrass, western brackenfern, and Himalayan berry

Typical Profile

0 to 12 inches; loam
12 to 24 inches; loam
24 to 47 inches; clay
47 to 51 inches; weathered bedrock

Description of Steinbeck Soil

Classification

Soil taxonomic classification: Fine-loamy, mixed, mesic Ultic Haplustalfs

Setting

Landscape: Uplands
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Slope range: 5 to 15 percent
Down-slope shape: Linear
Across-slope shape: Convex
Representative aspect: North
Aspect range: Southwest to east (clockwise)
Soil temperature class: Mesic
Soil temperature regime: Mesic

Properties and Qualities

Runoff: Medium
Parent material: Residuum weathered from sandstone
Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Drainage class: Well drained
Shrink-swell potential: Moderate (about 4.5 LEP)
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: Moderate (about 7.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-1
Meets hydric soil criteria: No
Hydrologic soil group: B

Vegetation

Existing plants: Wild oat, soft chess, California oatgrass, blue wildrye, musky stork's bill, foxtail fescue, Mediterranean barley, perennial ryegrass, burclover, annual bluegrass, and purple tussock grass

Typical Profile

0 to 35 inches; loam
35 to 48 inches; clay loam
48 to 52 inches; weathered bedrock

Minor Components

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 5 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Sobega soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459494—Urban land-Xerorthents complex, 0 to 9 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 0 to 499 feet

Mean annual precipitation: 20 to 30 inches

Mean annual air temperature: 55 to 63 degrees F

Frost-free period: 270 to 350 days

Map Unit Composition

Urban land: 70 percent

Xerorthents and similar soils: 20 percent

Dissimilar minor components: 9 percent

Description of Urban Land

Setting

Landscape: Valleys

Landform: Valley floors

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Base slope

Slope range: 0 to 9 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Northeast

Aspect range: Northwest to southeast (clockwise)

Properties and Qualities

Runoff: Very high

Description of Xerorthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landscape: Valleys

Landform: Valley floors

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Base slope and tread

Slope range: 0 to 9 percent

Down-slope shape: Linear

Across-slope shape: Linear
Representative aspect: Northeast
Aspect range: Northwest to southeast (clockwise)

Properties and Qualities

Parent material: Earth spread deposits derived from igneous, metamorphic, and sedimentary rock
Restrictive feature(s): None within a depth of 60 inches
Frequency of flooding: None
Frequency of ponding: None
Depth to water table: More than 72 inches
Salinity maximum: Not saline
Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 8s
Meets hydric soil criteria: No
Hydrologic soil group: None assigned

Minor Components

Hydraquents

Percent of map unit: 2 percent
Landform: Tidal flats
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

Ballard soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Blucher soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Cole soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Novato soils

Percent of map unit: 1 percent
Landform: Salt marshes
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

Reyes soils

Percent of map unit: 1 percent
Landform: Salt marshes
Geomorphic position (two-dimensional): Backslope
Meets hydric soil criteria: Yes

Soils with slopes of more than 9 percent

Percent of map unit: 1 percent
Meets hydric soil criteria: No

Unnamed briefly flooded soils

Percent of map unit: 1 percent
Meets hydric soil criteria: No

459495—Xerorthents, fill

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Map Unit Composition

Xerorthents and similar soils: 100 percent

Description of Xerorthents

Classification

Soil taxonomic classification: Xerorthents

Setting

Landscape: Valleys

Landform: Valley floors

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Base slope and tread

Slope range: 0 to 5 percent

Down-slope shape: Linear

Across-slope shape: Linear

Representative aspect: Northeast

Aspect range: Northwest to southeast (clockwise)

Properties and Qualities

Parent material: Earth spread deposits derived from igneous, metamorphic, and sedimentary rock

Restrictive feature(s): None within a depth of 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Salinity maximum: Not saline

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 8s

Meets hydric soil criteria: No

Hydrologic soil group: None assigned

459497—Yorkville clay loam, 9 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 55 to 59 degrees F

Frost-free period: 240 to 270 days

Map Unit Composition

Yorkville and similar soils: 85 percent

Dissimilar minor components: 12 percent

Description of Yorkville Soil

Classification

Soil taxonomic classification: Fine, mixed, superactive, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 9 to 15 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: Southeast to west (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 10.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-3

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Silver hairgrass, wild oat, soft chess, dogstail grass, California oatgrass, stork's bill, foxtail fescue, barley, Italian ryegrass, burclover, purple tussock grass, and medusahead

Typical Profile

0 to 14 inches; clay loam

14 to 51 inches; clay

51 to 55 inches; weathered bedrock

Minor Components

Los Osos soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of less than 9 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

459498—Yorkville clay loam, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 55 to 59 degrees F

Frost-free period: 240 to 270 days

Map Unit Composition

Yorkville and similar soils: 85 percent

Dissimilar minor components: 12 percent

Description of Yorkville Soil

Classification

Soil taxonomic classification: Fine, mixed, superactive, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: East

Aspect range: Northwest to southwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic
Calcium carbonate equivalent (maximum weight percentage): 0
Available water capacity: High (about 10.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-3
Meets hydric soil criteria: No
Hydrologic soil group: D

Vegetation

Existing plants: Silver hairgrass, wild oat, soft chess, dogstail grass, California oatgrass, stork's bill, foxtail fescue, barley, Italian ryegrass, burclover, purple tussock grass, and medusahead

Typical Profile

0 to 14 inches; clay loam
14 to 51 inches; clay
51 to 55 inches; weathered bedrock

Minor Components

Los Osos soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Soils with slopes of less than 15 percent

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent
Meets hydric soil criteria: No

459499—Yorkville clay loam, 30 to 50 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range
Elevation: 49.2 to 1,499 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 240 to 270 days

Map Unit Composition

Yorkville and similar soils: 85 percent
Dissimilar minor components: 15 percent

Description of Yorkville Soil

Classification

Soil taxonomic classification: Fine, mixed, superactive, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 30 to 50 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Southwest

Aspect range: East to northwest (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 9.5 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 6e

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Silver hairgrass, wild oat, soft chess, dogstail grass, California oatgrass, stork's bill, foxtail fescue, barley, Italian ryegrass, burclover, purple tussock grass, and medusahead

Typical Profile

0 to 10 inches; clay loam

10 to 45 inches; clay

45 to 49 inches; weathered bedrock

Minor Components

Bonnydoon soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Rock outcrop

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of more than 50 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Los Osos soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459500—Yorkville-Rock outcrop complex, 9 to 15 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 55 to 59 degrees F

Frost-free period: 240 to 270 days

Map Unit Composition

Yorkville and similar soils: 60 percent

Rock outcrop: 20 percent

Dissimilar minor components: 11 percent

Description of Yorkville Soil

Classification

Soil taxonomic classification: Fine, mixed, superactive, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 9 to 15 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: Northwest

Aspect range: Southwest to north (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 10.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 3e-3

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Silver hairgrass, wild oat, soft chess, dogstail grass, California oatgrass, stork's bill, foxtail fescue, barley, Italian ryegrass, burclover, purple tussock grass, and medusahead

Typical Profile

0 to 14 inches; clay loam

14 to 51 inches; clay

51 to 55 inches; weathered bedrock

Description of Rock Outcrop

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 9 to 15 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: Northwest

Aspect range: Southwest to north (clockwise)

Minor Components

Bonnydoon soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of less than 9 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Tocaloma soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Los Osos soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459501—Yorkville-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

Major land resource area (MLRA): 15—Central California Coast Range

Elevation: 49.2 to 1,499 feet

Mean annual precipitation: 25 to 35 inches

Mean annual air temperature: 55 to 59 degrees F

Frost-free period: 240 to 270 days

Map Unit Composition

Yorkville and similar soils: 60 percent

Rock outcrop: 20 percent

Dissimilar minor components: 13 percent

Description of Yorkville Soil

Classification

Soil taxonomic classification: Fine, mixed, superactive, thermic Typic Argixerolls

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Convex

Representative aspect: West

Aspect range: Southeast to northeast (clockwise)

Soil temperature class: Thermic

Soil temperature regime: Thermic

Properties and Qualities

Runoff: Very high

Parent material: Residuum weathered from shale

Restrictive feature(s): Paralithic bedrock at a depth of 40 to 60 inches

Frequency of flooding: None

Frequency of ponding: None

Depth to water table: More than 72 inches

Drainage class: Moderately well drained

Shrink-swell potential: High (about 7.5 LEP)

Salinity maximum: Nonsaline (about 1.0 mmho/cm)

Sodicity maximum: Not sodic

Soil Survey of Golden Gate National Recreation Area, California

Calcium carbonate equivalent (maximum weight percentage): 0

Available water capacity: High (about 10.7 inches)

Interpretive Groups

Land capability subclass (nonirrigated and irrigated): 4e-3

Meets hydric soil criteria: No

Hydrologic soil group: D

Vegetation

Existing plants: Silver hairgrass, wild oat, soft chess, dogstail grass, California oatgrass, stork's bill, foxtail fescue, barley, Italian ryegrass, burclover, purple tussock grass, and medusahead

Typical Profile

0 to 14 inches; clay loam

14 to 51 inches; clay

51 to 55 inches; weathered bedrock

Description of Rock Outcrop

Setting

Landscape: Uplands

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Slope range: 15 to 30 percent

Down-slope shape: Concave

Across-slope shape: Concave

Representative aspect: West

Aspect range: Southeast to northeast (clockwise)

Minor Components

Bonnydoon soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Saurin soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Soils with slopes of more than 30 percent

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Slumps

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallow soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Unnamed shallower soils

Percent of map unit: 2 percent

Meets hydric soil criteria: No

Los Osos soils

Percent of map unit: 1 percent

Meets hydric soil criteria: No

459502—Water

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Map Unit Composition

Water: 100 percent

1412772—Water

Map Unit Setting

Major land resource area (MLRA): 14—Central California Coastal Valleys

Map Unit Composition

Water: 100 percent

1611084—No digital data available

This area was not surveyed.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in Golden Gate National Recreation Area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils as rangeland and as sites for buildings, sanitary facilities, highways and other transportation systems, and recreational facilities. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the park. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the park for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *slightly limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately well suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact

on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA-SCS, 1961a).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally

designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of map units in this park is given in the section "Detailed Soil Map Units" and in table 2.

Prime and Other Important Farmland

Table 3 lists the map units in the park that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed,

fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Hydric Soils

Table 4 lists the map unit components that are rated as hydric soils in the park. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; USDA-NRCS, 2010).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2010) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (USDA-NRCS, 2010).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels and Histosols except for Folist.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (K_{sat}) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (K_{sat}) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for periods of long or very long duration during the growing season.
4. Soils that are frequently flooded for periods of long or very long duration during the growing season.

Landform and Parent Material

Table 5 identifies the landform and parent material for each soil in the map units.

Percent of the map unit is the extent of the named soil in the map unit.

Slope is the inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. The table shows the low and high range of slope for the named component or soil.

Elevation is the height of an object or area on the earth's surface in reference to a fixed reference point, such as mean sea level. The typical low and high range of elevation is displayed for each soil.

MAP is the mean annual precipitation for areas of the soil in the map unit.

Landform is a specific shape of the earth in the area where a soil typically occurs. Examples are a mountain summit and a valley bottom.

Parent material is the material in which soils formed. Examples are the underlying geological material (including bedrock), a surficial deposit (such as volcanic ash), and organic material. Soils inherit their chemical and physical properties from the parent material.

Land Management

In table 6, parts I through IV, interpretive ratings are given for various aspects of land management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified land management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One

or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified land management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for *fire damage* and *seedling mortality* are expressed as low, moderate, and high. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

Rating class terms for *hazard of erosion* are expressed as slight, moderate, severe, and very severe. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for erosion is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for land management practices.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of planting equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in areas where 50 to 75 percent of the surface has been exposed by different kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification,

depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreation

The soils of the park are rated in table 7, parts I and II, according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in table 7 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Foot traffic and equestrian trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Mountain bike and off-road vehicle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, depth to a water table, ponding, slope, flooding, and texture of the surface layer.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, landscaping, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section.

Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for septic tank absorption fields and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, ponds, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Dwellings and Small Commercial Buildings

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 8 shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the

load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Roads and Streets, Shallow Excavations, and Landscaping

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 9 shows the degree and kind of soil limitations that affect local roads and streets, shallow excavations, and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the

amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Landscaping requires soils on which turf, trees, and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sewage Disposal

Table 10 shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (K_{sat}), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (K_{sat}), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (K_{sat}) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used

as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a K_{sat} rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Source of Gravel and Sand

Table 11 gives information about the soils as potential sources of gravel and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and sand are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness. The ratings are for the whole soil, from the surface to a depth of about 6 feet.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

Source of Reclamation Material, Roadfill, and Topsoil

Table 12 gives information about the soils as potential sources of reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good*, *fair*, or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. Numerical ratings between 0.00 and 0.99 are given after the specified features. These numbers indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability

of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments. The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Ponds and Embankments

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (K_{sat}) of the soil and the depth to

fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, K_{sat} of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering properties, physical and chemical properties, and pertinent soil and water features.

Engineering Properties

Table 14 gives the engineering classifications and the range of engineering properties for the layers of each soil in the park.

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

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

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

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

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

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement,

the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical Soil Properties

Table 15 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the park. The estimates are based on field observations and on test data for these and similar soils.

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

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

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

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

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

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

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

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $1/3$ - or $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water

and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

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

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on the basis of measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, 6 to 9 percent; and *very high*, greater than 9 percent.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion Properties

Table 16 shows estimates of some erosion factors that affect a soil's potential for different uses. These estimates are given for each layer of every soil for K factors and are given as one rating for the entire soil for the T factor, the wind erodibility group, and the wind erodibility index. Values are reported for each soil in the park. Estimates are based on field observations and on test data for these and similar soils.

Erosion factors are shown in the table as the K factor (K_w and K_f) and the T factor. Soil erosion factors K_w and K_f quantify soil detachment by runoff and raindrop impact. These erosion factors are indexes used to predict the long-term average soil loss from sheet and rill erosion under crop systems and conservation techniques. 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 K_{sat} . 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.

The procedure for determining the Kf factor is outlined in Agriculture Handbook 703, "Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE)," USDA, Agricultural Research Service, 1997.

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

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments. In horizons where total rock fragments are 15 percent or more, by volume, the Kw factor is always less than the Kf factor.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size. Soil horizons that do not have rock fragments are assigned equal Kw and Kf factors.

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

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

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

Total Soil Carbon

Table 17 gives estimates of total soil carbon. Soil carbon occurs as organic and inorganic carbon.

Soil organic carbon (SOC) is carbon (C) in soil that originated from a biological source, such as plants, animals, or micro-organisms. SOC is found in both organic and mineral soil layers. The term "soil organic carbon" refers only to the carbon occurring in soil organic matter (SOM). Soil organic carbon makes up about one-half the weight of soil organic matter. The rest of SOM is mostly oxygen, nitrogen, and hydrogen.

Soil inorganic carbon (SIC) is carbon found in soil carbonates, typically as calcium carbonate layers in the soil or as clay-sized fractions throughout the soil. Carbonates in soils are most common in areas where evaporation rates exceed precipitation, as is the case in most desert environments. Typically, the carbonates accumulated from carbonatic dust or from solution during periods of wetter climates. Soil inorganic carbon also occurs in soils that formed in marl in all regions of the country.

The SOC and SIC contents are reported in kilograms per square meter to a depth of 2 meters or to a representative depth of either hard bedrock or a cemented horizon. The SOC and SIC values are on a whole soil basis, corrected for rock fragments.

SOC can be an indicator of overall soil fertility and soil quality that affects ecosystem function. SOM is the main reservoir for most plant nutrients, such as phosphorus and nitrogen. Managing for SOC by managing for SOM increases the content of these elements and improves soil resiliency.

Soil organic matter binds soil particles together and thus increases soil porosity and water infiltration and allows better root penetration and waterflow into the soil. Greater inflow of water reduces the hazard of erosion and the rate of surface water runoff.

Greater SOC levels improve not only soil quality but also the quality of air and water. Soil acts as a filter and improves water quality. Fertile soils that support plant life remove CO₂ from the atmosphere and increase oxygen levels through photosynthesis. Maintaining the level of soil organic carbon reduces C release into the atmosphere and thus can lessen the effects of global warming.

SIC influences the types of plants that will grow. High SIC levels are commonly associated with a higher soil pH, which limits the types of plants that will thrive.

Like SOM, soil carbonates, the source of SIC, also bind soil particles together. They fill voids in the soil and thus can reduce soil porosity. Compacted soil carbonates may restrict root penetration and waterflow into the soil.

Chemical Soil Properties

Table 18 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the park. The estimates are based on field observations and on test data for these and similar soils.

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

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of exchangeable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Water Features

Table 19 gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 19 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 20 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (K_{sat}), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

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

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

Soils are named and classified on the basis of physical and chemical properties in their horizons (layers). Color, texture, structure, and other properties of the soil to a depth of 2 meters are used to key the soil into a classification system. This system helps people to use soil information and also provides a common language for scientists.

Soils and their horizons differ from one another, depending on how and when they formed. Soil scientists use the five soil-forming factors to help predict where different soils may occur. The degree and expression of the soil horizons reflect the extent of interaction of the soil-forming factors with one or more of the soil-forming processes (Simonson, 1959).

When mapping soils, a soil scientist looks for areas with similar soil-forming factors to find similar soils. The properties of the soils are described. Soils with the same kind of properties are given taxonomic names. Soils are classified, mapped, and interpreted on the basis of various kinds of soil horizons and their arrangement. The distribution of soil orders corresponds with the general patterns of the soil-forming factors within the park.

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2010). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The categories are defined in the following paragraphs.

ORDER. Soil taxonomy at the highest hierarchical level identifies 12 soil orders. The names for the orders and taxonomic soil properties relate to Greek, Latin, or other root words that reveal something about the soil. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisols.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. Sixty-four suborders are recognized at the next level of classification. The last syllable in the name of a suborder indicates the order. An example is Ustoll (*Ust*, meaning dry in summer, plus *oll*, from Mollisols).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. There are about 300 great groups. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Argiustolls (*Argi*, indicating the presence of an argillic horizon, plus *ustolls*, the suborder of the Mollisols that has an ustic moisture regime).

SUBGROUP. There are more than 2,400 subgroups. Each great group has a typical subgroup. The typical subgroup is the central concept of the great group; it is not

necessarily the most extensive. Other subgroups are intergrades or extragrades. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Argiustolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties for family placement are those of horizons below a traditional agronomic plow depth. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, active, isomesic Typic Argiustolls.

SERIES. The soil series is the lowest category in the soil classification system. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The Tamalpais series is classified as loamy-skeletal, mixed, active, isomesic Typic Argiustolls. This series was established in Golden Gate National Recreation Area.

Most parks are mapped to the series level. The names of soil series are selected by the soil scientists during the course of mapping. The series names are commonly geographic place names or are coined. Tamalpais is a place name. Because of access limitations and soil variability, soils in some remote areas are classified at the great group or subgroup level.

Table 21 indicates the order, suborder, great group, subgroup, and family of the soil series in the park. Table 22 displays classification as a key sorted by soil order.

Soil Series and Their Morphology

In this section, soil series that have their type location either in Golden Gate National Recreation Area or in the adjacent Point Reyes National Seashore are described. Five new series were established in Golden Gate National Recreation Area during the span of mapping, and four were established in the adjacent Point Reyes National Seashore (and also mapped in Golden Gate National Recreation Area). Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, which is typical of the series in the survey area, is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2010). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series. The map units of each soil series are described in the section "Detailed Soil Map Units."

Barnabe Series

Geographic Setting

The Barnabe series consists of shallow, well drained soils that formed in material from sandstone and shale. Barnabe soils are on hills and mountainous uplands. Slopes are 9 to 75 percent. Elevations range from 50 to 1,700 feet. The climate consists of cool, foggy summers and cool, moist winters. The mean annual precipitation is 30 to 50 inches. The mean temperature in January is about 50 degrees

F, the mean temperature in July temperature is about 56 degrees F, and the mean annual temperature is about 53 degrees F. The frost-free season is 275 to 360 days.

Geographically Associated Soils

These associated soils include Centissima, Cronkhite, Dipsea, and Henneke soils. Centissima, Cronkhite, and Dipsea soils are more than 20 inches deep to a paralithic contact. Henneke soils have serpentinitic mineralogy and an argillic horizon.

Taxonomic Classification

Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls

Typical Pedon

Barnabe very gravelly loam, 0 to 5 percent slopes; in Golden Gate National Recreation Area (in Marin County, California); 200 feet east of Diaz Ridge Fire Road, on a north-facing convex slope of 22 percent, under coyotebrush, lupine, and annual grasses and forbs; at an elevation of 720 feet; lat. 37 degrees 52 minutes 50 seconds N. and long. 122 degrees 33 minutes 25 seconds W.; UTM 538962E 4192655N. (Colors are for dry soil unless otherwise stated. When described on August 9, 1976, the soil was dry throughout.)

- A—0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure parting to weak fine granular; hard, firm; slightly sticky and slightly plastic; many very fine and fine and few medium roots; common very fine and fine and few medium interstitial and tubular pores; 45 percent pebbles; moderately acid (pH 6.0); clear smooth boundary. (1 to 2 inches thick)
- AB—2 to 8 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark gray (10YR 3/1) moist; strong fine and medium subangular blocky structure; hard, firm; slightly sticky and slightly plastic; many very fine and fine and few medium roots; many very fine and fine interstitial and tubular pores; 45 percent pebbles; slightly acid (pH 6.3); clear smooth boundary. (4 to 8 inches thick)
- Bt—8 to 16 inches; very dark grayish brown (10YR 3/2) very gravelly loam, black (10YR 2/1) moist; strong fine and medium subangular blocky structure; hard, friable; sticky and plastic; common very fine and fine roots; many very fine and fine interstitial and tubular pores; few thin clay films on faces of peds and in interstitial pores; 35 percent pebbles; slightly acid (pH 6.3); abrupt irregular boundary. (5 to 10 inches thick)
- R—16 inches; fractured sandstone and shale; does not slake in water.

Range in Characteristics

Depth to a lithic contact is 11 to 20 inches. The mean annual soil temperature is 50 to 56 degrees F. The soil temperature is not below 47 degrees F at any time. The soil is moist in some part from October to August and moist in the summer due, in part, from heavy fog and low evapotranspiration rates. It is dry in all parts for less than 45 consecutive days in August and September. The content of gravel averages 35 to 50 percent. The base saturation is 50 to 75 percent throughout the soil. Reaction is slightly acid or moderately acid.

The A horizon has dry color of 10YR 5/2, 5/3, or 4/2 or 7.5YR 5/4 or 5/2 and moist color of 10YR 2/1, 2/2, 3/1, or 3/2 or 7.5YR 2/2 or 3/2. It is very gravelly sandy loam or very gravelly loam and has 1 to 3 percent organic matter.

The B horizon has dry color of 10YR 3/2, 4/3, 4/2, 5/2, or 5/3 or 7.5YR 4/2 or 4/4 and moist color of 10YR 2/1, 2/2, 3/1, 3/2, or 3/3 or 7.5YR 2/2 or 3/2.

Centissima Series

Geographic Setting

The Centissima series consists of moderately deep, well drained soils that formed in material weathered from fine grained sandstone and shale. Centissima soils are on hills and mountains. Slopes are 15 to 75 percent. Elevations range from 500 to 1,700 feet. The climate consists of cool, foggy summers and cool, moist winters. The mean annual precipitation is 40 to 50 inches. The mean temperature in January is about 49 degrees F, the mean temperature in July is about 57 degrees F, and the mean annual temperature is about 54 degrees F. The frost-free season is 300 to 365 days.

Geographically Associated Soils

These associated soils include Barnabe, Cronkhite, Dipsea, and Henneke soils. Barnabe soils are less than 20 inches deep to a lithic contact. Dipsea and Cronkhite soils have an argillic horizon. Henneke soils have serpentinitic mineralogy and an average of more than 35 percent gravel in the particle-size control section.

Taxonomic Classification

Fine-loamy, mixed, active, isomesic Humic Dystrustepts

Typical Pedon

Centissima loam; in Golden Gate National Recreational Area (in Marin County, California); north of Bolinas Lagoon, 0.8 mile northeast on Randall Trail from Highway 1, about 20 feet south of Randall Trail, on a southwest-facing convex slope of 20 percent, under Douglas-fir, tanoak, poison oak, swordfern, bay, and some annual grasses; at an elevation of 920 feet; lat. 37 degrees 58 minutes 50 seconds N. and long. 122 degrees 42 minutes 42 seconds W.; UTM 525321E 4203696N. (Colors are for dry soil unless otherwise stated. When described on August 14, 1976, the soil was moist below a depth of 6 inches.)

Oe—2 inches to 0; decomposed duff and litter.

A1—0 to 6 inches; brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable; slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine and fine and few medium interstitial and tubular pores; slightly acid (pH 6.5); gradual wavy boundary. (3 to 6 inches thick)

A2—6 to 15 inches; brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable; slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine and fine and few medium interstitial and tubular pores; slightly acid (pH 6.5); clear irregular boundary. (5 to 10 inches thick)

Bt—15 to 22 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 3/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable; slightly sticky and slightly plastic; few fine and medium roots; many very fine and fine and few medium interstitial and tubular pores; few thin clay films on peds and in pores; moderately acid (pH 6.0); clear irregular boundary. (5 to 8 inches thick)

C1—22 to 29 inches; light brown (7.5YR 6/4) gravelly clay loam, yellowish brown (10YR 5/4) moist; weak fine and medium subangular blocky structure; hard, firm; sticky and plastic; few fine and medium roots; many very fine and fine interstitial and tubular pores; few thin clay films on peds and in pores; 20 percent pebbles; moderately acid (pH 6.0); clear wavy boundary. (4 to 9 inches thick)

C2—29 to 33 inches; light brown (7.5YR 6/4) and yellowish red (5YR 5/6) very gravelly clay loam, strong brown (7.5YR 5/6) moist; weak fine and medium subangular blocky structure; hard, firm; sticky and plastic; few fine and medium roots; common

very fine and fine interstitial and tubular pores; common thin clay films on peds and in pores; 45 percent pebbles; slightly acid (pH 6.3); clear smooth boundary. (3 to 7 inches thick)
Cd—33 to 40 inches; massive weathered soft sandstone and shale; slakes in water.

Range in Characteristics

Depth to a densic contact is 20 to 40 inches. The mean annual soil temperature is 50 to 56 degrees F. The difference between the mean annual winter and mean annual summer temperatures is less than 9 degrees F. The soil moisture control section is moist in all parts about 270 to 300 days. Reaction is slightly acid or moderately acid. Base saturation is less than 50 percent throughout the profile and decreases as depth increases.

The A horizon is dark grayish brown or brown (10YR 4/2, 4/3, or 5/3 or 7.5YR 3/2, 4/2, 4/4, or 5/2). Moist color is very dark grayish brown or dark brown (10YR 3/2 or 3/3 or 7.5YR 3/2). This horizon is gravelly loam, loam, fine sandy loam, or gravelly fine sandy loam.

The B horizon is light yellowish brown, brownish yellow, or pale brown (10YR 6/3, 6/4, or 6/6). Moist color is dark brown, dark yellowish brown, or yellowish brown (10YR 3/3, 3/4, 4/4, 5/4, or 5/6). This horizon is loam or gravelly loam. There is a 1 to less than 3 percent increase in clay content from the A horizon to the B horizon.

The C horizon is light brown, reddish yellow, light yellowish brown, or brownish yellow (7.5YR 6/4 or 6/6 or 10YR 6/4 or 6/6). Moist color is brown, strong brown, yellowish brown, or yellowish red (7.5YR 5/4 or 5/6; 10YR 5/4 or 5/6; or 5YR 4/6). The upper part of the C horizon is loam or gravelly clay loam. The upper part ranges from 5 to 35 percent gravel, and the lower part ranges from 35 to 50 percent gravel.

Cronkhite Series

Geographic Setting

The Cronkhite series consists of deep, moderately well drained soils that formed in material weathered from sandstone and shale. Cronkhite soils are on hills. Slopes are 9 to 75 percent. Elevations range from 50 to 800 feet. The climate consists of cool, foggy summers and cool, moist winters. The mean annual precipitation is 24 to 35 inches. The mean temperature in January is about 52 degrees F, the mean temperature in July is about 55 degrees F, and the mean annual temperature is about 52 to 57 degrees F. The frost-free season is 275 to 300 days.

Geographically Associated Soils

These associated soils include Barnabe, Centissima, Dipsea, and Tocaloma soils and the competing Olompali soils. Barnabe soils are less than 20 inches deep to a lithic contact. Centissima soils are 20 to 40 inches deep to a paralithic contact and have a fine-loamy particle-size control section. Dipsea soils do not have a mollic epipedon and have a loamy-skeletal particle-size control section. Tocaloma soils are 20 to 40 inches deep to a paralithic contact and do not have an argillic horizon.

Taxonomic Classification

Fine, smectitic, isomesic Pachic Argiustolls

Typical Pedon

Cronkhite loam; in Golden Gate National Recreation Area (in Marin County, California); north of Muir Beach, 400 feet uphill east of Muir Woods Road, 1/2 mile northwest of the intersection of Shoreline Highway and Muir Woods Road, on a west-facing convex slope of 45 percent, under coyotebrush, sage, lupine, brackenfern, poison oak, blackberry, ryegrass, and toyon; at an elevation of 200 feet; lat. 37 degrees 52

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minutes 21.66 seconds N. and long. 122 degrees 34 minutes 53.82 seconds W.; UTM 536841.49E 4191877.73N. (Colors are for dry soil unless otherwise stated. When described on September 21 1976, the soil was moist below a depth of 26 inches.)

- A1—0 to 9 inches; brown (10YR 5/3) loam, very dark gray (10YR 3/1) moist; strong very fine, fine, and medium subangular blocky structure; extremely hard, friable; slightly sticky and slightly plastic; common very fine and few medium roots; common very fine tubular and interstitial and common fine tubular and vesicular pores; cracks 5 millimeters wide and 6 to 12 inches apart; slightly acid (pH 6.3); clear smooth boundary. (8 to 11 inches thick)
- A2—9 to 15 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate very fine, fine, and medium subangular blocky structure; very hard, friable; slightly sticky and slightly plastic; common very fine roots; common very fine tubular and vesicular pores; cracks 5 millimeters wide and 6 to 12 inches apart; slightly acid (pH 6.3); gradual smooth boundary. (5 to 8 inches thick)
- AB—15 to 26 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate very fine and fine subangular blocky structure; extremely hard, friable; sticky and plastic; common very fine roots; common very fine interstitial and tubular and common fine and medium tubular and vesicular pores; common moderately thick clay films in pores; many pressure faces; cracks 0.5 centimeter wide and about 6 to 12 inches apart; slightly acid (pH 6.3); abrupt smooth boundary. (10 to 13 inches thick)
- Bt1—26 to 37 inches; mixed yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) clay, dark grayish brown (10YR 4/2) and very dark grayish brown (10YR 3/2) moist; moderate coarse and very coarse angular blocky structure; extremely hard, firm; sticky and plastic; common very fine and few fine roots; common very fine tubular, vesicular, and interstitial pores; many moderately thick clay films in pores; many pressure faces; cracks 5 millimeters wide and about 4 to 8 inches apart; slightly acid (pH 6.3); gradual wavy boundary. (10 to 16 inches thick)
- Bt2—37 to 45 inches; yellowish brown (10YR 5/8) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium and coarse angular blocky structure; very hard, friable; sticky and plastic; common very fine and few fine roots; common very fine tubular, vesicular, and interstitial pores; many moderately thick clay films in pores; many pressure faces; cracks 10 millimeters wide and about 4 to 8 inches apart; neutral (pH 6.8); gradual irregular boundary. (7 to 12 inches thick)
- Cd—45 to 55 inches; highly shattered weathered sandstone with prominent dark stains; fragments slake in water.

Range in Characteristics

Depth to the densic contact is 40 to 60 inches. The mean annual soil temperature is about 53 to 58 degrees F. The difference between the mean summer and mean winter temperatures is less than 9 degrees F. The soil moisture control section is usually moist in all parts from mid-November to June. It is dry in some or all parts the rest of the year but is not dry in all parts for 45 consecutive days. The soil is slightly acid or neutral and commonly becomes less acid as depth increases. The content of organic matter is more than 1 percent to a depth of 20 inches or more. Base saturation is more than 50 percent throughout the profile and increases as depth increases.

The A horizon has dry color of 10YR 4/2, 5/2, or 5/3 and moist color of 10YR 2/1, 3/2, or 3/3.

The Bt horizon has variegated dry color of 10YR 5/6, 5/8, or 6/6 or 7.5YR 4/2, 5/2, or 5/8 and moist color of 10YR 3/2, 4/2, 4/3, or 4/4. It is clay or clay loam and has 35 to 50 percent clay. The upper boundary of this horizon is abrupt. The horizon has a less than 15 percent absolute clay increase from the A horizon.

Inverness Series

Geographic Setting

The Inverness series consists of deep, well drained soils that formed in residuum weathered from granite. Inverness soils occur on hills and mountains. Slopes are 9 to 75 percent. Elevations range from 250 to 1,200 feet. The climate consists of cool, foggy summers and cool, moist winters. The mean annual precipitation is 25 to 35 inches. The mean temperature in January is about 52 degrees F, the mean temperature in July is about 55 degrees F, and the mean annual temperature is about 52 to 57 degrees F. The frost-free season is about 300 to 365 days.

Geographically Associated Soils

These associated soils include Bayview and Pablo soils. Bayview and Pablo soils are less than 20 inches deep to a lithic contact.

Taxonomic Classification

Fine-loamy, mixed, active, isomesic Ultic Haplustalfs

Typical Pedon

Inverness loam; in Point Reyes National Seashore (in Marin County, California); northwest of Point Reyes Hill on Drakes View Drive, on a west-facing concave slope of 5 percent, under harding grass, coyotebrush, plantain, and velvetgrass; at an elevation of 1,100 feet; lat. 38 degrees 5 minutes 7.87 seconds N. and long. 122 degrees 52 minutes 35.75 seconds W.; UTM 510827E 4215310N. (Colors are for dry soil unless otherwise stated. When described on September 14, 1976, the soil was moist throughout.)

- A1—0 to 10 inches; very dark grayish brown (10YR 3/2) loam, black (10YR 2/1) moist; strong very fine, fine, and medium subangular blocky structure; slightly hard, friable; sticky and plastic; many very fine and fine and common medium roots; few very fine and fine tubular and interstitial pores; strongly acid (pH 5.5); gradual smooth boundary. (5 to 15 inches thick)
- A2—10 to 22 inches; very dark grayish brown (10YR 3/2) loam, black (10YR 2/1) moist; strong fine, medium, and coarse subangular blocky structure; slightly hard, friable; sticky and plastic; many very fine and fine and common medium roots; common very fine and fine tubular and interstitial pores; strongly acid (pH 5.5); clear smooth boundary. (8 to 15 inches thick)
- Bt1—22 to 29 inches; brown (10YR 5/3) clay loam, very dark brown (10YR 2/2) moist; strong medium and coarse subangular blocky structure; hard, friable; sticky and plastic; common very fine and fine roots; common very fine and fine tubular and interstitial pores; few thin clay films in pores and on peds; strongly acid (pH 5.5); clear smooth boundary. (5 to 10 inches thick)
- Bt2—29 to 36 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) and very dark grayish brown (10YR 3/2) moist; strong medium and coarse subangular blocky structure; hard, very friable; sticky and plastic; common very fine and fine roots; few very fine and fine interstitial and common very fine and fine tubular pores; common thin clay films in pores and on peds; strongly acid (pH 5.5); clear smooth boundary. (5 to 10 inches thick)
- C1—36 to 47 inches; very pale brown (10YR 7/4) loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; hard, friable; slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular and interstitial pores; about 5 to 10 percent mica; moderately acid (pH 5.8); clear smooth boundary. (8 to 15 inches thick)
- C2—47 to 60 inches; very pale brown (10YR 7/4) loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable; slightly sticky and slightly plastic; few

very fine and fine roots; common very fine and fine tubular and interstitial pores; about 20 percent mica; moderately acid (pH 5.8); gradual smooth boundary. (10 to 15 inches thick)
Cr—60 to 70 inches; very pale brown (10YR 7/4) strongly weathered soft granitic rock.

Range in Characteristics

Depth to the paralithic contact of weathered granite is 40 to 60 inches or more. The mean annual soil temperature is 52 to 57 degrees F. The difference between the mean summer and mean winter soil temperatures is less than 9 degrees F. The soil moisture control section is usually moist in all parts from mid-November to mid-June. It is dry in some or all parts the rest of the year but is not dry in all parts for 45 consecutive days. The particle-size control section averages less than 35 percent clay. Reaction is strongly acid or moderately acid; pH increases as depth increases. Base saturation ranges from 35 to 50 percent throughout the profile.

The A horizon has dry color of 10YR 4/1, 4/2, or 3/2 and moist color of 10YR 2/1, 2/2, 3/1, or 3/2.

The Bt horizon has dry color of 10YR 4/2, 5/2, 5/3, 6/2, 6/3, or 6/4 and moist color of 10YR 3/2, 4/2, 5/2, 5/3, 2/2, or 4/4. It is clay loam or loam.

The C horizon has dry color of 10YR 7/3, 7/4, or 6/4 and moist color of 10YR 6/3, 6/4, or 5/4. It is loam or sandy loam and is massive or has weak subangular blocky structure. It contains about 5 to 20 percent mica and, due to the mica, has a smooth or greasy feel.

Palomarin Series

Geographic Setting

The Palomarin series consists of deep, well drained soils that formed material weathered from strongly fractured, hard siliceous shale. Palomarin soils are on uplands. Slopes are 9 to 75 percent. Elevations range from 500 to 1,300 feet. The mean annual precipitation is 30 to 42 inches. The mean temperature in January is 50 degrees F, the mean temperature in July is about 60 degrees F, and the mean annual temperature is 53 to 58 degrees F. The frost-free season is 300 to 365 days.

Geographically Associated Soils

These associated soils include the competing Centissima and Wittenberg soils and Cronkhite, Inverness, and Pablo soils. Cronkhite and Inverness soils have an argillic horizon. Pablo soils are less than 20 inches deep to a lithic contact.

Taxonomic Classification

Fine-loamy, mixed, superactive, isomesic Humic Dystrudepts

Typical Pedon

Palomarin loam; in Point Reyes National Seashore (in Marin County, California); approximately 3.7 miles on Stewarts Trail from Five Brooks Trailhead, 50 feet east of Stewarts Trail, west of Five Brooks Ranch, on a southeast-facing convex slope of 5 percent, under Douglas-fir, huckleberry, brackenfern, wild honeysuckle, poison oak, soft chess, and ryegrass; at an elevation of 1,280 feet; lat. 37 degrees 59 minutes 40.14 seconds N. and long. 122 degrees 46 minutes 27.37 seconds W.; UTM 519820E 4205226N. (Colors are for dry soil unless otherwise stated. When described on March 15, 1977, the soil was moist throughout.)

Oe—2 inches to 0; litter and duff, mostly Douglas-fir needles.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, friable;

slightly sticky and slightly plastic; many very fine roots; many very fine and fine tubular and interstitial pores; very strongly acid (pH 5.0); clear smooth boundary. (0 to 10 inches thick)

A2—3 to 18 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable; slightly sticky and slightly plastic; many very fine and fine and few medium roots; many very fine and fine tubular and interstitial pores; very strongly acid (pH 5.0); diffuse smooth boundary. (10 to 15 inches thick)

A3—18 to 29 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable; slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine and fine tubular and interstitial pores; very strongly acid (pH 5.0); clear irregular boundary. (10 to 15 inches thick)

C—29 to 41 inches; brown (10YR 5/3) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable; slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine and fine pores; 10 percent pebbles; very strongly acid (pH 5.0); clear irregular boundary. (10 to 20 inches thick)

R—41 inches; hard, highly fractured shale that can be dug with difficulty with a hand tool; fractures are wider than 1 inch and less than 4 inches apart.

Range in Characteristics

Depth to a lithic contact is 40 to 60 inches. The mean annual soil temperature is 50 to 56 degrees F. The difference between the mean summer and mean winter soil temperatures is less than 9 degrees F. The soil moisture control section is moist in all parts for about 270 to 300 days. Reaction is very strongly acid or strongly acid throughout the profile. Base saturation ranges from 25 to 40 percent throughout the profile. The content of rock fragments, consisting mostly of gravel, ranges from 0 to 25 percent.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3 or 7.5YR 3/2, 4/2, or 5/2 and moist color of 10YR 3/2 or 3/3 or 7.5YR 4/2 or 3/2. It is loam or gravelly loam.

The C horizon has dry color of 10YR 5/3, 5/4, 6/3, or 6/4 or 7.5YR 5/6, 6/4, or 6/6 and moist color of 10YR 3/3, 4/3, 4/4, or 5/3 or 7.5YR 5/6 or 5/8. It is loam or gravelly loam.

Rodeo Series

Geographic Setting

The Rodeo series consists of very deep, poorly drained soils that formed in mixed alluvium from chert, sandstone, and granite. Rodeo soils are in narrow coastal valleys and drainages adjacent to the Pacific Ocean. Slopes are 2 to 15 percent. Elevations range from 20 to 200 feet. The climate is subhumid mesothermal and consists of cool, foggy summers and cool, moist winters. The mean annual precipitation is 25 to 30 inches. The mean temperature in January is about 50 degrees F, the mean temperature in July is about 55 degrees F, and the mean annual temperature is about 50 to 56 degrees F. The frost-free season is about 300 to 365 days.

Geographically Associated Soils

These associated soils include Tamalpais soils and the competing Cronkhite soils. Tamalpais soils have a lithic contact at a depth of 20 to 40 inches.

Taxonomic Classification

Fine, smectitic, isomesic Aquic Paleustolls

Typical Pedon

Rodeo clay loam, 2 to 15 percent slopes; in Golden Gate National Recreational Area (in Marin County, California); about 1,400 feet north on a light-duty road from an old dairy barn and 200 feet west of the light-duty road at Fort Barry, north of Bobcat Trail, on a southwest-facing concave slope of 5 percent, under California oatgrass, foxtail fescue, soft chess, rigput brome, dock, wiregrass, ryegrass, hemlock, and willow; at an elevation of 100 feet; lat. 37 degrees 50 minutes 35.85 seconds N. and long. 122 degrees 30 minutes 45.86 seconds W.; UTM 542871E 4188539N. (Colors are for dry soil unless otherwise stated. When described on September 16, 1975, the soil was moist below a depth of 20 inches.)

- Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) clay loam, very dark gray (10YR 3/1) moist; moderate fine and medium subangular blocky structure; hard, very friable; sticky and plastic; many very fine and fine roots; many very fine and fine interstitial and common very fine tubular pores; moderately acid (pH 6.0); clear smooth boundary. (5 to 10 inches thick)
- A—6 to 14 inches; very dark grayish brown (10YR 3/2) clay loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; hard, very friable; sticky and plastic; many very fine and fine roots; many very fine interstitial and tubular pores; moderately acid (pH 5.8); clear wavy boundary. (4 to 10 inches thick)
- E—14 to 20 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; common medium fine brownish yellow (10YR 6/8) and common medium distinct yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) moist mottles; massive; hard, very friable; sticky and plastic; common very fine roots; many very fine subangular pores; moderately acid (pH 5.8); abrupt smooth boundary. (5 to 12 inches thick)
- Btc1—20 to 29 inches; variegated pale brown (10YR 6/3), light yellowish brown (10YR 6/4), and brownish yellow (10YR 6/8) clay, yellowish brown (10YR 5/4) moist; many medium and large prominent yellowish red (5YR 4/8) moist mottles; moderate fine subangular blocky structure; hard, firm; sticky and plastic; few very fine roots; common very fine tubular pores; many moderately thick clay films in pores and on peds; many pressure faces; few fine concretions; moderately acid (pH 5.8); clear wavy boundary. (7 to 11 inches thick)
- Btc2—29 to 40 inches; variegated pale brown (10YR 6/3) and brownish yellow (10YR 6/8) clay, strong brown (7.5YR 5/8) and yellowish red (5YR 5/8) moist; many medium prominent gray (5Y 5/1) and light gray (5Y 6/1) moist mottles; weak fine subangular blocky structure; hard, firm; sticky and plastic; few very fine roots; few very fine interstitial pores; many moderately thick clay films in pores and on peds; many pressure faces; common fine concretions; very strongly acid (pH 5.0); gradual wavy boundary. (9 to 13 inches thick)
- Btgc1—40 to 58 inches; variegated light gray (10YR 7/2), brownish yellow (10YR 6/6), and yellowish brown (10YR 6/8) clay, yellowish brown (10YR 5/6) and pale brown (10YR 6/3) moist; weak medium subangular blocky structure; hard, firm; sticky and plastic; few very fine pores; many moderately thick clay films in pores and on peds; common fine concretions; common pressure faces; very strongly acid (pH 4.8); clear wavy boundary. (10 to 18 inches thick)
- Btgc2—58 to 75 inches; variegated light gray (10YR 7/2) and brownish yellow (10YR 6/8) clay, pale brown (10YR 6/3) and brown (7.5YR 4/4) moist; massive; hard, very firm; sticky and plastic; few very fine roots; common thin clay films in pores and on peds; common fine concretions; very strongly acid (pH 4.8).

Range in Characteristics

The solum is 60 to 90 inches thick. The mean annual soil temperature ranges from 54 to 59 degrees F. The difference between the mean winter and mean summer temperatures is 5 to 8 degrees F. The soil moisture control section is usually moist in all parts for 45 consecutive days. The particle-size control section commonly becomes more acid as depth increases.

The A horizon has dry color of 10YR 3/1, 3/2, 4/1, or 4/2 and moist color of 10YR 2/1, 2/2, 3/1, or 3/2. It has moderate or strong subangular blocky or granular structure.

The E horizon has dry color of 10YR 6/3, 6/4, or 7/3. It has common mottles with dry color of 10YR 5/6, 6/6, or 6/8 and moist color of 10YR 5/3, 5/8, 6/3, or 6/8. It has weak subangular blocky structure or is massive.

The B horizon has dry color of 10YR 6/3, 6/4, 6/6, 6/8, 7/2, or 7/3 and moist color of 10YR 5/3, 5/4, 5/6, 6/2, or 6/3; 7.5YR 4/4 or 5/8; or 5Y 5/8. Moist mottles have color of 5YR 4/8; 10YR 5/6, 5/8, 6/6, or 6/8; or 5Y 5/1 or 6/1. Some part of the Bt horizon, within a depth of 60 inches, has hue redder than 10YR and chroma greater than 4 in the matrix and/or common coarse mottles that have hue of 7.5YR or redder or chroma greater than 5. The horizon is clay or clay loam. It has weak or moderate subangular blocky structure or is massive. It has 2 to 15 percent rounded concretions throughout the argillic horizon.

Sirdrak Series

Geographic Setting

The Sirdrak series consists of very deep, somewhat excessively drained soils that formed in sandy eolian deposits near the Pacific Ocean. Sirdrak soils are on dunes. Slopes are 0 to 50 percent. Elevations range from 20 to 800 feet. The climate consists cool, foggy summers and cool, moist winters. The mean annual precipitation is 20 to 45 inches. The mean temperature in January is 48 to 52 degrees F, the mean temperature in July is 52 to 56 degrees F, and the mean annual temperature is about 53 to 57 degrees F. The frost-free period is 250 to 365 days.

Geographically Associated Soils

These associated soils include Kehoe, Inverness, and Tomales soils. Kehoe and Inverness soils have a fine-loamy particle-size control section. Tomales soils have a fine particle-size control section.

Taxonomic Classification

Sandy, mixed, isomesic Humic Dystrustepts

Typical Pedon

Sirdrak sand; in Point Reyes National Seashore (in Marin County, California); about 400 feet northeast of the intersection of Pierce Point Road and the north entrance to McClure Ranch on an access road, about 100 feet south in a field, on a northwest-facing hummocky slope of 1 percent, under lupine, ripgut brome, fiddleneck, filaree, wild oat, and soft chess; at an elevation of 90 feet; lat. 38 degrees 8 minutes 42 seconds N. and long. 122 degrees 56 minutes 9 seconds W.; UTM 505622E 4221905N. (Colors are for dry soil unless otherwise stated. When described on April 24, 1974, the soil was moist throughout).

A1—0 to 16 inches: very dark grayish brown (10YR 3/2) sand, very dark brown (10YR 2/2) moist; single grained; loose, very friable; many very fine, fine, and few coarse roots; many very fine interstitial pores; moderately acid (pH 6.0); clear smooth boundary. (2 to 20 inches thick)

- A2—16 to 36 inches; very dark grayish brown (10YR 3/2) sand, very dark brown (10YR 2/2) moist; massive; soft, very friable; few fine and common medium roots; many very fine interstitial pores; slightly acid (pH 6.3); clear smooth boundary. (10 to 30 inches thick)
- AC—36 to 48 inches; dark yellowish brown (10YR 4/4) sand, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable; few fine and common medium roots; many very fine interstitial pores; slightly acid (pH 6.3); clear wavy boundary. (6 to 15 inches thick)
- C—48 to 62 inches; yellowish brown (10YR 5/4) sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable; few fine and medium roots; many very fine interstitial pores; slightly acid (pH 6.5).

Range in Characteristics

The mean annual soil temperature is 50 to 56 degrees F, and the soil temperature usually is not below 47 degrees F at any time. The difference between the mean winter and mean summer temperatures is less than 9 degrees F. The soil is usually moist between depths of 12 and 36 inches from mid-November to mid-June. It is dry in some part the rest of the year. The content of organic matter ranges from 1 to 5 percent to depths of more than 20 inches and decreases regularly as depths increase. Reaction is strongly acid to slightly acid. The soil is sand or loamy sand throughout and has 80 to 95 percent sand. Base saturation ranges from 50 to 85 percent in the upper 20 to 24 inches and from 35 to 50 percent at a depth of 45 to 60 inches.

The A horizon has dry color of 10YR 4/1, 4/2, 4/3, 3/2, or 3/3 and moist color of 10YR 2/2, 3/2, 3/3, 3/1, or 2/1. It has weak granular structure or is single grained or massive.

The C horizon has dry color of 10YR 6/3, 6/4, 6/6, 5/4, 5/6, 4/3, or 4/4; 5Y 7/2 or 7/3; or 2.5Y 4/2, 7/2, or 7/4 and moist color of 10YR 5/3, 5/4, 4/4, 4/6, 3/2, or 3/4; 2.5Y 4/2 or 5/4; or 5Y 5/3 or 6/3.

Tamalpais Series

Geographic Setting

The Tamalpais series consists of moderately deep, well drained soils that formed in material weathered from radiolarian chert and sandstone. Tamalpais soils are on mountainous uplands. Slopes are 15 to 75 percent. Elevations range from 40 to 800 feet. The climate consists of cool, foggy summers and cool, moist winters. The mean annual precipitation is 25 to 35 inches. The mean temperature in January is 48 to 52 degrees F, the mean temperature in July is 52 to 55 degrees F, and the mean annual temperature is 50 to 56 degrees F. The frost-free season is 300 to 365 days.

Geographically Associated Soils

These associated soils include Barnabe, Cronkhite, and Rodeo soils. Barnabe soils are 10 to 20 inches deep to a paralithic contact and do not have an argillic horizon. Cronkhite and Rodeo soils have a fine particle-size control section.

Taxonomic Classification

Loamy-skeletal, mixed, active, isomesic Typic Argiustolls

Typical Pedon

Tamalpais very gravelly loam; at Marin Headlands, Golden Gate National Recreational Area (in Marin County, California); at an intersecting point 1,300 feet northwest from the edge of a quarry and military housing and 2,800 feet northeast from a shed at a rifle range at Ft. Barry, west of Rodeo Valley Trail, on a southwest-facing convex slope

Soil Survey of Golden Gate National Recreation Area, California

of 45 percent, under sage, coyotebush, poison oak, plantain, and annual grasses; at an elevation of 200 feet; lat. 37 degrees 50 minutes 20.54 seconds N. and long. 122 degrees 30 minutes 17.41 seconds W.; UTM 543569E 4188071N. (Colors are for dry soil unless otherwise stated. When described on August 4, 1976, the soil was moist below a depth of 19 inches.)

- A1—0 to 10 inches; dark brown (7.5YR 4/4) very gravelly loam, dark reddish brown (5YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable; sticky and plastic; common very fine and fine and few medium roots; many very fine and fine tubular and interstitial pores; 35 percent pebbles; moderately acid (pH 6.0); gradual wavy boundary. (3 to 10 inches thick)
- A2—10 to 19 inches; dark brown (7.5YR 4/4) very gravelly loam, dark reddish brown (5YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable; sticky and plastic; common very fine and fine roots; few medium tubular and many very fine and fine tubular and interstitial pores; 40 percent pebbles; slightly acid (pH 6.3); gradual wavy boundary. (4 to 9 inches thick)
- Bt1—19 to 28 inches; brown (7.5YR 5/4) very gravelly clay loam, dark reddish brown (5YR 3/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable; sticky and plastic; few very fine roots; many very fine and fine tubular and interstitial pores; many moderately thick clay films on peds, in pores, and as bridges between mineral grains; 40 percent pebbles; slightly acid (pH 6.5); gradual smooth boundary. (5 to 9 inches thick)
- Bt2—28 to 39 inches; dark reddish brown (5YR 3/4) very gravelly clay loam, reddish brown (5YR 4/4) moist; weak fine and medium subangular blocky structure; hard, friable; very sticky and very plastic; few very fine roots; many very fine and fine tubular and interstitial pores; few thin clay films on peds, in pores, and as bridges between mineral grains; 45 percent pebbles; neutral (pH 7.0); abrupt irregular boundary. (8 to 12 inches thick)
- R—39 to 46 inches; hard fractured radiolarian chert and sandstone.

Range in Characteristics

Depth to a lithic contact of chert and sandstone is 20 to 40 inches. The mean annual soil temperature is 50 to 56 degrees F. The difference between the mean summer and mean winter temperatures is less than 9 degrees F. The soil is moist in all parts between depths of 5 and 15 inches from mid-November to June. It is dry in some or all parts the rest of the year but is not dry in all parts for 45 consecutive days. Angular and subangular chert and sandstone fragments make up an average of 35 to 50 percent of the soil volume. The particle-size control section is 27 to 35 percent clay.

The A horizon has dry color of 5YR 5/4, 4/4, 4/3, or 3/4 or 7.5YR 5/2, 5/4, 4/2, 4/4, or 3/2 and moist color of 5YR 3/2 or 3/3 or 7.5YR 3/2. It has weak to moderate fine and medium subangular blocky structure. It is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/4 or 4/4 or 5YR 5/4, 4/4, 4/3, 3/3, or 3/4 and moist color of 5YR 3/3, 3/4, or 4/4 or 2.5YR 3/4 or 3/6. It is moderately acid to neutral and has weak fine and medium subangular blocky structure.

Wittenberg Series

Geographic Setting

The Wittenberg series consists of deep, well drained soils that formed in material weathered from strongly fractured, hard siliceous shale. Wittenberg soils are on uplands. Slopes are 9 to 75 percent. Elevations range from 500 to 1,300 feet. The climate is subhumid mesothermal and consists of cool, foggy summers and cool, moist

winters. The mean annual precipitation is 30 to 42 inches. The mean temperature in January is 50 degrees F, the mean temperature in July is 60 degrees F, and the mean annual temperature is 55 degrees F. The frost-free season is 300 to 365 days.

Geographically Associated Soils

These associated soils include the competing Centissima and Palomarin soils and Bayview, Cronkhite, Inverness, Limantour, and Pablo soils. Bayview and Pablo soils are less than 20 inches deep to a lithic contact. Cronkhite and Inverness soils have an argillic horizon. Limantour soils have a thick mollic epipedon and a fine-loamy particle-size control section.

Taxonomic Classification

Loamy-skeletal, mixed, superactive, isomesic Humic Pachic Dystrudepts

Typical Pedon

Wittenberg very gravelly loam; in Point Reyes National Seashore (in Marin County, California); 2.3 miles on Stewarts Trail from Five Brooks Trailhead and 100 feet north of Stewarts Train, on an east-facing convex slope of 65 percent, under Douglas-fir, California laurel, trees, blueberry, fir, and annual forbs; lat. 37 degrees 59 minutes 51.74 seconds N. and long. 122 degrees 46 minutes 13.53 seconds W.; UTM 520156E 4205585N. (Colors are for dry soil unless otherwise stated. When described on March 16, 1977, the soil was moist throughout.)

Oe—4 inches to 0; litter and duff.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark gray (10YR 3/1) moist; weak fine subangular blocky structure; soft, friable; slightly sticky and slightly plastic; many very fine and fine and few medium roots; many very fine interstitial pores; 40 percent angular siliceous pebbles 2 to 50 millimeters in diameter; strongly acid (pH 5.3); clear smooth boundary. (3 to 7 inches thick)

A2—6 to 16 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, friable; slightly sticky and slightly plastic; many very fine and fine and few coarse roots; many very fine interstitial pores; 35 percent angular siliceous pebbles 2 to 50 millimeters in diameter; strongly acid (pH 5.5); diffuse smooth boundary. (4 to 10 inches thick)

A3—16 to 26 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, friable; slightly sticky and slightly plastic; many very fine and fine and few coarse roots; many very fine interstitial pores; 35 percent angular siliceous pebbles 2 to 70 millimeters in diameter; strongly acid (pH 5.5); clear wavy boundary. (3 to 10 inches thick)

C1—26 to 37 inches; yellowish brown (10YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; massive; soft, friable; slightly sticky and slightly plastic; common fine and medium and few coarse roots; many very fine and fine interstitial and few fine tubular pores; 45 percent angular siliceous pebbles 2 to 70 millimeters in diameter; strongly acid (pH 5.5); gradual wavy boundary. (6 to 15 inches thick)

C2—37 to 50 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; massive; soft, friable; slightly sticky and slightly plastic; common fine and medium and few coarse roots; many very fine and fine interstitial pores; 45 percent angular siliceous pebbles 2 to 70 millimeters in diameter; strongly acid (pH 5.5); clear irregular boundary. (6 to 20 inches thick)

R—50 inches; hard, highly fractured siliceous shale that can be dug with difficulty with a hand tool.

Range in Characteristics

Depth to a lithic contact is 40 to 60 inches. The mean annual soil temperature is 50 to 56 degrees F. The difference between the mean summer and mean winter temperatures is less than 9 degrees F. The soil moisture control section is moist in all parts for 275 to 300 days. The particle-size control section averages 35 to 60 percent gravel. The soil is loam throughout and averages 20 to 27 percent clay. Reaction is moderately acid to very strongly acid throughout the profile. Base saturation is less than 20 percent throughout the profile.

The A horizon has dry color of 10YR 4/2, 5/2, or 5/3 or 7.5YR 3/2, 4/2, or 5/2 and moist color of 10YR 3/1, 3/2, or 3/3 or 7.5YR 3/2. It has weak or moderate subangular blocky or granular structure. Consistence is soft or slightly hard.

The C horizon has dry color of 10YR 5/4, 5/6, 6/2, or 6/3 or 7.5YR 5/4, 5/6, 6/4, or 6/6. It has moderate subangular blocky structure or is massive. Consistence is soft or slightly hard.

Formation of the Soils

This section describes the factors of soil formation and relates them to the soils in the survey area. It also discusses the processes of horizon differentiation.

Factors of Soil Formation

By Susan Burlew Southard, Natural Resources Conservation Service.

Soil covers the surface of the earth as a three-dimensional body of varying thickness and is made up of different proportions of organic and mineral material, pore space with gases, and water. Soils differ in their appearance, productivity, and management requirements due to their chemical and physical properties. The characteristics and properties of soils are determined by physical and chemical processes that result from the interaction of five soil-forming factors. These factors of soil formation are interdependent, and few generalizations can be made regarding any one factor unless the effects of the other factors are known. The term “pedogenesis” is often used to connote the processes of soil formation.

The interacting soil-forming factors are parent material, climate, organisms, time, and relief or topography (Jenny, 1941). Parent material is the source material in which soils formed. Soils are influenced by the texture and structure of the parent material and its mineralogical and chemical composition. Climate is predominantly the temperature and kind and amount of precipitation. Climate is also the seasonal distribution of temperature and precipitation. Organisms are the plants and other organisms living in and on the soil, including humans. Time refers to how long the soil-forming factors have been operating on a particular landscape. Relief or topography is the shape and elevation of the landscape. It affects internal and external soil properties, such as soil drainage, aeration, susceptibility to erosion, and the soil's exposure to the sun and wind.

The processes of soil formation are a sequence of often overlapping events, involving biogeochemical reactions that are energized by climate and spatially related to relief or topography (Buol and others, 2011). The physical and chemical properties of soil are altered by these reactions over time. The influence of these soil-forming factors varies among all national park lands or within localities of an individual park. Soils may differ significantly from place to place in a park and within very short distances as a result of complex interactions among the five factors. On the other hand, in some instances, parks may have vast stretches of the same type of a soil because of uniform soil-forming factors.

Parent Material

The unconsolidated mass in which soils form is called parent material. Mineral soil parent material is a product of weathering of underlying bedrock in place or weathering of material that has been transported. Organic soils form in place from the accumulation and decomposition of plant material, such as wood, leaves, and aquatic plants. Weathering refers to the chemical and physical disintegration and decomposition of parent material. Few soils weather directly from the underlying rocks.

More commonly, soils form in materials that have moved in from elsewhere. Soils generally have a dominant kind of parent material but are influenced by other types of parent material. Material may have been moved only a few feet by gravity (colluvial parent material) or transported long distances by wind (eolian parent material) or water (alluvial parent material). Soils are said to have residual parent material if they formed directly from underlying rocks (residuum) or *in situ* from plant material. Soils that formed in residuum may have the same general chemistry as the original rocks or plants depending on the degree of weathering that has occurred. Table 5 shows the dominant parent material for the major soils in each map unit in the survey area.

Golden Gate National Recreation Area (NRA) lies on both sides of the active San Andreas Fault Zone. In Golden Gate NRA, the San Andreas Fault extends northwest from just east of the Phleger Estate near the town of Woodside, continues north to near Fort Funston, and then runs directly through Bolinas Lagoon and Tomales Bay. Standing on the east side of Tomales Bay, which appears almost fjord-like in shape, it is very easy to see the differences in parent material and soils. The east side of Tomales Bay is all uplifted Franciscan Complex with mostly shallow and moderately deep soils. The landscape is very steep and has grass and scrub vegetation. The west side is weathered granite that has a greater soil-rooting depth and soil conditions that support dense forest vegetation.

Golden Gate NRA sits above the San Andreas Fault, a transform fault that moves the Pacific tectonic plate northward relative to the North American tectonic plate. Millions of years ago the area was part of an active subduction zone where oceanic crust was forced beneath continental crust. The rocks that compose the bedrock of Golden Gate NRA were formed along this zone 80 to 140 million years ago. Sandstone, shale, basalt, and chert are among the types of bedrock in the park. These rocks belong to the Franciscan Complex, and most were originally deposited on the ocean floor. The rocks were variably deformed and partly metamorphosed as the ocean floor was thrust under the western edge of the North American plate. This resulted in a landscape of eroded, sheared, and crushed sandstone and shale. Sporadically placed blocks of more resistant rock form prominent rock outcrops in the park. The variability of soils in the park is strongly influenced by the changes in rock type over short distances and the degree of rock deformation due to tectonics. The San Andreas Fault is the major fault in the park, but many smaller active and inactive faults also exist.

West of the San Andreas Fault Zone, granite forms the backbone of some areas, such as Inverness Ridge, on Point Reyes Peninsula in Point Reyes National Seashore and in small adjacent areas of Golden Gate NRA, and on Montara Mountain, to the south of San Francisco. This granite originated in southern California and has been carried northward along the fault for 300 miles (McPhee, 1993). Inverness soils mapped along the Inverness Ridge in Point Reyes and in adjacent areas within Golden Gate NRA formed from residuum and colluvium derived from the granite. The rock parent material is highly weathered, and the soils are deep. Inverness soils have a zone of clay accumulation in the subsoil and have a high water-holding capacity. Soil reaction (pH) is usually less than 6.0 (see table 18).

The Franciscan Complex lies to the east of the San Andreas Fault Zone and has varied degrees of deformation. The amount of deformation is related to the proximity to the fault zone. Road cuts in the area often reveal the degree of deformation in the rock layers (fig. 5). Because of its resistance to weathering, chert is exposed on many of the ridgetops and summits in the Marin Headlands of Golden Gate NRA. The chert dictates soil depth. The radiolarian chert underlying the soil is highly fractured, but the rock fragments do not slake (they remain cohesive) when immersed in water. The soil above the chert ends abruptly above the contact with lithic bedrock (see table 20). Tamalpais soils formed in both residuum and colluvium derived from finely bedded radiolarian chert and a fractured variety of sandstone referred to as graywacke



Figure 5.—Radiolarian chert exposed in road cuts shows the deformation of rock layers that lie in close proximity to the San Andreas Fault.

(fig. 6). The type location for the Tamalpais series is in the Marin Headlands of Golden Gate NRA near Fort Barry. No other soils identified in the country have the same soil taxonomic placement as Tamalpais. Tamalpais soils are also mapped along Conzelman Road (south of Bunker Road), on hillslopes surrounding Gerbode Valley, in Rodeo Valley along the Tunnel Road, and at Fort Mason. They are moderately deep and on steep slopes (fig. 7). The color and chemical and physical properties of the soils are mostly inherited from the red chert.

In contrast, soils that formed over granite do not end abruptly but have a highly weathered, more gradual contact. The difference in soil depth is related to the degree of weathering of the underlying rock and the resistance of the parent material. Inverness soils, mentioned in previous paragraphs, are deep and weathered from granite.

The Cronkhite series has its type location in Golden Gate NRA. The type location is north of Muir Beach and east of Muir Woods Road (fig. 8). Cronkhite soils formed in residuum and colluvium from weathered shale and sandstone of the Franciscan Complex. Typically, the weathered rock at the bottom of the profile slakes (breaks up in water) and can be crushed by fingers. A slaking, weathered zone in soil is called densic material if it is also root restrictive. Cronkhite soils have a thick, dark surface



Figure 6.—Close-up of graywacke associated with the Franciscan Complex in Golden Gate National Recreation Area.

horizon of loam or clay loam and a zone of clay accumulation (i.e., an argillic horizon) in the subsoil that extends to the weathered parent material. Because the clay in Cronkhite soils is composed of minerals that shrink and swell during drying and wetting, there may be visible cracking of the soil surface during dry seasons (see table 15). Cronkhite soils are mainly on steep hillslopes supporting coyote bush, poison oak, and ryegrass.

The influence of residual parent material on soil can be a major factor in the development of ecological niches in a park. Residual parent material determines soil depth and soil chemistry, which can determine the types of vegetation that can grow. This is evident in areas of Henneke and Montara soils mapped in Golden Gate NRA. These soils lie in a northwest- to southeast-trending line associated with the San Andreas Fault. They occur on the east side of the fault and are associated with serpentinite, an ultramafic rock, that is part of the Franciscan Complex. Serpentinite occurs in areas where oceanic crust is subducted (pushed below), hydrothermally altered, and then pushed up again along fault zones. Variable physical and chemical alteration of the serpentinite rock mass occurred during migration to the surface. The chemistry of the soils inherited from the serpentinite results in rare plant communities. Because of the low content of calcium and high content of magnesium in these soils, only plants that can adapt to these growth-limiting conditions survive. Maymen soils are mapped as far south as the Phleger Estate, on the lower elevations of Montara Mountain and around Mount Tamalpais. Henneke soils are mapped in the northern part of the park, west of the Nicasio Reservoir. There are also isolated areas of Henneke soils on Angel Island. Some of the rare and endangered plants thriving on soils derived from serpentinite in Golden Gate NRA are Presidio clarkia (*Clarkia franciscana*), San Francisco wallflower (*Erysimum franciscanum*), Raven's manzanita (*Arctostaphylos hookeri* var. *ravenii*), and Franciscan thistle (*Cirsium andrewsii*) (Elder, 2001).

One type of eolian parent material is windblown sand. Sirdrak soils formed from windblown beach sand. They were first identified and mapped in Point Reyes National

Seashore and are also mapped in Golden Gate NRA. No other soils with the same soil classification as Sirdrak have been identified in the United States. A large area of Sirdrak soils occurs directly north of Battery Mendell, west of the YMCA, and east of Bird Island. These soils are also mapped on Fort Funston to the south (fig. 9). Sirdrak soils are very deep and sandy and have a hummocky surface. Typically, they are mapped on uplifted marine terraces where the wind has blown sand from beaches and from active unvegetated dunes on the shoreline. The surface is typically very dark brown due to the accumulation of organic matter. Organic matter accumulates in soils that stay cool and moist along the ocean. Underlying Sirdrak soils are sedimentary rocks of the Merced Formation. The Merced Formation has been cut by the San Andreas Fault and carried north. It can be seen along the bluffs of Bolinas on the Point Reyes Peninsula unit of Golden Gate NRA as well as south along Ocean Beach, on the San Francisco Peninsula unit of the park near Fort Funston (National Park Service website).

Alluvium, or parent material deposited by running water, can have different textures, depending on whether the water moves quickly or slowly. Fast-moving water deposits gravel, rocks, and sand. Slow-moving water deposits fine textured material (clay and silt) when sediments in the water settle out. Blucher and Cole soils are examples of soils that formed from alluvium in Golden Gate NRA. These soils are mapped together in a complex directly in line with the San Andreas Fault, in low-lying areas associated with west-flowing streams that drain the Bolinas Ridge. They are mapped in small delineations and on level to gently sloping terrain from Green Gulch near Muir Beach to Point Reyes Station south of Tomales Bay (fig. 10). Blucher soils have no horizon development and have a seasonal perched water table above a depth of 4.3 feet and another water table at a depth related to its low landscape position (see table 19). Cole soils are finer textured and are also somewhat poorly drained. Because of wetness, both Blucher and Cole soils are classified as hydric soils (see table 4).

The youngest geomorphic surfaces generally are lagoons, flood plains, and tidal basin floors associated with rivers and streams where alluvium has been deposited. Ongoing sea-level rise, associated with the melting of continental glaciers since the last ice age, is probably



Figure 7.—Road cut showing landscape and profile of the moderately deep Tamalpais soils along Panorama Highway near Muir Woods.



Figure 8.—Landscape of Cronkhite soils near the series type location above Redwood Creek. This area is located in map unit 459409 (Cronkhite-Barnabe complex, 30 to 50 percent slopes).



Figure 9.—An area of Sidrak soils near Fort Funston (foreground). These soils are derived from sands blown up onto uplifted marine terraces. The fog bank (seen in the distance) and the maritime climate keep soils cool and moist with little seasonal variation in temperature.

Olema Valley soil-landscape relationships



Figure 10.—View of Olema Valley north of Bolinas Lagoon. It shows the typical landscape position of six different soils.

responsible for the flooding and sediment filling of valleys beneath Bolinas Lagoon during the Holocene. Soils, such as Blucher and Cole, that are deeper and darker due to the accumulation of organic matter occur on the wet bottom land. Blucher and Cole soils have a content of soil carbon that is higher than average for soils in Golden Gate NRA (see table 17).

Climate

Differences in climate can result in differences in soils. Soil temperature and moisture influence soil formation and are the two most commonly measured features of climate. Weathering is most active when soils are moist and warm because these soil conditions are conducive to rapid chemical reactions and increased biological activity in the soil. Cooler temperatures result in slower chemical reactions. While average temperatures and precipitation are important in determining soil properties, the extremes of climate in any given locale also play a major role in the rate of soil formation.

During periods of rainfall, water carrying dissolved or suspended solids moves through the soil in a process called leaching. The leaching process becomes active with the onset of rainfall. Different temperature and moisture amounts cause different patterns of weathering and leaching in the soil. Seasonal and daily changes in temperature affect moisture effectiveness, biological activity, rates of chemical reactions, and kinds of vegetation.

Present-day climate variations are the result of topography, relief, and, in the case of Golden Gate NRA, distance from the ocean. Most of Golden Gate NRA has a marine climate featuring cool, moist winters and cool, foggy summers. Summer

temperatures are influenced by low fog in the mornings and a steady flow of marine air from the Pacific Ocean in the afternoons. Because of the marine air flow, extreme temperatures are rare. The marine influence diminishes east of the Coast Range, where the summers become warmer and winters become slightly cooler. The temperature of the sea water greatly influences the air temperature in Golden Gate NRA.

Along the coast, transpiration and evaporation rates are low due to summer fog. Fog and rainfall help to develop soils with thick, darkened surface horizons. There is great increase in temperatures and decrease in moisture amounts from the coast to inland. This affects the rate of the decomposition and accumulation of organic matter and the weathering of minerals in the soils of Golden Gate NRA.

Many of the soils in Golden Gate NRA have an isomesic soil climate, signifying that the mean winter and mean summer soil temperatures at a depth of 50 centimeters differ by less than 11 degrees F (6 degrees C) and the mean annual soil temperature is 47 degrees F (8 degrees C) or higher but less than 59 degrees F (15 degrees C). The isomesic soil temperature regime in the park is due to the moderating affects of the ocean. The further the distance inland the less likely the soils will have an isomesic soil temperature regime.

Some soils are only mapped in certain climates. McGarvey soils occur in the Phleger Estate and are associated with steep drainages on north exposures (fig. 11). Because these soils are cool and moist, they support Douglas-fir and coastal redwood. The additional effective moisture on north exposures and the chemical properties influenced by the trees have enhanced the weathering of the soils. The soil microclimate creates an ecological niche. McGarvey soils have a zone of clay accumulation in the subsoil, which is reddish brown clay loam and clay over fractured sandstone. Alambique soils are mapped in complex with McGarvey soils but have less soil development than McGarvey soils.

Some drier areas of the park are susceptible to wildfires. Wildfires can alter the physical and chemical properties of the soil. Erosion may be accelerated by the loss of vegetation and surface ground cover. Slopes may be destabilized by increased runoff. The areas prone to wildfire are inland from the ocean and dominated by scrubland and prairie. The vegetation of scrubland communities is fire adapted. Plant oils from scrublands or chaparral vegetation create hydrophobic soil that limits water penetration and increases runoff after fires occur. This creates a cycle of natural erosion that limits soil depth. Consequently, soils that are in areas susceptible to fires and that support chaparral are typically shallow. Soil depth is also limited by serpentinite or sandstone bedrock. Examples of shallow soils in areas susceptible to wildfire within Golden Gate NRA are Maymen, Maymen variant, Montara, and Henneke.

Organisms

Plants, animals, micro-organisms, and humans affect the formation and properties of soils. Plants capture solar energy via photosynthesis and transfer that energy to the soil. This energy is a fundamental driver of many soil processes. Plants increase soil stability by protecting the surface against wind and water erosion. Animals and micro-organisms mix soils and form burrows and pores. Abandoned animal tunnels commonly are filled with loose material from the overlying horizons and transmit water more readily than the surrounding undisturbed soil material. Fungi and bacteria are the primary organisms that decompose organic matter and add nutrients to the soil. Micro-organisms affect chemical exchanges between roots and soil.

Plant roots open channels in the soils. Taproots open pathways through dense layers. Plant roots also help to develop soil structure and aggregate stability. Leaves from plants fall to the surface and decompose. Organisms decompose leaf litter and roots and mix them with the upper part of the soil, resulting in the cycling of nutrients that returns energy back to vegetation.



Figure 11.—Coastal redwood on the Phleger Estate in Golden Gate National Recreation Area. The estate is partially mapped as Alambique-McGarvey complex, 30 to 75 percent slopes. Narrow drainages provide enough soil moisture for coastal redwoods to thrive.

Golden Gate NRA has forest, scrub, grassland, and wetland vegetation. Each of these vegetation types affects soil formation and soil types in different ways.

There are redwood forests in Muir Woods and in the Phleger Estate in San Mateo County. Two trees are characteristically associated with coast redwood—tanbark oak and California bay laurel. Redwoods need moist areas in valleys or near springs to thrive. In the understory, shrubs such as hazelnut, thimbleberry, western azalea, and



Figure 12.—Tree roots help hold soils in place and prevent downslope erosion, thereby increasing water penetration into the soil and reducing surface water runoff. (Image from John Muir National Historic Site.)

wood rose are common. Forested areas have woody roots that help break up rocks, resulting in channels that increase water penetration and soil depth (fig. 12). Besides the mechanical breaking of rocks by large roots, trees capture energy and produce organic matter through photosynthesis. Forested ecosystems in Golden Gate NRA include those with redwood and Douglas-fir in areas of Centissima, Palomarin, and Wittenberg soils. The needle litter helps prevent nutrient loss, conserves soil moisture, and reduces raindrop impact.

Oak woodlands also occur in Golden Gate NRA near Mount Tamalpais. These woodlands are named after the coast live oak. Live oaks occur in small stands mixed with grasslands throughout the park. The understory, which is usually in sunny areas, consists of a few shrubs and a wide variety of herbaceous plants. The open oak canopy results in warm soils that dry out during dry seasons. Understory shrubs include buckbrush, coffee berry, toyon, poison oak, and snowberry, which can leave a thick leaf litter on the soil. McMullin and Tocaloma soils are mapped in these areas.

Wetland estuaries provide a transition zone from ocean to land. Freshwater streams meet saltwater tides to create one of the most fertile habitats on earth. Fast-growing marsh vegetation provides habitat for decomposers, and the food system is based on decomposed plant materials. The soils of the tidal areas are either submerged by salty water or left high and dry as the tides recede. Marsh organisms are distributed at different tidal levels, depending on their ability to withstand the stress of tidal inundation.

Adaptations of salt marsh species include mechanisms for salt extrusion, such as stems that have large air spaces that allow oxygen from the air to reach the roots in saturated soils. Some species are also succulent, retaining water in their tissues. Marshes have three distinct elevation zones and associated soils: the low marsh, the middle marsh, and the high marsh. The low marsh is completely submerged daily

and dominated by cordgrass and pickleweed. Hydraquents, saline, are mapped in low marshes. The middle marsh is partially submerged daily and has the highest diversity of species. Novato soils commonly occur in middle marshes. The high marsh is inundated only during very high tides and dominated by marsh gumplant and marsh rosemary. Humaquepts are mapped in high marshes.

Some areas of Golden Gate NRA were once covered with prairies dominated by perennial bunchgrasses. Distinct soils formed under these prairies. Bunchgrasses such as purple needlegrass, tufted hairgrass, blue wildrye, and California oatgrass form discrete clumps. These clumps help stabilize the soil. Los Osos, Bonnydoon, Gilroy, Olompali, Yorkville, and Soulajoule formed under these prairies.

Scrub includes areas of low shrubs common along the California coast. Coastal scrub plants must contend with harsh conditions, such as shearing winds and steep, rocky, shallow soils (fig. 13). Henneke soils, Xerorthents, Barnabe variant soils, Kron soils, Cronkhite soils, and Orthents have these harsh conditions. The scrub is dominantly coyotebrush, California sage, and poison oak and includes, in some areas, sticky monkeyflower, toyon, and coffee berry. All of these shrubs have thick oily leaves



Figure 13.—View looking south from the Muir Beach Overlook showing scrub oak in map unit 459451 (Rock outcrop-Xerorthents complex, 50 to 75 percent slopes). Because the Xerorthents are so variable in depth, they are not identified as a soil series. Ridgetops in the distance are in map unit 459468 (Tamalpais-Barnabe variant very gravelly loams, 30 to 50 percent slopes).

that are useful in temperature regulation during California's long summer drought. The thick oily leaves can make the soils hydrophobic (a condition where water fails to percolate into the soil). This can increase surface runoff.

Coastal scrub is similar to dune scrub but it occurs on sandy and deep soils. The soils with dune scrub have low contents of moisture and nutrients and are subject to winds and salty air. Salty air can increase the sodium content of soils. Many dune scrub plants have water-conserving adaptations, such as small leaves, hairy leaves, waxy or oily leaves, or deep root systems. Sirdrak soils are very deep and sandy and support dune scrub vegetation. Rare and endangered plants have adapted to these soils that have a cool maritime climate. Two of these plants are dune gilia (*Gilia capitata*) and San Francisco lessingia (*Lessingia germanorum*) (Elder, 2001). The dunes are stabilized by a cover of vegetation.

Chapparal is a specific type of scrubland that occurs along the California coast in Golden Gate NRA. The word chaparral comes from Spain, where it refers to brushy areas dominated by chaparro, a kind of scrub oak. Most chaparral shrubs are tough-leaved evergreens. Many chaparral species have thorns or prickly leaves that guard against grazing. Chaparral occurs on dry soils, which are common on the south-facing slopes of coastal mountains adjacent to coastal scrub or woodlands. These soils include Maymen, Maymen variant, and Montara.

Humans have cut and filled and mixed the soils of the park extensively in some places. There are areas where soils have been used as cut and fill for military installations, prisons, roads and streets, bridge foundations, and housing and office developments. Historically, Golden Gate NRA served as a major port for the western United States. Because of the steep slopes adjacent to the areas of water and shallow lagoons (which comprised most of the waterways), however, the area required a lot of dredging, filling, and leveling in order to serve as a port. Dredged lagoon soils have low strength and are susceptible to subsidence. Unstable fill is prone to subsidence during earthquakes. Cut slopes, if made into soils with unconsolidated bedrock, can result in landslides and soil slippage. Areas along the waterfront were often filled with a mix of materials, including abandoned ships from the Gold Rush period, dredge spoils, and rock, sand, and unidentified debris that may have low performance as fill. Most of these areas are mapped as miscellaneous nonsoil areas or as Orthents.

Time

Over time, soils exhibit features that reflect the interaction of other soil-forming factors. Recently deposited material, such as material deposited by a flood, exhibits no features from soil development activities, and its properties are mostly inherited from the new material. The previous soil surface and underlying horizons have been buried. The time clock resets for these soils. The different horizons in a soil profile and the degree of development depend on the age of the landscape and the rate of the soil-forming processes, both of which represent time as a soil-forming factor. Terraces above the active flood plain, while similar in origin to the flood plain, are older land surfaces (old, abandoned flood plains), and thus the soils on these terraces exhibit more horizon development.

Olompali soils are very deep and well developed alluvial soils on uplifted marine terraces. They have an abrupt textural change from loam to clay that indicates a highly developed profile. Clay content jumps from 25 percent in the first horizon to 60 percent in the second horizon (see table 15). Because of the abrupt textural change, water movement is restricted to a depth of 1.5 feet during wet months (see table 19). This restriction is called a perched water table. Olompali soils are mapped in Golden Gate NRA along the east side of Tomales Bay.

Cortina soils are alluvial and on an active flood plain but, unlike Olompali soils which are on an inactive flood plain, have very little horizon development. They are mapped along Grandi Canyon Road south of Tomales Bay.



Figure 14.—Fort Baker in Golden Gate National Recreation Area. Most level areas in Fort Baker are manmade soils called Xerorthents, fill. The surrounding hills are mapped as Tamalpais-Barnabe variant very gravelly loams on slopes ranging from 15 to 50 percent. The Tamalpais and Barnabe variant soils formed from sandstone and chert.

Some of the youngest, or least developed, soils mapped in Golden Gate NRA are Xerorthents, fill (map unit 459495). These soils have no distinctive characteristics and no diagnostic subsurface horizons. They are recently created manmade soils and are typically composed of moved soil material or dredged material used as fill. Areas with these soils include parade grounds at Fort Baker (fig. 14), the Officer's Row in the Presidio, and the island of Alcatraz. Xerorthents that are derived from fill commonly have variable depths and are mapped in a complex with urban land areas. Urban land areas have been paved or have buildings on them. Fort Point is an urban land area and is considered nonsoil.

Other Xerorthents in the park formed naturally and are associated with rock outcrop along marine escarpments, such as those around Muir Beach (see figure 13).

Topography and Relief

Topography refers to the shape of the landscape, and relief refers to differences in elevation. The overall landscape in Golden Gate NRA, whether it consists of marine terraces, steep ridges, or tidal lagoons, is the result of erosional and depositional processes. These processes may have occurred in response to changes in climate, fluctuating sea levels, and/or tectonic activities. Cyclic periods of landscape stability and instability influence the types of soils that form on the park landscape. Table 5 shows the dominant landform on which the major soils in the survey area are located.

An example of the effects of topography and relief on soil formation and soil properties is Gerbode Valley (fig. 15). The well drained, rocky Tamalpais and Barnabe variant soils occur in the high, steep landscape positions surrounding this valley. Water flows from the hillslopes to the alluvial fans, helping to form the deep Rodeo soils that have some seasonal wetness. Rodeo soils are clayey because the finer particles have



Figure 15.—View looking east across Gerbode Valley from the Miwok Trail. The relationships between landscape position and soil type are evident. Hillslope soils (Tamalpais and Barnabe variant) are steep, well drained soils that have a high content of rock fragments. Soils on gently sloping, alluvial fans (Rodeo) are deep, clayey soils that have seasonal wetness. Soils in the level, lowest landscape positions (Humaquepts) are always wet.

been washed down the slopes to the fans. In the lowest landscape positions below the fans in the drainageways, the soils are usually saturated with water. These soils are Humaquepts that favor wetland vegetation. The conditions on the lowest part of the landscape favor slow rates of organic matter decomposition and high contents of soil organic matter.

Other examples of topography and relief on soil formation and properties include: 1) areas of Humaquepts, seeped; 2) areas of Novato soils; and 3) areas of Hydraquepts, saline. Humaquepts, seeped, have a high content of organic matter and formed in alluvium. They are mapped just north of the Marin Headlands Visitor Center and south of the Miwok Trail (fig. 16). Novato soils are mapped east of Sir Francis Drake Boulevard in the Tomales Bay Ecological Reserve. Hydraquepts, saline, are mapped in the tidal lagoon near the mouth of Redwood Creek at Muir Beach (fig. 17). Novato soils and Hydraquepts have plants that can live in the saline conditions created by intertidal waters. They are in low alluvial tidal areas that are always saturated with water. Because Novato soils are very deep, gray clays with salts and sulfuric materials, vegetation on these soils is mostly saltgrass and pickleweed.

In these three areas, because of landscape position and topography, the soils are wet, which retards the decomposition of marsh vegetation and results in organic matter accumulation. Approximately one half of soil organic matter is soil organic carbon. The soils have high organic carbon because additions of organic materials are submerged and saturated, which limits oxidation (see table 17). Their chemistry and wetness help form ecological niches.

The role of topography and relief on landscape instability and soil formation is evident in Sweeney Ridge on the San Francisco Peninsula. Sweeney Ridge is located east of the inactive Pilarcitos Fault and immediately west of the San Andreas Fault. Movement along these faults has broken off the rocks of Sweeney Ridge from the rest of North America. The thick beds of marine sandstone, conglomerate, and clay-siltstone strata of Sweeney Ridge slide northwesterly on the San Andreas Fault at a rate of between 1 and 2 inches per year. At the contact between the Franciscan Complex and the granitic rocks of Montara Mountain is the notorious Devil's Slide area, known for landslides and highway closures, where the two formations collide (fig. 18). Soils associated with the uplifted and faulted, unconsolidated Franciscan Complex have low slope stability in other areas of California as well.

Centissima, Palomarin, and Wittenberg soils are on the steepest parts of the landscape and formed mostly in colluvium derived from shale and sandstone of the Franciscan Complex. They are under coniferous vegetation and have dark surface horizons but have minimal subsoil horizon development due to natural downhill erosion processes. They are mapped in the northern part of Golden Gate NRA on the wooded hillslopes of the Bolinas Ridge and in Muir Woods (fig. 19). The type location for the Centissima series is located in Golden Gate NRA. The type locations for the Palomarin and Wittenberg series are located in Point Reyes National Seashore. Both Palomarin and Wittenberg soils are usually moist whereas Centissima soils may have seasonal drying. Wittenberg soils are the only soils identified in the United States with the present soil classification. Most of Muir Woods National Monument within Golden Gate NRA is also mapped as Centissimo soils.

Alambique soils are in the area of the Phleger Estate near King's Mountain. These soils have little horizon development because they are on unstable, steep mountain



Figure 16.—An area of Humaquepts, seeped. These wet, hydric soils are mapped in Gerbode Valley and along major tributaries of the Rodeo Lagoon.



Figure 17.—An area of Hydraquents, saline, along Redwood Creek. These soils are saline due to inundation by tidal water.



Figure 18.—The Devil's Slide area (adjacent to Golden Gate National Recreation Area) where the Franciscan Complex and the granitic Montara Mountain collide. The major soils mapped in the area are Miramar, Tierra, and Sheridan sandy loams associated with the granite of Montara Mountain.



Figure 19.—View of the southern extent of the Bolinas Ridge from Ocean View Trail in Muir Woods (in Golden Gate National Recreation Area) near the Panorama Highway. This landscape includes Centissima, Barnabe, Saurin, and Bonnydoon soils. Grasses and shrubs are predominantly in areas mapped as Saurin and Bonnydoon soils (map unit 459455). The steep, treed side slopes are in areas mapped as Centissima and Barnabe soils (map units 459403 and 459404).

slopes. They are mostly brown loam or sandy loam over weathered sandstone of the Franciscan Complex.

The slope and aspect of the overall landscape can affect soil moisture and temperature. Slopes facing the sun are warmer than those facing away from the sun. Tocaloma and Saurin soils are mapped in association with slope aspect. In hilly, steep areas east of Olema in Golden Gate NRA, Tocaloma soils are mapped on north slopes while Saurin soils are mapped predominantly on south slopes. These soils occur together in the same map unit. The soils are similar taxonomically but differ in soil temperature regime and depth. Saurin soils are shallower, drier, and warmer than the Tocaloma soils.

Processes of Soil Horizon Differentiation

The soil profile records the activities of the five soil-forming factors. It consists of a succession of layers, or horizons, that extends from the surface down to the parent material. The horizons differ in one or more properties, for example, thickness, color, texture, structure, consistence, porosity, or reaction (pH).

There are numerous processes of soil formation that result in the development of soil horizons (Buol and others, 2011). In Golden Gate NRA some of the main processes are lessivage, enrichment, decomposition, synthesis, and leaching. Lessivage is the physical movement of small mineral particles from one area to another area in the soil profile. An example is the movement of small clay particles downward in the profile. Enrichment is the addition of material to soil, such as additions of sand from the beach to the surface of Sirdrak soils or the addition of plant litter to the surface of forested soils, such as Centissimo. Decomposition is the breakdown of minerals or organic material into new, more stable materials. Leaching is

the translocation of materials in solution from one horizon to another or their removal from the soil entirely. Synthesis is the formation of new minerals or organic materials.

Soil profiles consist commonly of six major horizons or layers, designated as O, A, E, B, C, and R.

The O horizon consists of decomposing organic materials.

The A horizon is a mineral horizon that has an organic matter content that is higher than that of underlying horizons but lower than that of overlying O horizons. The A horizon may be the surface layer if there is no O horizon.

The E horizon is a zone of maximum leaching of materials that are usually lighter in color than horizons above or below. It usually occurs in wetter climates or wetter soil conditions on certain landscapes.

The B horizon is a subsoil zone of accumulation of materials moved from O, A, or E horizons or of soil material formed in place. It is the horizon of maximum accumulation of dissolved or suspended materials, for example, iron, clay, or calcium carbonate. Color plays an important part in distinguishing B horizons. Not all soils have a B horizon.

The C horizon is usually the bottom part of a soil profile and has properties similar to the parent material. It can be at the surface in undeveloped soils, such as dune soils. The C horizon is relatively unchanged by the soil-forming processes, such as in Centissima soils.

The R layer is hard bedrock but may be fractured. In Golden Gate NRA, this layer underlies many of the soils and is commonly chert or sandstone bedrock. For example, Tamalpais soils have an R layer.

Pedogenesis in Rodeo Soils

Rodeo soils are a good example of soils to use in illustrating the soil-forming factors and processes of soil horizonation, or “pedogenesis.” Like the Centissima, Cronkhite, and Tamalpais series, the Rodeo series has its type location in Golden Gate NRA. Most of the acreage of Rodeo soils occurs along Rodeo Valley and its tributaries that drain to the Rodeo Lagoon. Overall, these soils have a high clay content and dark brown colors and are very deep. All five factors of soil formation can be identified in this soil as well as many of the soil-forming processes.

Interactions of Soil-Forming Factors

Topography, parent material, and time. Rodeo soils are mapped on gently sloping topography, in narrow coastal valleys. Because they are in relatively stable positions, they do not erode like the soils on steep uplands. Over time, Rodeo soils have become very deep and now have obvious horizon differentiation. They developed in alluvium from the surrounding, eroding hillslopes. The high clay content of these soils has been inherited from the soils eroding on the nearby hillslopes (such as Tamalpais soils). The upland soils developed from radiolarian chert and sandstone. Soil material has been moved from one area to another (enrichment). The clay in the profile has moved from one horizon to another through the process of lessivage and has formed in place through the process of decomposition of primary minerals and the subsequent synthesis of secondary clay minerals. Primary minerals are the unweathered, original minerals that comprise a rock.

Topography, organisms, and climate. The surface A horizons of Rodeo soils are dark due to a high content of organic matter. Decomposition of roots, leaves, and stems by soil microbes result in a surface horizon that is enriched with newly synthesized soil organic matter. The high content of organic matter in Rodeo soils is due to the higher plant productivity of the soils as well as to the wetter soil microclimate conditions that reduce the rates of organic matter oxidation. Because



Figure 20.—Cracking of the soil surface in an area of Rodeo soils. The clay in Rodeo soils has a shrink-swell potential because of clay type (see table 15). The clay content of these soils can be as high as 50 percent, by weight.

these soils are in lower fan positions, they are wetter than the nearby geographically associated soils in higher landscape positions. Because of wetness, they are classified as hydric.

Parent material and climate. Rodeo soils have a high shrink-swell potential, and surface cracks occur during seasonal dry periods. The high shrink-swell potential is due to the type (smectite) and size of clay minerals weathered from the parent material. During the wetter months (December to April), the surface cracks (fig. 20) may close completely and wetness (a water table) occurs at a depth of 18 to 36 inches.

Soil Horizonation

Rodeo soils are not described as having an O horizon. The A horizons in these soils have an accumulation of stable organic matter intimately mixed with mineral soil material. The surface A horizon, according to the soil scientists mapping in the area, appeared to have been plowed (or mechanically disturbed in some way) to a depth of 6 inches at some time in the past. The mixing of a soil is a soil-forming process called pedoturbation. The second A horizon appeared to be unaltered by a plow or mixed.

Immediately below the second A horizon, Rodeo soils have a zone that has been leached of materials. This zone is called an E horizon. The soil structure of an E horizon is commonly platy or massive (structureless) due to the lack of aggregating minerals or due to the lack of organic matter. Both of these soil constituents have been leached from the E horizon of Rodeo soils. The change in structure or lack of structure in an E horizon makes it very different from the overlying or underlying horizons. Below the E horizon, at a depth of about 20 inches, Rodeo soils have a B horizon

that probably extends to below a depth of 75 inches. The B horizon formed due to lessivage and *in situ* clay synthesis. Lessivage and the shrinking and swelling of the clay helped to develop the blocky structure in the B horizon.

The B horizon in Rodeo soils is further subdivided into several types of B subhorizons due to wetness and extended periods of reduction. The reduction of iron and manganese results in variegated color and the synthesis of cemented iron or manganese concretions. Oxidation and reduction reactions have resulted in the synthesis of new mineral and organic materials in the lower B horizons of Rodeo soils. The gray colors in these horizons result from the reduction of iron and manganese and the loss of brighter colored pigments in the soil.

At present, Rodeo soils are the only named soils in the United States with their current soil taxonomy (see the section "Classification of the Soils").

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Glossary

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

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

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

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

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

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

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

Very low	0 to 3
Low	3 to 6
Moderate.....	6 to 9
High	9 to 12
Very high.....	more than 12

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

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

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

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

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

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

- Claypan.** A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
- Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
- Coarse textured soil.** Sand or loamy sand.
- Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- Culmination of the mean annual increment (CMAI).** The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.
- Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.
- Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”
- Drainage, surface.** Runoff, or surface flow of water, from an area.
- Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
- Erosion (geologic).* Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
- Erosion (accelerated).* Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.
- Fine textured soil.** Sandy clay, silty clay, or clay.
- Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
- Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.
- Forb.** Any herbaceous plant not a grass or a sedge.
- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hill.** A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
- Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
- O horizon.*—An organic layer of fresh and decaying plant residue.
- A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
- E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
- B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.
- C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.
- Cr horizon.*—Soft, consolidated bedrock beneath the soil.

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

Hydrologic soil groups. Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

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

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

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

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

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

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

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

LEP. See Linear extensibility percent.

Linear extensibility (LE). Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $1/3$ - or $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Linear extensibility percent. Refers to the percent change in linear extensibility.

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

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

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

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

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

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

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

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

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low.....	1.0 to 2.0 percent
Moderate.....	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high.....	more than 8.0 percent

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

Parent material. The unconsolidated organic and mineral material in which soil forms.

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

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

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow.....	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow.....	0.2 to 0.6 inch
Moderate.....	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid.....	more than 20 inches

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

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

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

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

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

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

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

Potential native plant community. See Climax plant community.

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

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

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

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

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

Ultra acid.....	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid.....	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline.....	7.4 to 7.8
Moderately alkaline.....	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline.....	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

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

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

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

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

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

- Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.
- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.
- Series, soil.** A group of soils that have profiles that are almost alike. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- Shale.** Sedimentary rock formed by the hardening of a clay deposit.
- Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Siltstone.** Sedimentary rock made up of dominantly silt-sized particles.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.
- Sodic (alkali) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.
- Sodicity.** The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $\text{Ca}^{++} + \text{Mg}^{++}$. The degrees of sodicity and their respective ratios are:

Slight.....	less than 13:1
Moderate.....	13-30:1
Strong	more than 30:1

- Sodium adsorption ratio (SAR).** A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.
- Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.
- Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.
- Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25

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Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay.....	less than 0.002

- Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.
- Stone line.** A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.
- Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.
- Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.
- Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).
- Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.
- Substratum.** The part of the soil below the solum.
- Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.
- Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”
- Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
- Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- Terrace (geologic).** An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- Upland.** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

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

Tables

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend

Map unit symbol and map unit name	Components in map unit	Percent of map unit
455964: Alambique sandy loam, 15 to 75 percent slopes-----	Alambique	85
	Rock outcrop	3
	Unnamed soils	6
	Zeni	3
	Zeni variant	3
455965: Alambique-McGarvey complex, 30 to 75 percent slopes-----	Alambique	45
	McGarvey	35
	Maymen	3
	Rock outcrop	3
	Unnamed soils	12
455966: Barnabe-Candlestick complex, 30 to 75 percent slopes-----	Barnabe	45
	Candlestick	35
	Buriburi	3
	Candlestick variant	3
	Kron	3
	Rock outcrop	3
	Unnamed soils	3
455967: Barnabe-Rock outcrop complex, 15 to 75 percent slopes-----	Barnabe	40
	Rock outcrop	40
	Buriburi	3
	Candlestick	3
	Kron	3
	Unnamed soils	9
455970: Candlestick-Barnabe complex, 30 to 50 percent slopes-----	Candlestick	45
	Barnabe	25
	Buriburi	4
	Kron	4
	Orthents, cut and fill	4
	Rock outcrop	4
	Unnamed soils	4

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Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
455971: Candlestick-Kron-Buriburi complex, 30 to 75 percent slopes-----	Candlestick	40
	Kron	25
	Buriburi	20
	Barnabe	2
	Orthents, cut and fill	2
	Rock outcrop	2
	Typic Argiustolls	2
	Unnamed soils	6
455972: Candlestick variant loam, 2 to 15 percent slopes-----	Candlestick variant	85
	Unnamed soils	10
455973: Candlestick variant loam, 15 to 30 percent slopes-----	Candlestick variant	85
	Unnamed soils	9
455974: Fagan loam, 15 to 50 percent slopes-----	Fagan	85
	Maymen	4
	Obispo	4
	Rock outcrop	4
	Unnamed soils	3
455976: Los Gatos loam, 30 to 75 percent slopes-----	Los Gatos	85
	Fagan	2
	Maymen	2
	Obispo	2
	Orthents, cut and fill	2
	Rock outcrop	2
	Unnamed soils	2
	Urban land	2
455977: Maymen gravelly loam, 30 to 50 percent slopes-----	Maymen	85
	Unnamed soils	15

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
455980: Obispo clay, 5 to 15 percent slopes-----	Obispo	85
	Fagan	4
	Rock outcrop	4
	Unnamed soils	4
	Urban land	3
455981: Obispo clay, 15 to 30 percent slopes-----	Obispo	85
	Fagan	3
	Rock outcrop	3
	Unnamed soils	3
	Urban land	3
455982: Orthents, cut and fill, 0 to 15 percent slopes-----	Orthents	85
	Unnamed soils	4
	Urban land	2
455983: Orthents, cut and fill, 15 to 75 percent slopes-----	Orthents	85
	Urban land	3
	Unnamed soils	2
455984: Orthents, cut and fill-Urban land complex, 0 to 5 percent slopes--	Orthents	65
	Urban land	35
455985: Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes-	Orthents	50
	Urban land	35
	Botella	2
	Fagan	2
	Francisquito	2
	Los Gatos	2
	Maymen	2
	Obispo	2
455986: Pits and dumps-----	Pits	50
	Dumps	50

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
455988: Rock outcrop-Orthents complex, 30 to 75 percent slopes-----	Rock outcrop	45
	Orthents	45
	Miramar	2
	Scarper	2
	Sirdrak	2
	Typic Argiustolls	2
	Urban land	2
455989: Scarper-Miramar complex, 30 to 75 percent slopes-----	Scarper	40
	Miramar	35
	Orthents, cut and fill	6
	Rock outcrop	6
	Unnamed soils	6
	Urban land	6
455990: Sirdrak sand, 5 to 50 percent slopes-----	Sirdrak	85
	Beaches	3
	Dune land	1
	Typic Argiustolls	1
	Unnamed soils	2
	Urban land	1
455991: Typic Argiustolls, loamy-Urban land association, 5 to 15 percent slopes-----	Typic Argiustolls	50
	Urban land	30
	Candlestick	2
	Candlestick variant	2
	Miramar	2
	Obispo	2
	Orthents, cut and fill	2
	Scarper	2
	Sirdrak	2
	Unnamed soils	2

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
455992: Urban land-----	Urban land	85
	Orthents, cut and fill	7
	Orthents, reclaimed	7
455993: Urban land-Orthents, cut and fill complex, 0 to 5 percent slopes--	Urban land	50
	Orthents	45
	Botella	1
	Orthents, reclaimed	1
	Sirdrak	1
	Unnamed soils	1
455994: Urban land-Orthents, cut and fill complex, 5 to 75 percent slopes-	Urban land	50
	Orthents	40
	Barnabe	1
	Candlestick	1
	Candlestick variant	1
	Fagan	1
	Los Gatos	1
	Mayman	1
	Miramar	1
	Obispo	1
	Scarper	1
	Sirdrak	1
455995: Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes----	Urban land	65
	Orthents	30
	Novato	2
	Orthents, cut and fill	1
	Reyes	1
455996: Urban land-Orthents, smoothed complex, 5 to 50 percent slopes----	Urban land	65
	Orthents	25
	Unnamed soils	10

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
455997: Urban land-Sirdrak complex, 2 to 50 percent slopes-----	Urban land	45
	Sirdrak	35
	Unnamed soils	20
455998: Zeni-Zeni variant gravelly loams, 30 to 75 percent slopes-----	Zeni	40
	Zeni variant	35
	Alambique	6
	Maymen	6
	Unnamed soils	12
456000: Beaches-----	Beaches	100
456001: Water-----	Water	100
456330: Botella loam, sloping, seeped-----	Botella	85
	Dublin	5
	Soquel	5
	Unnamed soils	5
456331: Butano shaly loam, very steep-----	Butano	85
	Hugo	10
	Josephine	5
456344: Coastal beaches-----	Coastal beaches	85
	Active dune land	10
	Terrace escarpments	5
456364: Denison clay loam, nearly level, imperfectly drained-----	Denison	85
	Elkhorn	5
	Farallone	5
	Miramar	4
	Unnamed soils	1
456365: Denison coarse sandy loam, nearly level-----	Denison	85
	Elkhorn	5
	Farallone	5
	Miramar	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456367: Denison loam, gently sloping-----	Denison	85
	Elkhorn	5
	Farallone	5
	Miramar	5
456368: Denison loam, sloping-----	Denison	85
	Elkhorn	5
	Farallone	5
	Miramar	5
456376: Elkhorn sandy loam, gently sloping, eroded-----	Elkhorn	85
	Baywood	5
	Denison	5
	Tierra	5
456377: Elkhorn sandy loam, sloping, eroded-----	Elkhorn	85
	Baywood	5
	Denison	5
	Tierra	5
456379: Elkhorn sandy loam, moderately steep and steep, severely eroded---	Elkhorn	85
	Denison	5
	Gullied land	5
	Tierra	5
456382: Farallone loam, nearly level-----	Farallone	85
	Denison	10
	Miramar	4
	Unnamed soils	1
456383: Farallone loam, gently sloping-----	Farallone	85
	Dennison	10
	Miramar	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456384: Farallone coarse sandy loam, nearly level-----	Farallone	85
	Denison	10
	Miramar	5
456385: Farallone coarse sandy loam, gently sloping-----	Farallone	85
	Denison	10
	Miramar	5
456386: Farallone coarse sandy loam, sloping, eroded-----	Farallone	85
	Denison	10
	Miramar	4
	Unnamed soils	1
456387: Farallone coarse sandy loam, moderately steep, eroded-----	Farallone	85
	Denison	10
	Miramar	5
456388: Farallone coarse sandy loam, over coarse sands, gently sloping, seeped-----	Farallone	85
	Denison	10
	Miramar	4
	Unnamed soils	1
456390: Farallone loamy coarse sand, sloping, eroded-----	Farallone	85
	Denison	10
	Miramar	5
456394: Gazos loam, sloping, eroded-----	Gazos	85
	Calera	5
	Lobitos	5
	Sweeney	5
456397: Gazos loam, steep, eroded-----	Gazos	85
	Calera	5
	Lobitos	5
	Sweeney	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456398: Gazos loam, very steep, eroded-----	Gazos	85
	Calera	5
	Lobitos	5
	Sweeney	5
456399: Gazos (dark phase)-Calera loams, sloping, eroded-----	Gazos (dark phase)	60
	Calera	20
	Lobitos	10
	Sweeney	10
456400: Gazos (dark phase)-Calera loams, steep, eroded-----	Gazos (dark phase)	40
	Calera	40
	Lobitos	10
	Sweeney	10
456401: Gazos (dark phase)-Calera loams, very steep, eroded-----	Gazos (dark phase)	40
	Calera	40
	Lobitos	10
	Sweeney	10
456403: Gazos (dark phase)-Sweeney loams, steep, eroded-----	Gazos (dark phase)	40
	Sweeney	40
	Calera	10
	Lobitos	10
456404: Gazos-Lobitos silt loams, gently sloping-----	Gazos	40
	Lobitos	40
	Calera	10
	Sweeney	10
456405: Gazos-Lobitos silt loams, sloping, eroded-----	Gazos	40
	Lobitos	40
	Calera	10
	Sweeney	10

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456406: Gazos-Lobitos silt loams, moderately steep, eroded-----	Gazos	40
	Lobitos	40
	Calera	10
	Sweeney	10
456412: Gullied land (alluvial soil material)-----	Gullied land	85
	Unnamed soils	5
	Botella	4
	Farallone	3
	Soquel	3
456414: Gullied land (Tierra and Watsonville soil materials)-----	Gullied land	85
	Tierra	5
	Unnamed soils	5
	Watsonville	5
456416: Hugo and Josephine loams, moderately steep-----	Hugo	40
	Josephine	40
	Laughlin	10
	Los Gatos	10
456418: Hugo and Josephine loams, steep-----	Hugo	40
	Josephine	40
	Laughlin	10
	Los Gatos	10
456420: Hugo and Josephine loams, very steep-----	Hugo	40
	Josephine	40
	Laughlin	10
	Los Gatos	10
456423: Hugo and Josephine sandy loams, sloping, eroded-----	Hugo	40
	Josephine	40
	Laughlin	10
	Los Gatos	10

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456444: Lobitos loam, sloping, eroded-----	Lobitos	85
	Gazos	10
	Pomponio	5
456445: Lobitos loam, moderately steep, eroded-----	Lobitos	85
	Gazos	10
	Pomponio	5
456446: Lobitos loam, steep, eroded-----	Lobitos	85
	Gazos	10
	Pomponio	5
456460: Mixed alluvial land-----	Mixed alluvial land	90
	Terrace escarpments	5
	Unnamed soils	5
456464: Miramar coarse sandy loam, sloping, eroded-----	Miramar	85
	Sheridan	10
	Gullied land	5
456465: Miramar coarse sandy loam, moderately steep, eroded-----	Miramar	85
	Sheridan	10
	Gullied land	5
456466: Miramar coarse sandy loam, steep, eroded-----	Miramar	85
	Sheridan	10
	Gullied land	5
456467: Miramar coarse sandy loam, steep, severely eroded-----	Miramar	85
	Sheridan	10
	Gullied land	5
456468: Miramar coarse sandy loam, very steep, eroded-----	Miramar	85
	Sheridan	10
	Gullied land	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456469: Montara stony loam, steep and very steep, eroded-----	Montara	85
	Gazos	10
	Sweeney	5
456475: Rough broken land-----	Rough broken land	50
	Lithic Xerorthents	35
	Gazos	10
	Lobitos	5
456485: Stabilized dune land-----	Stabilized dune land	90
	Active dune land	10
456486: Sheridan coarse sandy loam, moderately steep-----	Sheridan	85
	Miramar	10
	Montara	5
456487: Sheridan coarse sandy loam, steep-----	Sheridan	85
	Miramar	10
	Montara	5
456488: Sheridan coarse sandy loam, very steep-----	Sheridan	85
	Miramar	10
	Montara	5
456494: Soquel loam, gently sloping, poorly drained-----	Soquel	85
	Corralitos	10
	Farallone	4
	Unnamed soils	1
456506: Sweeney loam, sloping, eroded-----	Sweeney	85
	Butano	5
	Mindego	5
	Santa Lucia	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
456511: Sweeney stony clay loam, steep, eroded-----	Sweeney	75
	Butano	10
	Rock outcrop	10
	Mindego	4
	Unnamed soils	1
456517: Tierra loam, sloping, eroded-----	Tierra	85
	Colma	10
	Santa Lucia	3
	Unnamed soils	2
456518: Tierra loam, moderately steep, eroded-----	Tierra	85
	Colma	10
	Santa Lucia	3
	Unnamed soils	2
456519: Tierra loam, moderately steep, severely eroded-----	Tierra	85
	Gullied land	10
	Santa Lucia	4
	Unnamed soils	1
456520: Tierra loam, steep, eroded-----	Tierra	85
	Colma	10
	Santa Lucia	5
459393: Ballard gravelly loam, 2 to 9 percent slopes-----	Ballard	85
	Clear Lake	5
	Cortina	5
	Unnamed soils	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459395: Barnabe very gravelly loam, 30 to 50 percent slopes-----	Barnabe	85
	Cronkhite	4
	Saurin	4
	Rock outcrop	3
	Soils with slopes of less than 30 percent	2
	Unnamed shallow soils	2
459396: Beaches-----	Beaches	100
459397: Blucher-Cole complex, 2 to 5 percent slopes-----	Blucher	40
	Cole	30
	Clear Lake	10
	Cortina	10
	Soils with slopes of less than 2 percent	10
459398: Bonnydoon gravelly loam, 15 to 30 percent slopes-----	Bonnydoon	85
	Unnamed shallow soils	3
	Felton variant	2
	Rock outcrop	2
	Saurin	2
	Soils with slopes of less than 15 percent	2
	Soulajule	2
	Tocaloma	2
459399: Bonnydoon gravelly loam, 30 to 75 percent slopes-----	Bonnydoon	85
	Unnamed shallow soils	3
	Felton variant	2
	Rock outcrop	2
	Saurin	2
	Soils with slopes of less than 30 percent	2
	Soulajule	2
	Tocaloma	2

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459402: Centissima-Barnabe complex, 15 to 30 percent slopes-----	Centissima	50
	Barnabe	20
	Soils with slopes of less than 15 percent	5
	Unnamed gravelly soils	5
	Unnamed shallow soils	5
	Dipsea	3
	Henneke	2
	Rock outcrop	2
	459403: Centissima-Barnabe complex, 30 to 50 percent slopes-----	Centissima
Barnabe		20
Soils with slopes of less than 30 percent		5
Unnamed gravelly soils		5
Unnamed shallow soils		5
Cronkhite		3
Dipsea		2
Henneke		2
Maymen		2
Mayment variant		2
Rock outcrop		2
Unnamed deep soils	2	
459404: Centissima-Barnabe complex, 50 to 75 percent slopes-----	Centissima	40
	Barnabe	20
	Dipsea	10
	Unnamed moderately deep soils	10
	Henneke	5
	Maymen	5
	Rock outcrop	5
	Unnamed shallow soils	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459406: Cortina gravelly sandy loam, 0 to 5 percent slopes-----	Cortina	85
	Unnamed soils	7
	Ballard	5
	Clear Lake	2
	Unnamed soils	1
459407: Cronkhite-Barnabe complex, 9 to 15 percent slopes-----	Cronkhite	50
	Barnabe	30
	Barnabe variant	3
	Rock outcrop	3
	Soils with slopes of less than 9 percent	3
	Slumps	3
	Tamalpais	3
	Unnamed moderately deep soils	3
	Unnamed shallow soils	2
459408: Cronkhite-Barnabe complex, 15 to 30 percent slopes-----	Cronkhite	50
	Barnabe	30
	Centissima	4
	Dipsea	4
	Soils with slopes of less than 15 percent	3
	Henneke	2
	Rock outcrop	2
	Maymen	1
	Maymen variant	1
	Slumps	1
	Unnamed moderately deep soils	1
	Unnamed shallow soils	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459409:		
Cronkhite-Barnabe complex, 30 to 50 percent slopes-----	Cronkhite	40
	Barnabe	30
	Centissima	4
	Dipsea	4
	Maymen	4
	Soils with slopes of less than 30 percent	4
	Slumps	4
	Maymen variant	3
	Unnamed moderately deep soils	3
	Unnamed shallow soils	3
	Rock outcrop	1
459410:		
Cronkhite-Barnabe complex, 50 to 75 percent slopes-----	Cronkhite	40
	Barnabe	30
	Centissima	4
	Dipsea	4
	Maymen	4
	Maymen variant	4
	Soils with slopes of less than 50 percent	4
	Slumps	3
	Unnamed moderately deep soils	3
	Unnamed shallow soils	3
	Rock outcrop	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459411: Dipsea-Barnabe very gravelly loams, 30 to 50 percent slopes-----	Dipsea	50
	Barnabe	20
	Centissima	5
	Maymen	5
	Maymen variant	5
	Tocaloma	5
	Unnamed shallow soils	5
	Unnamed moderately deep soils	3
	Henneke	2
459412: Dipsea-Barnabe very gravelly loams, 50 to 75 percent slopes-----	Dipsea	50
	Barnabe	20
	Centissima	5
	Maymen	5
	Maymen variant	5
	Tocaloma	5
	Unnamed deep soils	3
	Unnamed shallow soils	3
	Henneke	2
459414: Dune land-----	Dune land	95
	Unnamed soils	5
459415: Felton variant-Soulajule complex, 9 to 15 percent slopes-----	Felton variant	40
	Soulajule	40
	Soils with slopes of less than 9 percent	5
	Tocaloma	5
	Unnamed shallow soils	4
	Unnamed soils	3
	Slumps	2
	Unnamed soils	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459416: Felton variant-Soulajule complex, 15 to 30 percent slopes-----	Felton variant	40
	Soulajule	40
	Olompali	5
	Tocaloma	5
	Soils with slopes of less than 15 percent	3
	Unnamed shallow soils	3
	Unnamed thermic soils	2
	Rock outcrop	1
	Slumps	1
459417: Felton variant-Soulajule complex, 30 to 50 percent slopes-----	Felton variant	50
	Soulajule	40
	McMullin	2
	Tocaloma	2
	Unnamed shallow soils	2
	Olompali	1
	Rock outcrop	1
	Soils with slopes of less than 30 percent	1
	Unnamed thermic soils	1
459418: Felton variant-Soulajule complex, 50 to 75 percent slopes-----	Felton variant	50
	Soulajule	40
	Unnamed shallow soils	3
	Eroded areas	2
	McMullin	2
	Tocaloma	2
	Rock outcrop	1
459419: Fluvents, channeled-----	Fluvents	100

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459420: Gilroy-Gilroy variant-Bonnydoon variant loams, 30 to 50 percent slopes-----	Gilroy	35
	Gilroy variant	25
	Bonnydoon variant	20
	McMullin	5
	Tocaloma	5
	Unnamed gravelly soils	4
	Montara	2
	Rock outcrop	1
	Unnamed soils	1
459421: Henneke stony clay loam, 15 to 50 percent slopes-----	Henneke	85
	Soils with slopes of less than 50 percent	8
	Unnamed shallow soils	7
459422: Humaquepts, seeped-----	Humaquepts	90
	Unnamed soils with surface layers of loamy sand	10
459423: Hydraquents, saline-----	Hydraquents	90
	Unnamed soils with sandy surface layers	10
459425: Inverness loam, 15 to 30 percent slopes-----	Inverness	85
	Bayview	2
	Pablo	2
	Palomarin	2
	Rock outcrop	2
	Sheridan variant	2
	Unnamed shallower soils	2
	Wittenberg	2
	Soils with slopes of less than 15 percent	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459427: Inverness loam, 50 to 75 percent slopes-----	Inverness	85
	Palomarin	3
	Rock outcrop	3
	Sheridan variant	3
	Unnamed shallower soils	3
	Wittenberg	3
459432: Los Osos-Bonnydoon complex, 5 to 15 percent slopes-----	Los Osos	60
	Bonnydoon	25
	Saurin	2
	Slumps	2
	Tocaloma	2
	Unnamed deep soils	2
	Unnamed shallow soils	2
	Yorkville	2
	Rock outcrop	1
	Unnamed soils	1
459433: Los Osos-Bonnydoon complex, 15 to 30 percent slopes-----	Los Osos	60
	Bonnydoon	20
	Saurin	2
	Soils with slopes of less than 15 percent	2
	Slumps	2
	Tocaloma	2
	Unnamed deep soils	2
	Unnamed gravelly soils	2
	Unnamed shallow soils	2
	Yorkville	2
	Unnamed soils	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459434: Los Osos-Bonnydoon complex, 30 to 50 percent slopes-----	Los Osos	60
	Bonnydoon	20
	Rock outcrop	5
	Soils with slopes of more than 50 percent	3
	Slumps	3
	Tocaloma	3
	Unnamed deep soils	3
	Yorkville	3
459436: Los Osos-Urban land-Bonnydoon complex, 30 to 50 percent slopes----	Los Osos	40
	Urban land	30
	Bonnydoon	20
	Henneke	1
	Rock outcrop	1
	Saurin	1
	Soils with slopes of less than 30 percent	1
	Slumps	1
	Tocaloma	1
	Unnamed deep soils	1
	Xerorthents	1
459437: Maymen-Maymen variant gravelly loams, 30 to 75 percent slopes-----	Maymen	50
	Maymen variant	20
	Centissima	5
	Dipsea	5
	Henneke	5
	Unnamed shallow soils	5
	Rock outcrop	2
	Soils with slopes of less than 30 percent	2
	Tocaloma	2
	Unnamed gravelly soils	2

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459438: Montara clay loam, 15 to 30 percent slopes-----	Montara	85
	Henneke	2
	Rock outcrop	2
	Unnamed shallow soils	2
	Unnamed stony soils	2
	Yorkville	2
459439: Novato clay-----	Novato	90
	Unnamed strongly acid soils	5
	Unnamed, overwash soils	5
459440: Olmopali loam, 2 to 9 percent slopes-----	Olmopali	85
	Felton variant	5
	Unnamed soils	5
	Rock outcrop	2
	Soils with slopes of less than 2 percent	1
	Soulajule	1
	Unnamed shallower soils	1
459441: Olmopali loam, 9 to 15 percent slopes-----	Olmopali	85
	Unnamed soils	5
	Felton variant	2
	Rock outcrop	2
	Soils with slopes of less than 9 percent	2
	Soulajule	2
	Unnamed shallower soils	2

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459442: Olompali loam, 15 to 30 percent slopes-----	Olompali	85
	Felton variant	2
	Rock outcrop	2
	Soils with slopes of less than 50 percent	2
	Soulajule	2
	Tocaloma	2
	Unnamed shallower soils	2
	Yorkville	2
459448: Palomarin-Wittenberg complex, 50 to 75 percent slopes-----	Palomarin	40
	Wittenberg	30
	Bayview	5
	Inverness	5
	Pablo	5
	Sheridan variant	5
	Unnamed shallower soils	5
	Rock outcrop	2
459451: Rock outcrop-Xerorthents complex, 50 to 75 percent slopes-----	Rock outcrop	50
	Xerorthents	30
459452: Rodeo clay loam, 2 to 15 percent slopes-----	Rodeo	90
	Humaquepts	3
	Soils with slopes of less than 2 percent	3
	Unnamed very gravelly soils	3
459453: Saurin-Bonnydoon complex, 2 to 15 percent slopes-----	Saurin	50
	Bonnydoon	30
	Los Osos	5
	Tocaloma	5
	Unnamed deep soils	5
	Unnamed shallow soils	5

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459454: Saurin-Bonnydoon complex, 15 to 30 percent slopes-----	Saurin	40
	Bonnydoon	30
	Los Osos	8
	Tocaloma	8
	Unnamed soils with dark surface layers	8
459455: Saurin-Bonnydoon complex, 30 to 50 percent slopes-----	Saurin	50
	Bonnydoon	40
	Los Osos	2
	Tocaloma	2
	Unnamed soils with dark surface layers	2
	Unnamed shallow soils	2
459456: Saurin-Bonnydoon complex, 50 to 75 percent slopes-----	Saurin	50
	Bonnydoon	40
	Los Osos	2
	Tocaloma	2
	Unnamed soils with dark surface layers	2
	Unnamed shallow soils	2
459463: Sirdrak sand, 15 to 50 percent slopes-----	Sirdrak	90
	Bayview	1
	Dune land	1
	Humaquepts	1
	Kehoe	1
	Kehoe variant	1
	Pablo	1
	Sirdrak variant	1
	Soils with slopes of less than 15 percent	1
	Unnamed shallower soils	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459467: Tamalpais-Barnabe variant very gravelly loams, 15 to 30 percent slopes-----	Tamalpais	60
	Barnabe variant	30
	Barnabe	2
	Cronkhite	2
	Rock outcrop	1
	Unnamed loam soils	1
	Unnamed shallow soils	1
459468: Tamalpais-Barnabe variant very gravelly loams, 30 to 50 percent slopes-----	Tamalpais	50
	Barnabe variant	30
	Barnabe	4
	Cronkhite	4
	Rock outcrop	4
	Unnamed shallow soils	2
	Unnamed loam soils	1
459469: Tamalpais-Barnabe variant very gravelly loams, 50 to 75 percent slopes-----	Tamalpais	50
	Barnabe variant	40
	Barnabe	2
	Cronkhite	2
	Rock outcrop	2
	Unnamed loam soils	1
459471: Tocaloma-McMullin complex, 30 to 50 percent slopes-----	Tocaloma	40
	McMullin	35
	Saurin	5
	Unnamed soils with dark surface layers	5
	Unnamed shallow soils	5
	Los Osos	2
	Rock outcrop	2

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459472: Tocaloma-McMullin complex, 50 to 75 percent slopes-----	Tocaloma	40
	McMullin	35
	Bonnydoon	5
	Saurin	5
	Maymen	2
	Rock outcrop	2
	Unnamed deep soils	2
	Unnamed shallow soils	2
459473: Tocaloma-McMullin-Urban land complex, 15 to 30 percent slopes-----	Tocaloma	30
	McMullin	25
	Urban land	25
	Dipsea	2
	Saurin	2
	Soils with slopes of less than 15 percent	2
	Soils with slopes of more than 30 percent	2
	Unnamed shallow soils	2
	Xerorthents	2
459474: Tocaloma-McMullin-Urban land complex, 30 to 50 percent slopes-----	Tocaloma	40
	McMullin	20
	Urban land	20
	Dipsea	2
	Saurin	2
	Soils with slopes of less than 30 percent	2
	Soils with slopes of more than 50 percent	2
	Unnamed shallow soils	2
	Xerorthents	2

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459475: Tocaloma-Saurin association, steep-----	Tocaloma	35
	Saurin	30
	Bonnydoon	5
	Los Osos	5
	McMullin	5
	Unnamed gravelly soils	5
459476: Tocaloma-Saurin association, very steep-----	Tocaloma	40
	Saurin	30
	Bonnydoon	5
	Los Osos	5
	McMullin	5
	Montara	5
	Unnamed soils	2
	Unnamed gravelly soils	2
	Unnamed light-colored soils	2
459477: Tocaloma-Saurin association, extremely steep-----	Tocaloma	40
	Saurin	30
	Bonnydoon	5
	McMullin	5
	Rock outcrop	5
	Unnamed gravelly soils	5
	Unnamed shallow soils	2
	Unnamed soils	1
459481: Tomales fine sandy loam, 30 to 50 percent slopes-----	Tomales	85
	Bayview	2
	Pablo	2
	Rock outcrop	2
	Sobega	2
	Steinbeck	2
	Unnamed isomesic soils	2
	Humaquepts	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459489: Tomales-Steinbeck fine sandy loams, 30 to 50 percent slopes-----	Tomales	50
	Steinbeck	30
	Rodeo	3
	Bayview	2
	Pablo	2
	Slumps	2
	Sobega	2
459490: Tomales-Steinbeck loams, 5 to 15 percent slopes-----	Tomales	50
	Steinbeck	30
	Rock outcrop	2
	Soils with slopes of less than 5 percent	2
	Sobega	2
	Tocaloma	2
459494: Urban land-Xerorthents complex, 0 to 9 percent slopes-----	Urban land	70
	Xerorthents	20
	Hydraquents	2
	Ballard	1
	Blucher	1
	Cole	1
	Novato	1
	Reyes	1
	Soils with slopes of more than 9 percent	1
	Unnamed briefly flooded soils	1
459495: Xerorthents, fill-----	Xerorthents	100

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459497: Yorkville clay loam, 9 to 15 percent slopes-----	Yorkville	85
	Los Osos	2
	Rock outcrop	2
	Soils with slopes of less than 9 percent	2
	Slumps	2
	Tocaloma	2
	Unnamed shallower soils	2
459498: Yorkville clay loam, 15 to 30 percent slopes-----	Yorkville	85
	Los Osos	2
	Rock outcrop	2
	Soils with slopes of less than 15 percent	2
	Slumps	2
	Unnamed shallow soils	2
	Unnamed shallower soils	2
459499: Yorkville clay loam, 30 to 50 percent slopes-----	Yorkville	85
	Bonnydoon	2
	Rock outcrop	2
	Saurin	2
	Soils with slopes of more than 50 percent	2
	Slumps	2
	Unnamed shallow soils	2
	Unnamed shallower soils	2
	Los Osos	1

Soil Survey of Golden Gate National Recreation Area, California

Table 1.—Soil Legend—Continued

Map unit symbol and map unit name	Components in map unit	Percent of map unit
459500: Yorkville-Rock outcrop complex, 9 to 15 percent slopes-----	Yorkville Rock outcrop Bonnydoon Saurin Soils with slopes of less than 9 percent Tocaloma Unnamed shallower soils Los Osos	60 20 2 2 2 2 2 1
459501: Yorkville-Rock outcrop complex, 15 to 30 percent slopes-----	Yorkville Rock outcrop Bonnydoon Saurin Soils with slopes of more than 30 percent Slumps Unnamed shallow soils Unnamed shallower Los Osos	60 20 2 2 2 2 2 1
459502: Water-----	Water	100
1412772: Water-----	Water	100
1611084. No digital data available		

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification

(Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time. Components without a classification are not suitable for cultivation)

Map unit symbol and component name	Land capability	
	N	I
455964: Alambique-----	7e	---
455965: Alambique-----	7e	---
McGarvey-----	7e	---
455966: Barnabe-----	7e	---
Candlestick-----	7e	---
455967: Barnabe-----	7e	---
Rock outcrop.		
455970: Candlestick-----	6e	---
Barnabe-----	6e	---
455971: Candlestick-----	7e	---
Kron-----	7e	---
Buriburi-----	7e	---
455972: Candlestick variant-----	3e	---
455973: Candlestick variant-----	4e	---
455974: Fagan-----	6e	---
455976: Los Gatos-----	7e	---
455977: Maymen-----	7e	---
455980: Obispo-----	7e	---
455981: Obispo-----	7e	---
455982: Orthents-----	8e	---
455983: Orthents-----	8e	---

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
455984: Orthents----- Urban land.	8e	---
455985: Orthents----- Urban land.	8e	---
455986. Pits and dumps		
455988: Rock outcrop. Orthents-----	8s	---
455989: Scarper----- Miramar-----	7e 7e	--- ---
455990: Sirdrak-----	6e	---
455991: Typic Argiustolls----- Urban land.	3e	3e
455992. Urban land		
455993: Urban land. Orthents-----	8e	---
455994: Urban land. Orthents-----	8e	---
455995: Urban land. Orthents-----	8e	---
455996: Urban land. Orthents-----	8e	---
455997: Urban land. Sirdrak-----	6e	---
455998: Zeni----- Zeni variant-----	7e 7e	--- ---

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
456000. Beaches		
456001. Water		
456330: Botella-----	3e	3e
456331: Butano-----	7e	---
456344. Coastal beaches		
456364: Denison-----	3w	2w
456365: Denison-----	3s	2s
456367: Denison-----	3e	2e
456368: Denison-----	3e	3e
456376: Elkhorn-----	3e	2e
456377: Elkhorn-----	3e	2e
456379: Elkhorn-----	6e	---
456382: Farallone-----	3c	1
456383: Farallone-----	3e	2e
456384: Farallone-----	3s	2s
456385: Farallone-----	3e	2e
456386: Farallone-----	3e	3e
456387: Farallone-----	4e	4e
456388: Farallone-----	3e	2e
456390: Farallone-----	3e	3e
456394: Gazos-----	3e	---

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
456397: Gazos-----	6e	---
456398: Gazos-----	7e	---
456399: Gazos (dark phase)----- Calera-----	3e 3e	--- ---
456400: Gazos (dark phase)----- Calera-----	6e 6e	--- ---
456401: Gazos (dark phase)----- Calera-----	7e 7e	--- ---
456403: Gazos (dark phase)----- Sweeney-----	6e 6e	--- ---
456404: Gazos----- Lobitos-----	3e 3e	3e 3e
456405: Gazos----- Lobitos-----	3e 3e	--- ---
456406: Gazos----- Lobitos-----	4e 4e	--- ---
456412. Gullied land (alluvial soil material)		
456414. Gullied land (Tierra and Watsonville soil materials)		
456416: Hugo----- Josephine-----	4e 4e	--- ---
456418: Hugo----- Josephine-----	6e 6e	--- ---
456420: Hugo----- Josephine-----	7e 7e	--- ---

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
456423: Hugo-----	3e	---
Josephine-----	3e	---
456444: Lobitos-----	3e	3e
456445: Lobitos-----	4e	---
456446: Lobitos-----	6e	---
456460. Mixed alluvial land		
456464: Miramar-----	3e	---
456465: Miramar-----	4e	---
456466: Miramar-----	6e	---
456467: Miramar-----	6e	---
456468: Miramar-----	7e	---
456469: Montara-----	7e	---
456475: Rough broken land. Lithic Xerorthents-----	8s	---
456485. Stabilized dune land		
456486: Sheridan-----	4e	---
456487: Sheridan-----	6e	---
456488: Sheridan-----	7e	---
456494: Soquel-----	3w	3w
456506: Sweeney-----	3e	3e
456511: Sweeney-----	6e	---
456517: Tierra-----	3e	3e

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
456518: Tierra-----	4e	---
456519: Tierra-----	6e	---
456520: Tierra-----	6e	---
459393: Ballard-----	3e-4	2e-4
459395: Barnabe-----	6e	6e
459396: Beaches		
459397: Blucher-----	3w-2	2w-2
Cole-----	3w-2	3w-2
459398: Bonnydoon-----	6e	6e
459399: Bonnydoon-----	7e	7e
459402: Centissima-----	6e	6e
Barnabe-----	6e	6e
459403: Centissima-----	6e	6e
Barnabe-----	6e	6e
459404: Centissima-----	7e	7e
Barnabe-----	7e	7e
459406: Cortina-----	4s-4	4s-4
459407: Cronkhite-----	3e-3	3e-3
Barnabe-----	6e	6e
459408: Cronkhite-----	6e	6e
Barnabe-----	6e	6e
459409: Cronkhite-----	6e	6e
Barnabe-----	6e	6e

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
459410: Cronkhite-----	7e	7e
Barnabe-----	7e	7e
459411: Dipsea-----	6e	6e
Barnabe-----	6e	6e
459412: Dipsea-----	7e	7e
Barnabe-----	7e	7e
459414. Dune land		
459415: Felton variant-----	4e-1	4e-1
Soulajule-----	4e-1	4e-1
459416: Felton variant-----	4e-1	4e-1
Soulajule-----	4e-3	4e-3
459417: Felton variant-----	6e	6e
Soulajule-----	6e	6e
459418: Felton variant-----	7e	7e
Soulajule-----	7e	7e
459419: Fluvents-----	8w	8w
459420: Gilroy-----	6e	6e
Gilroy variant-----	6e	6e
Bonnydoon variant-----	6e	6e
459421: Henneke-----	6e	6e
459422: Humaquepts-----	6w	6w
459423: Hydraquents-----	8w	8w
459425: Inverness-----	4e-1	4e-1
459427: Inverness-----	7e	7e

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
459432:		
Los Osos-----	3e-3	3e-3
Bonnydoon-----	6e	6e
459433:		
Los Osos-----	4e-3	4e-3
Bonnydoon-----	6e	6e
459434:		
Los Osos-----	6e	6e
Bonnydoon-----	6e	6e
459436:		
Los Osos-----	6e	6e
Urban land.		
Bonnydoon-----	6e	6e
459437:		
Maymen-----	7e	7e
Maymen variant-----	7e	7e
459438:		
Montara-----	6e	6e
459439:		
Novato-----	8w	8w
459440:		
Oлимпали-----	3e-2	2e-2
459441:		
Oлимпали-----	3e-2	3e-2
459442:		
Oлимпали-----	4e-2	4e-2
459448:		
Palomarin-----	7e	7e
Wittenberg-----	7e	7e
459451:		
Rock outcrop.		
Xerorthents-----	8s	8s
459452:		
Rodeo-----	3w-3	3w-3
459453:		
Saurin-----	3e-8	3e-8
Bonnydoon-----	6e	6e
459454:		
Saurin-----	4e-8	4e-8
Bonnydoon-----	6e	6e

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
459455:		
Saurin-----	6e	6e
Bonnydoon-----	6e	6e
459456:		
Saurin-----	7e	7e
Bonnydoon-----	7e	7e
459463:		
Sirdrak-----	6e	6e
459467:		
Tamalpais-----	4s-4	4s-4
Barnabe variant-----	4s-4	4s-4
459468:		
Tamalpais-----	6e	6e
Barnabe variant-----	6e	6e
459469:		
Tamalpais-----	7s	7e
Barnabe variant-----	7e	7e
459471:		
Tocaloma-----	6e	6e
McMullin-----	6e	6e
459472:		
Tocaloma-----	7e	7e
McMullin-----	7e	7e
459473:		
Tocaloma-----	4e-8	4e-8
McMullin-----	6e	6e
Urban land.		
459474:		
Tocaloma-----	4e-8	4e-8
McMullin-----	6e	6e
Urban land.		
459475:		
Tocaloma-----	3e-8	3e-8
Saurin-----	3e-8	3e-8
459476:		
Tocaloma-----	6e	6e
Saurin-----	6e	6e

Soil Survey of Golden Gate National Recreation Area, California

Table 2.-Land Capability Classification-Continued

Map unit symbol and component name	Land capability	
	N	I
459477: Tocaloma-----	7e	7e
Saurin-----	7e	7e
459481: Tomales-----	6e	6e
459489: Tomales-----	6e	6e
Steinbeck-----	6e	6e
459490: Tomales-----	3e-3	3e-3
Steinbeck-----	3e-1	3e-1
459494: Urban land.		
Xerorthents-----	8s	8s
459495: Xerorthents-----	8s	8s
459497: Yorkville-----	3e-3	3e-3
459498: Yorkville-----	4e-3	4e-3
459499: Yorkville-----	6e	6e
459500: Yorkville-----	3e-3	3e-3
Rock outcrop.		
459501: Yorkville-----	4e-3	4e-3
Rock outcrop.		
459502. Water		
1412772. Water		
1611084. No digital data available		

Soil Survey of Golden Gate National Recreation Area, California

Table 3.—Prime and Other Important Farmland

(Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland. If a soil is prime or important farmland only under certain conditions, the conditions are indicated in the column "Farmland classification")

Map unit symbol	Map unit name	Farmland classification
455972	Candlestick variant loam, 2 to 15 percent slopes	Farmland of statewide importance
456364	Denison clay loam, nearly level, imperfectly drained	Prime farmland if irrigated and drained
456365	Denison coarse sandy loam, nearly level	Prime farmland if irrigated
456367	Denison loam, gently sloping	Prime farmland if irrigated
456376	Elkhorn sandy loam, gently sloping, eroded	Prime farmland if irrigated
456377	Elkhorn sandy loam, sloping, eroded	Prime farmland if irrigated
456382	Farallone loam, nearly level	Prime farmland if irrigated
456383	Farallone loam, gently sloping	Prime farmland if irrigated
456384	Farallone coarse sandy loam, nearly level	Prime farmland if irrigated
456385	Farallone coarse sandy loam, gently sloping	Prime farmland if irrigated
456386	Farallone coarse sandy loam, sloping, eroded	Prime farmland if irrigated
456387	Farallone coarse sandy loam, moderately steep, eroded	Farmland of statewide importance
456388	Farallone coarse sandy loam, over coarse sands, gently sloping, seeped	Prime farmland if irrigated and drained
456390	Farallone loamy coarse sand, sloping, eroded	Prime farmland if irrigated
456404	Gazos-Lobitos silt loams, gently sloping	Farmland of statewide importance
456423	Hugo and Josephine sandy loams, sloping, eroded	Farmland of statewide importance
456464	Miramar coarse sandy loam, sloping, eroded	Farmland of statewide importance
456465	Miramar coarse sandy loam, moderately steep, eroded	Farmland of statewide importance
456494	Soquel loam, gently sloping, poorly drained	Prime farmland if irrigated and drained
459393	Ballard gravelly loam, 2 to 9 percent slopes	Prime farmland if irrigated
459397	Blucher-Cole complex, 2 to 5 percent slopes	Farmland of statewide importance
459406	Cortina gravelly sandy loam, 0 to 5 percent slopes	Farmland of statewide importance
459440	Olompali loam, 2 to 9 percent slopes	Farmland of statewide importance
459452	Rodeo clay loam, 2 to 15 percent slopes	Farmland of statewide importance

Soil Survey of Golden Gate National Recreation Area, California

Table 4.-Hydric Soils

(This report lists only those map unit components that are rated as hydric. Definitions of hydric criteria codes are included at the end of the report)

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
455990: Sirdrak sand, 5 to 50 percent slopes	Beaches	3	beaches	4	No	Yes	No
	Unnamed soils	1	tidal flats	2A, 4, 3	Yes	Yes	Yes
455995: Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes	Novato	2	salt marshes	2B3, 3	Yes	No	Yes
	Reyes	1	salt marshes	2B3	Yes	No	No
456000: Beaches	Beaches	100	beaches	4	No	Yes	No
456330: Botella loam, sloping, seeped	Unnamed soils	5	flood plains	2B3	Yes	No	No
456344: Coastal beaches	Coastal beaches	85	beaches	4	No	Yes	No
456364: Denison clay loam, nearly level, imperfectly drained	Unnamed soils	1	depressions	2B3	Yes	No	No
456382: Farallone loam, nearly level	Unnamed soils	1	depressions	2B2	Yes	No	No
456386: Farallone coarse sandy loam, sloping, eroded	Unnamed soils	1	depressions	2B2	Yes	No	No
456388: Farallone coarse sandy loam, over coarse sands, gently sloping, seeped	Miramar	4	flood plains	2B2	Yes	No	No
456412: Gullied land (alluvial soil material)	Unnamed soils	5	draws	4	No	Yes	No
456460: Mixed alluvial land	Unnamed soils	5	draws	4	No	Yes	No
456494: Soquel loam, gently sloping, poorly drained	Unnamed soils	1	alluvial fans	2B3	Yes	No	No

Soil Survey of Golden Gate National Recreation Area, California

Table 4.—Hydric Soils—Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
456511: Sweeney stony clay loam, steep, eroded	Unnamed soils	1	valley sides	2B3	Yes	No	No
456517: Tierra loam, sloping, eroded	Unnamed soils	2	swales	2B3	Yes	No	No
456518: Tierra loam, moderately steep, eroded	Unnamed soils	2	swales	2B3	Yes	No	No
456519: Tierra loam, moderately steep, severely eroded	Unnamed soils	1	swales	2B3	Yes	No	No
459393: Ballard gravelly loam, 2 to 9 percent slopes	Clear Lake	5	depressions	4, 2B3	Yes	Yes	No
459396: Beaches	Beaches	100	beaches	4	No	Yes	No
459397: Blucher-Cole complex, 2 to 5 percent slopes	Blucher	40	alluvial fans, basin floors	2A	Yes	No	No
	Cole	30	alluvial fans, basin floors	2A	Yes	No	No
	Clear Lake	10	depressions	2B3, 3	Yes	No	Yes
459406: Cortina gravelly sandy loam, 0 to 5 percent slopes	Clear Lake	2	depressions	2B3, 3	Yes	No	Yes
459414: Dune land	Unnamed soils	5	basin floors	3, 2B3	Yes	No	Yes
459415: Felton variant-Soulajule complex, 9 to 15 percent slopes	Unnamed soils	1	depressions	2B3	Yes	No	No
459419: Fluents, channeled	Fluents	100	flood plains	4	No	Yes	No
459422: Humaquepts, seeped	Humaquepts	90	drainageways	2B3	Yes	No	No
459423: Hydraquepts, saline	Hydraquepts	90	tidal flats	3, 2B3	Yes	No	Yes

Soil Survey of Golden Gate National Recreation Area, California

Table 4.—Hydric Soils—Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
459432: Los Osos-Bonnydoon complex, 5 to 15 percent slopes	Unnamed soils	1	depressions	2B3	Yes	No	No
459433: Los Osos-Bonnydoon complex, 15 to 30 percent slopes	Unnamed soils	1	depressions	2B3	Yes	No	No
459439: Novato clay	Novato	90	tidal marshes	2B3	Yes	No	No
459440: Olmopali loam, 2 to 9 percent slopes	Unnamed soils	5	basin floors	2B3	Yes	No	No
459441: Olmopali loam, 9 to 15 percent slopes	Unnamed soils	5	basin floors	2B3	Yes	No	No
459452: Rodeo clay loam, 2 to 15 percent slopes	Rodeo	90	interior valleys, basin floors	2B3	Yes	No	No
	Humaquepts	3	drainageways	2B3	Yes	No	No
459463: Sirdrak sand, 15 to 50 percent slopes	Humaquepts	1	drainageways	2B3	Yes	No	No
459476: Tocaloma-Saurin association, very steep	Unnamed soils	2	depressions	2B3	Yes	No	No
459477: Tocaloma-Saurin association, extremely steep	Unnamed soils	1	depressions	2B3	Yes	No	No
459481: Tomales fine sandy loam, 30 to 50 percent slopes	Humaquepts	1	drainageways	2B3	Yes	No	No
459489: Tomales-Steinbeck fine sandy loams, 30 to 50 percent slopes	Rodeo	3	drainageways	2B3	Yes	No	No

Soil Survey of Golden Gate National Recreation Area, California

Table 4.-Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
459494: Urban land-Xerorthents complex, 0 to 9 percent slopes	Hydraquents	2	tidal flats	4, 2B3	Yes	Yes	No
	Novato	1	salt marshes	3, 2B3	Yes	No	Yes
	Reyes	1	salt marshes	3, 2B3	Yes	No	Yes

Explanation of hydric criteria codes:

1. All Histels (except for Folistels), and Histosols (except for Folists), which are, by definition, saturated.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1.) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2.) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3.) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for periods of long or very long duration during the growing season.
4. Soils that are frequently flooded for periods of long or very long duration during the growing season.

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Table 5.—Landform and Parent Material

(Component percents may not add up to 100. MAP is the mean annual precipitation)

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
455964: Alambique-----	85	30-75	299-994	30-45	Mountain slope	Residuum weathered from sandstone
455965: Alambique-----	45	30-75	348-1988	30-40	Mountain slope	Residuum weathered from sandstone
McGarvey-----	35	30-75	348-1988	30-40	Mountain slope	Residuum weathered from sandstone
455966: Barnabe-----	45	30-75	200-1342	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
Candlestick-----	35	30-75	200-1342	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
455967: Barnabe-----	40	30-75	299-846	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
Rock outcrop-----	40	15-75	299-846	20-30	Mountain slope	None assigned
455970: Candlestick-----	45	30-50	75-1204	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
Barnabe-----	25	30-50	75-1204	20-30	Mountain slope	Residuum weathered from sandstone
455971: Candlestick-----	40	30-75	200-1342	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
Kron-----	25	30-75	200-1342	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
Buriburi-----	20	30-75	200-1342	20-30	Mountain slope	Hard, fractured residuum weathered from sandstone
455972: Candlestick variant	85	2-15	26-400	20-30	Alluvial fan	Alluvium derived from mixed sources
455973: Candlestick variant	85	15-30	26-400	20-30	Alluvial fan	Alluvium derived from mixed sources

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
455974: Fagan-----	85	15-50	200-1988	25-35	Hill	Residuum weathered from sandstone and shale
455976: Los Gatos-----	85	30-75	200-397	25-35	Hill	Residuum weathered from sandstone
455977: Maymen-----	85	30-50	400-1194	25-35	Mountain slope	Residuum weathered from siltstone
455980: Obispo-----	85	5-15	98-597	20-30	Hill	Residuum weathered from serpentinite
455981: Obispo-----	85	15-30	98-597	20-30	Hill	Residuum weathered from serpentinite
455982: Orthents-----	85	0-15	0-696	15-30	Alluvial fan, hill, terrace	Alluvium
455983: Orthents-----	85	15-75	0-696	15-30	Mountain slope	Residuum
455984: Orthents-----	55	0-5	10-597	15-30	None assigned	Alluvium
Urban land-----	35	0-5	10-597	15-30	None assigned	None assigned
455985: Orthents-----	50	5-75	79-794	15-30	None assigned	Alluvium
Urban land-----	35	5-75	79-794	15-30	None assigned	None assigned
455986: Pits-----	50	0-3	None assigned	None assigned	None assigned	None assigned
Dumps-----	50	0-50	None assigned	None assigned	None assigned	None assigned
455988: Rock outcrop-----	45	30-75	0-646	15-30	None assigned	None assigned
Orthents-----	45	30-75	0-646	15-30	None assigned	Mixed sedimentary, serpentinitic, or basaltic volcanic rock
455989: Scarper-----	40	30-75	200-1791	20-45	Mountain slope	Residuum weathered from quartz-diorite
Miramar-----	35	30-75	200-1791	20-45	Mountain slope	Residuum weathered from quartz-diorite
455990: Sirdrak-----	85	5-50	20-696	20-25	Dune	Eolian sands

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
455991: Typic Argiustolls--	50	5-15	26-446	20-30	Fluviomarine terrace	Coastal alluvium derived from sedimentary rock
Urban land-----	30	5-15	26-446	20-30	Fluviomarine terrace	None assigned
455992: Urban land-----	85	0-15	10-325	15-30	None assigned	None assigned
455993: Urban land-----	50	0-5	26-499	15-30	None assigned	Alluvium
Orthents-----	45	0-5	26-499	15-30	None assigned	None assigned
455994: Urban land-----	50	5-75	75-794	15-30	None assigned	Alluvium
Orthents-----	40	5-75	75-794	15-30	None assigned	None assigned
455995: Urban land-----	65	0-2	0-49	15-30	None assigned	None assigned
Orthents-----	30	0-2	0-49	15-30	None assigned	None assigned
455996: Urban land-----	65	5-50	98-499	25-35	None assigned	Sandstone
Orthents-----	25	5-50	98-499	25-35	Terrace	Sandstone
455997: Urban land-----	45	2-50	10-801	15-25	None assigned	None assigned
Sirdrak-----	35	2-50	10-801	15-25	None assigned	None assigned
455998: Zeni-----	40	30-75	299-1099	30-45	Mountain slope	Residuum weathered from sandstone
Zeni variant-----	35	30-75	299-1099	30-45	Mountain slope	Residuum weathered from metasedimentary rock
456000: Beaches-----	100	0-2	None assigned	None assigned	Beach	None assigned
456001: Water-----	100	None assigned	None assigned	None assigned	None assigned	None assigned
456330: Botella-----	85	7-15	49-801	20-30	Alluvial fan, bench, terrace	Alluvium
456331: Butano-----	85	45-75	600-2385	30-50	Mountain slope	Siliceous shale
456344: Coastal beaches----	85	1-5	0-7	42-48	Beach	Alluvium

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Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
456364: Denison-----	85	0-2	49-299	25-25	Terrace	Alluvium
456365: Denison-----	85	0-1	49-299	25-25	Terrace	Alluvium
456367: Denison-----	85	2-6	49-299	25-25	Terrace	Alluvium
456368: Denison-----	85	6-15	49-299	25-25	Terrace	Alluvium
456376: Elkhorn-----	85	2-5	49-2385	14-22	Terrace	Alluvium
456377: Elkhorn-----	85	5-11	49-2385	14-22	Terrace	Alluvium
456379: Elkhorn-----	85	11-41	49-2385	14-22	Terrace	Alluvium
456382: Farallone-----	85	0-1	49-200	20-30	Alluvial fan, flood plain	Alluvium
456383: Farallone-----	85	1-4	49-200	20-30	Alluvial fan, flood plain	Alluvium
456384: Farallone-----	85	0-1	49-200	20-30	Alluvial fan, flood plain	Alluvium
456385: Farallone-----	85	1-4	49-200	20-30	Alluvial fan, flood plain	Alluvium
456386: Farallone-----	85	4-10	49-200	20-30	Alluvial fan, flood plain	Alluvium
456387: Farallone-----	85	10-20	49-200	20-30	Alluvial fan, flood plain	Alluvium
456388: Farallone-----	85	1-4	49-200	20-30	Alluvial fan, flood plain	Alluvium
456390: Farallone-----	85	5-10	49-200	20-30	Alluvial fan, flood plain	Alluvium
456394: Gazos-----	85	9-11	49-2385	15-30	Mountain slope	Shale
456397: Gazos-----	85	21-40	49-2385	15-30	Mountain slope	Shale
456398: Gazos-----	85	40-75	49-2385	15-30	Mountain slope	Shale

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Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
456399: Gazos (dark phase)-	60	9-16	49-2385	15-30	Mountain slope	Shale
Calera-----	20	7-16	98-1499	25-25	Mountain slope	Residuum weathered from limestone
456400: Gazos (dark phase)-	40	31-45	49-2385	15-30	Mountain slope	Shale
Calera-----	40	31-45	98-1499	25-25	Mountain slope	Residuum weathered from limestone
456401: Gazos (dark phase)-	40	45-75	49-2385	15-30	Mountain slope	Shale
Calera-----	40	45-75	98-1499	25-25	Mountain slope	Residuum weathered from limestone
456403: Gazos (dark phase)-	40	16-45	49-2385	15-30	Mountain slope	Shale
Sweeney-----	40	16-45	200-2500	30-30	Mountain slope	Residuum derived from diabase and basalt
456404: Gazos-----	40	5-6	49-2385	15-30	Mountain slope	Shale
Lobitos-----	40	5-6	200-1001	30-30	Mountain slope	Shale
456405: Gazos-----	40	6-15	49-2385	15-30	Mountain slope	Shale
Lobitos-----	40	6-15	200-1001	30-30	Mountain slope	Shale
456406: Gazos-----	40	15-30	49-2385	15-30	Mountain slope	Shale
Lobitos-----	40	15-30	200-1001	30-30	Mountain slope	Shale
456412: Gullied land (alluvial soil material)-----	85	2-15	None assigned	None assigned	Flood plain	Alluvium
456414: Gullied land (Tierra and Watsonville soil materials)-----	85	0-9	None assigned	None assigned	Terrace	Alluvium derived from sedimentary rock
456416: Hugo-----	40	15-30	499-2385	60-60	Mountain slope	Sandstone and shale
Josephine-----	40	15-30	499-2385	30-70	Mountain slope	Sandstone and shale

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Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
456418: Hugo-----	40	30-45	499-2385	60-60	Mountain slope	Sandstone and shale
Josephine-----	40	30-45	499-2385	30-70	Mountain slope	Sandstone and shale
456420: Hugo-----	40	45-75	499-2385	60-60	Mountain slope	Sandstone and shale
Josephine-----	40	45-75	499-2385	30-70	Mountain slope	Sandstone and shale
456423: Hugo-----	40	5-11	499-2385	60-60	Mountain slope	Sandstone and shale
Josephine-----	40	5-11	499-2385	30-70	Mountain slope	Sandstone and shale
456444: Lobitos-----	85	7-16	200-1001	30-30	Mountain slope	Shale
456445: Lobitos-----	85	16-30	200-1001	30-30	Mountain slope	Shale
456446: Lobitos-----	85	30-41	200-1001	30-30	Mountain slope	Shale
456460: Mixed alluvial land	90	0-5	None assigned	14-14	Flood plain	Alluvium
456464: Miramar-----	85	9-11	200-2001	0-45	Mountain slope	Quartz-diorite
456465: Miramar-----	85	11-21	200-2001	0-45	Mountain slope	Quartz-diorite
456466: Miramar-----	85	21-40	200-2001	0-45	Mountain slope	Quartz-diorite
456467: Miramar-----	85	21-40	200-2001	0-45	Mountain slope	Quartz-diorite
456468: Miramar-----	85	41-75	200-2001	0-45	Mountain slope	Quartz-diorite
456469: Montara-----	85	21-40	98-2385	12-50	Mountain slope	Serpentine
456475: Rough broken land--	50	41-75	None assigned	None assigned	Hill	Basalt, sandstone, shale, and granite
Lithic Xerorthents-	35	41-75	650-2385	8-15	None assigned	Residuum
456485: Stabilized dune land-----	90	5-50	None assigned	None assigned	Dune	Alluvium

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
456486: Sheridan-----	85	11-15	1001-2385	16-50	Mountain slope	Quartz-diorite
456487: Sheridan-----	85	20-30	1001-2385	16-50	Mountain slope	Quartz-diorite
456488: Sheridan-----	85	40-75	1001-2385	16-50	Mountain slope	Quartz-diorite
456494: Soquel-----	85	3-6	20-1001	30-30	Flood plain	Alluvium
456506: Sweeney-----	85	7-15	200-2385	30-30	Mountain slope	Residuum from diabase and basalt
456511: Sweeney-----	75	30-45	200-2385	30-30	Mountain slope	Residuum from diabase and basalt
456517: Tierra-----	85	5-11	98-1099	14-25	Hill	Alluvium
456518: Tierra-----	85	11-21	98-1099	14-25	Hill	Alluvium
456519: Tierra-----	85	11-21	98-1099	14-25	Hill	Alluvium
456520: Tierra-----	85	21-41	98-1099	14-25	Hill	Alluvium
459393: Ballard-----	85	2-9	10-299	25-35	Alluvial fan	Alluvium derived from shale, sandstone, and/or granite
459395: Barnabe-----	85	30-50	49-1699	30-50	Hill	Residuum weathered from sandstone and/or chert
459396: Beaches-----	100	0-5	None assigned	None assigned	Beach	Beach sand derived from igneous and metamorphic rock
459397: Blucher-----	40	2-5	0-499	25-35	Alluvial fan, basin floor	Alluvium derived from sandstone, granite, or shale
Cole-----	30	2-5	0-499	25-35	Alluvial fan	Alluvium derived from shale, sandstone, or granite
459398: Bonnydoon-----	85	15-30	49-1499	25-35	Hill	Residuum weathered from sandstone

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Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459399: Bonnydoon-----	85	30-75	49-1499	25-35	Hill	Residuum weathered from shale or sandstone
459402: Centissima-----	50	15-30	499-1699	40-50	Hill	Residuum weathered from sandstone and shale
Barnabe-----	20	15-30	499-1699	40-50	Hill	Residuum weathered from sandstone and/or chert
459403: Centissima-----	50	30-50	499-1699	40-50	Hill	Residuum weathered from sandstone and shale
Barnabe-----	20	30-50	499-1699	40-50	Hill	Residuum weathered from sandstone and/or chert
459404: Centissima-----	40	50-75	499-1699	40-50	Hill	Residuum weathered from sandstone and shale
Barnabe-----	20	50-75	499-1699	40-50	Hill	Residuum weathered from sandstone and/or chert
459406: Cortina-----	85	0-5	26-299	25-35	Interior valley	Alluvium derived from igneous, metamorphic, and sedimentary rock
459407: Cronkhite-----	50	9-15	49-801	24-35	Hill	Residuum weathered from sandstone and shale
Barnabe-----	30	9-15	49-801	24-35	Hill	Residuum weathered from sandstone and/or chert
459408: Cronkhite-----	50	15-30	49-801	24-35	Hill	Residuum weathered from sandstone and shale
Barnabe-----	30	15-30	49-801	24-35	Hill	Residuum weathered from sandstone and/or chert
459409: Cronkhite-----	40	30-50	49-801	24-35	Hill	Residuum weathered from sandstone and shale

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459409: Barnabe-----	30	30-50	49-801	24-35	Hill	Residuum weathered from sandstone and/or chert
459410: Cronkhite-----	40	50-75	49-801	24-35	Hill	Residuum weathered from sandstone and shale
Barnabe-----	30	50-75	49-801	24-35	Hill	Residuum weathered from sandstone and/or chert
459411: Dipsea-----	50	30-50	499-1699	30-50	Hill	Residuum weathered from sandstone and shale
Barnabe-----	20	30-50	499-1699	30-50	Hill	Residuum weathered from sandstone and/or chert
459412: Dipsea-----	50	50-75	499-1699	30-50	Hill	Residuum weathered from sandstone and shale
Barnabe-----	20	50-75	499-1699	30-50	Hill	Residuum weathered from sandstone and/or chert
459414: Dune land-----	95	5-30	3-299	None assigned	Dune	None assigned
459415: Felton variant----	40	9-15	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
Soulajule-----	40	9-15	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
459416: Felton variant----	40	15-30	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
Soulajule-----	40	15-30	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
459417: Felton variant----	50	30-50	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
Soulajule-----	40	30-50	0-1299	25-35	Hill	Residuum weathered from sandstone and shale

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459418: Felton variant-----	50	50-75	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
Soulajule-----	40	50-75	0-1299	25-35	Hill	Residuum weathered from sandstone and shale
459419: Fluents-----	100	0-5	98-1499	None assigned	Flood plain	Alluvium derived from igneous, metamorphic, and sedimentary rock
459420: Gilroy-----	35	30-50	98-1499	16-35	Hill	Residuum weathered from igneous and metamorphic rock
Gilroy variant-----	25	30-50	98-1499	20-35	Hill	Residuum weathered from igneous and metamorphic rock
Bonnydoon variant--	20	30-50	98-1499	20-35	Hill	Residuum weathered from igneous and metamorphic rock
459421: Henneke-----	85	30-50	499-2001	25-35	Hill	Residuum weathered from serpentinite
459422: Humaquepts-----	90	0-5	None assigned	None assigned	Drainageway	Alluvium derived from igneous, metamorphic, and sedimentary rock
459423: Hydraquents-----	90	0-2	0-33	None assigned	Tidal flat	Alluvium derived from igneous, metamorphic, and sedimentary rock
459425: Inverness-----	85	15-30	249-1201	25-35	Hill	Residuum weathered from quartz-diorite
459427: Inverness-----	85	50-75	249-1201	25-35	Hill	Residuum weathered from quartz-diorite
459432: Los Osos-----	60	5-15	200-1201	25-35	Hill	Residuum weathered from sandstone and shale
Bonnydoon-----	25	5-15	200-1201	25-35	Hill	Residuum weathered from shale or sandstone

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459433: Los Osos-----	60	15-30	200-1201	25-35	Hill	Residuum weathered from sandstone and shale
Bonnydoon-----	20	15-30	49-1499	25-35	Hill	Residuum weathered from shale or sandstone
459434: Los Osos-----	60	30-50	200-1201	25-35	Hill	Residuum weathered from sandstone and shale
Bonnydoon-----	20	30-50	200-1102	25-35	Hill	Residuum weathered from shale or sandstone
459436: Los Osos-----	40	30-50	200-1201	25-35	Hill	Residuum weathered from sandstone and shale
Urban land-----	30	30-50	200-1201	25-35	Hill	None assigned
Bonnydoon-----	20	30-50	200-1102	25-35	Hill	Residuum weathered from shale or sandstone
459437: Maymen-----	50	30-75	499-2500	36-52	Hill	Residuum weathered from sandstone and shale
Maymen variant-----	20	30-75	499-2500	36-52	Hill	Residuum weathered from sandstone and shale
459438: Montara-----	85	15-30	98-1499	25-35	Hill	Residuum weathered from serpentinite
459439: Novato-----	90	0-2	0-10	20-30	Tidal marsh	Alluvium derived from igneous, metamorphic, and sedimentary rock
459440: Olompali-----	85	2-9	49-801	35-45	Marine terrace	Alluvium derived from igneous, metamorphic, and sedimentary rock
459441: Olompali-----	85	9-15	49-801	35-45	Marine terrace	Alluvium derived from igneous, metamorphic, and sedimentary rock

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459442: Olompali-----	85	15-30	49-801	35-45	Marine terrace	Alluvium derived from igneous, metamorphic, and sedimentary rock
459448: Palomarin-----	40	50-75	499-1299	30-42	Hill	Residuum weathered from sandstone and shale
Wittenberg-----	30	50-75	499-1299	30-42	Hill	Residuum weathered from sandstone and shale
459451: Rock outcrop-----	50	50-75	None assigned	None assigned	Mountain	None assigned
Xerorthents-----	30	50-75	None assigned	None assigned	Mountain	Residuum weathered from chert, serpentinite, slate, and/or sandstone
459452: Rodeo-----	90	2-15	20-200	25-35	Basin floor, interior valley	Alluvium derived from igneous, metamorphic, and sedimentary rock
459453: Saurin-----	50	2-15	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
Bonnydoon-----	30	2-15	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
459454: Saurin-----	40	15-30	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
Bonnydoon-----	30	15-30	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
459455: Saurin-----	50	30-50	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
Bonnydoon-----	40	30-50	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
459456: Saurin-----	50	50-75	49-1499	25-40	Hill	Residuum weathered from sandstone and shale

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Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459456: Bonnydoon-----	40	50-75	49-1499	25-40	Hill	Residuum weathered from sandstone and shale
459463: Sirdrak-----	90	15-50	20-499	25-35	Dune	Eolian sands derived from sandstone
459467: Tamalpais-----	60	15-30	39-801	25-35	Hill	Residuum weathered from sandstone or chert
Barnabe variant----	30	15-30	39-801	25-35	Hill	Residuum weathered from sandstone and/or chert
459468: Tamalpais-----	50	30-50	39-801	25-35	Hill	Residuum weathered from sandstone or chert
Barnabe variant----	30	30-50	39-801	25-35	Mountain	Residuum weathered from sandstone and/or chert
459469: Tamalpais-----	50	50-75	39-801	25-35	Hill	Residuum weathered from sandstone or chert
Barnabe variant----	40	50-75	39-801	25-35	Hill	Residuum weathered from sandstone and/or chert
459471: Tocaloma-----	40	30-50	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
McMullin-----	35	30-50	49-1499	30-40	Hill	Residuum weathered from conglomerate
459472: Tocaloma-----	40	50-75	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
McMullin-----	35	50-75	49-1499	30-40	Hill	Residuum weathered from conglomerate
459473: Tocaloma-----	30	15-30	49-1499	30-40	Hill	Residuum weathered from sandstone and shale

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459473: McMullin-----	25	15-30	49-1499	30-40	Hill	Residuum weathered from conglomerate
Urban land-----	25	15-30	49-1499	30-40	Hill	None assigned
459474: Tocaloma-----	40	30-50	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
McMullin-----	20	30-50	49-1499	30-40	Hill	Residuum weathered from conglomerate
Urban land-----	20	30-50	10-299	25-35	Hill	None assigned
459475: Tocaloma-----	35	15-30	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
Saurin-----	30	15-30	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
459476: Tocaloma-----	40	30-50	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
Saurin-----	30	30-50	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
459477: Tocaloma-----	40	50-75	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
Saurin-----	30	50-75	49-1499	30-40	Hill	Residuum weathered from sandstone and shale
459481: Tomales-----	85	30-50	0-801	25-35	Hill	Residuum weathered from sandstone
459489: Tomales-----	50	30-50	0-801	25-35	Hill	Residuum weathered from sandstone
Steinbeck-----	30	30-50	0-801	25-35	Hill	Residuum weathered from sandstone
459490: Tomales-----	50	5-15	0-801	25-35	Hill	Residuum weathered from sandstone
Steinbeck-----	30	5-15	0-801	25-35	Hill	Residuum weathered from sandstone

Soil Survey of Golden Gate National Recreation Area, California

Table 5.-Landform and Parent Material-Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landform	Parent material
	Pct	Pct	Ft	In		
459494: Urban land-----	70	0-9	0-499	20-30	Valley floor	None assigned
Xerorthents-----	20	0-9	0-499	20-30	Valley floor	Earth spread deposits derived from igneous, metamorphic, and sedimentary rock
459495: Xerorthents-----	100	0-5	None assigned	None assigned	Valley floor	Earth spread deposits derived from igneous, metamorphic, and sedimentary rock
459497: Yorkville-----	85	9-15	49-1499	25-35	Hill	Residuum weathered from shale
459498: Yorkville-----	85	15-30	49-1499	25-35	Hill	Residuum weathered from shale
459499: Yorkville-----	85	30-50	49-1499	25-35	Hill	Residuum weathered from shale
459500: Yorkville-----	60	9-15	49-1499	25-35	Hill	Residuum weathered from shale
Rock outcrop-----	20	9-15	None assigned	None assigned	Hill	None assigned
459501: Yorkville-----	60	15-30	49-1499	25-35	Hill	Residuum weathered from shale
Rock outcrop-----	20	15-30	None assigned	None assigned	Hill	None assigned
459502: Water-----	100	None assigned	None assigned	None assigned	None assigned	None assigned
1412772: Water-----	100	None assigned	None assigned	None assigned	None assigned	None assigned
1611084: No digital data available-----	100	None assigned	None assigned	None assigned	None assigned	None assigned

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
455965: Alambique-----	45	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
McGarvey-----	35	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
455966: Barnabe-----	45	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Candlestick-----	35	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
455967: Barnabe-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Rock outcrop-----	40	Not rated		Not rated		Not rated	
455970: Candlestick-----	45	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Barnabe-----	25	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
455971: Candlestick-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Kron-----	25	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
Buriburi-----	20	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
455972: Candlestick variant-	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
455973: Candlestick variant-	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455974: Fagan-----	85	Moderately suited Stickiness; high plasticity index	0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Severe Low strength	1.00
455976: Los Gatos-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
455977: Maymen-----	85	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
455980: Obispo-----	85	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Severe Low strength	1.00
455981: Obispo-----	85	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Severe Low strength	1.00
455982: Orthents-----	85	Not rated		Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455986: Pits-----	50	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Rock fragments Sandiness	0.75 0.50	Slight Strength	0.10
Dumps-----	50	Not rated		Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455989: Scarper-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
Miramar-----	35	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455990: Sirdrak-----	85	Moderately suited Sandiness	0.50	Unsuited Slope Sandiness	1.00 0.50	Moderate Low strength	0.50
455991: Typic Argiustolls---	50	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Urban land-----	30	Not rated		Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated		Not rated	
455993: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455994: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	40	Not rated		Not rated		Not rated	
455995: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	30	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50	Severe Low strength	1.00
455996: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	25	Not rated		Not rated		Not rated	
455997: Urban land-----	45	Not rated		Not rated		Not rated	
Sirdrak-----	35	Moderately suited Sandiness	0.50	Unsuited Slope Sandiness	1.00 0.50	Moderate Low strength	0.50
455998: Zeni-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Zeni variant-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
456000: Beaches-----	100	Not rated		Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated		Not rated	
456330: Botella-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456331: Butano-----	85	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
456344: Coastal beaches-----	85	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50	Moderate Low strength	0.50
456364: Denison-----	85	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Severe Low strength	1.00
456365: Denison-----	85	Well suited		Well suited		Moderate Low strength	0.50
456367: Denison-----	85	Well suited		Well suited		Severe Low strength	1.00
456368: Denison-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456376: Elkhorn-----	85	Well suited		Well suited		Moderate Low strength	0.50
456377: Elkhorn-----	85	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
456379: Elkhorn-----	85	Well suited		Unsuited Slope	1.00	Moderate Low strength	0.50
456382: Farallone-----	85	Well suited		Well suited		Severe Low strength	1.00
456383: Farallone-----	85	Well suited		Well suited		Severe Low strength	1.00
456384: Farallone-----	85	Well suited		Well suited		Moderate Low strength	0.50
456385: Farallone-----	85	Well suited		Well suited		Moderate Low strength	0.50
456386: Farallone-----	85	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
456387: Farallone-----	85	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456388: Farallone-----	85	Well suited		Well suited		Moderate Low strength	0.50
456390: Farallone-----	85	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
456394: Gazos-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456397: Gazos-----	85	Well suited		Unsuited Slope	1.00	Severe Low strength	1.00
456398: Gazos-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
456399: Gazos (dark phase)--	60	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Calera-----	20	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456400: Gazos (dark phase)--	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Calera-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
456401: Gazos (dark phase)--	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Calera-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
456403: Gazos (dark phase)--	40	Well suited		Unsuited Slope	1.00	Severe Low strength	1.00
Sweeney-----	40	Well suited		Unsuited Slope	1.00	Severe Low strength	1.00
456404: Gazos-----	40	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Lobitos-----	40	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456405: Gazos-----	40	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Lobitos-----	40	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456406: Gazos-----	40	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Lobitos-----	40	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated		Not rated	
456416: Hugo-----	40	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Severe Low strength	1.00
Josephine-----	40	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
456418: Hugo-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Severe Low strength	1.00
Josephine-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
456420: Hugo-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Severe Low strength	1.00
Josephine-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
456423: Hugo-----	40	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
Josephine-----	40	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
456444: Lobitos-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456445: Lobitos-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
456446: Lobitos-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456460: Mixed alluvial land-	90	Well suited		Well suited		Moderate Low strength	0.50
456464: Miramar-----	85	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
456465: Miramar-----	85	Well suited		Poorly suited Slope	0.75	Moderate Low strength	0.50
456466: Miramar-----	85	Well suited		Unsuited Slope	1.00	Moderate Low strength	0.50
456467: Miramar-----	85	Well suited		Unsuited Slope	1.00	Moderate Low strength	0.50
456468: Miramar-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
456469: Montara-----	85	Well suited		Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
456475: Rough broken land---	50	Not rated		Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated		Not rated	
456485: Stabilized dune land	90	Moderately suited Sandiness	0.50	Unsuited Slope Sandiness	1.00 0.50	Moderate Low strength	0.50
456486: Sheridan-----	85	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
456487: Sheridan-----	85	Well suited		Poorly suited Slope	0.75	Moderate Low strength	0.50
456488: Sheridan-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
456494: Soquel-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456506: Sweeney-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456511: Sweeney-----	75	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Severe Low strength	1.00
456517: Tierra-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
456518: Tierra-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
456519: Tierra-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
456520: Tierra-----	85	Well suited		Unsuited Slope	1.00	Severe Low strength	1.00
459393: Ballard-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
459395: Barnabe-----	85	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
459396: Beaches-----	100	Not rated		Not rated		Not rated	
459397: Blucher-----	40	Well suited		Well suited		Severe Low strength	1.00
Cole-----	30	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Severe Low strength	1.00
459398: Bonnydoon-----	85	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
459399: Bonnydoon-----	85	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459402: Centissima-----	50	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Barnabe-----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Slight Strength	0.10

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459403: Centissima-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Barnabe-----	20	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
459404: Centissima-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Barnabe-----	20	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
459406: Cortina-----	85	Well suited		Moderately suited Rock fragments	0.50	Slight Strength	0.10
459407: Cronkhite-----	50	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Barnabe-----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Slight Strength	0.10
459408: Cronkhite-----	50	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Barnabe-----	30	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Slight Strength	0.10
459409: Cronkhite-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Barnabe-----	30	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
459410: Cronkhite-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Barnabe-----	30	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
459411: Dipsea-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Barnabe-----	20	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459412: Dipsea-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Barnabe-----	20	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
459414: Dune land-----	95	Not rated		Not rated		Not rated	
459415: Felton variant-----	40	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Soulajule-----	40	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
459416: Felton variant-----	40	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Soulajule-----	40	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
459417: Felton variant-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Soulajule-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
459418: Felton variant-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Soulajule-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
459419: Fluvents-----	100	Not rated		Not rated		Not rated	
459420: Gilroy-----	35	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Gilroy variant-----	25	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Bonnydoon variant---	20	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
459421: Henneke-----	85	Moderately suited Stickiness; high plasticity index Rock fragments Slope	0.50 0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 1.00 0.50	Slight Strength	0.10

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459422: Humaquepts-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Severe Low strength	1.00
459423: Hydraquepts-----	90	Moderately suited Wetness	0.50	Poorly suited Wetness	0.75	Moderate Wetness	0.50
459425: Inverness-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
459427: Inverness-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
459432: Los Osos-----	60	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Bonnydoon-----	25	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
459433: Los Osos-----	60	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Bonnydoon-----	20	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
459434: Los Osos-----	60	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Bonnydoon-----	20	Moderately suited Slope Restrictive layer	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459436: Los Osos-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Urban land-----	30	Not rated		Not rated		Not rated	
Bonnydoon-----	20	Moderately suited Slope Restrictive layer	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459437: Maymen-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Maymen variant-----	20	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index Rock fragments	1.00 0.50 0.50	Slight Strength	0.10

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459438: Montara-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
459439: Novato-----	90	Moderately suited Stickiness; high plasticity index Wetness	0.50 0.50	Poorly suited Wetness Stickiness; high plasticity index	0.75 0.50	Severe Low strength Wetness	1.00 0.50
459440: Olompali-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
459441: Olompali-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
459442: Olompali-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
459448: Palomarin-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Wittenberg-----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459451: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated		Not rated	
459452: Rodeo-----	90	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
459453: Saurin-----	50	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Bonnydoon-----	30	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
459454: Saurin-----	40	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Bonnydoon-----	30	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
459455: Saurin-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Bonnydoon-----	40	Moderately suited Slope Restrictive layer	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459456: Saurin-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Bonnydoon-----	40	Moderately suited Slope Restrictive layer	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459463: Sirdrak-----	90	Moderately suited Sandiness	0.50	Unsuited Slope Sandiness	1.00 0.50	Moderate Low strength	0.50
459467: Tamalpais-----	60	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
Barnabe variant----	30	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
459468: Tamalpais-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Barnabe variant----	30	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459469: Tamalpais-----	50	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Barnabe variant----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
459471: Tocaloma-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
McMullin-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
459472: Tocaloma-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
McMullin-----	35	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
459473: Tocaloma-----	30	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459473: McMullin-----	25	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderate Low strength	0.50
Urban land-----	25	Not rated		Not rated		Not rated	
459474: Tocaloma-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
McMullin-----	20	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
Urban land-----	20	Not rated		Not rated		Not rated	
459475: Tocaloma-----	35	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Saurin-----	30	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
459476: Tocaloma-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Saurin-----	30	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
459477: Tocaloma-----	40	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
Saurin-----	30	Moderately suited Slope	0.50	Unsuited Slope	1.00	Severe Low strength	1.00
459481: Tomales-----	85	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
459489: Tomales-----	50	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
Steinbeck-----	30	Moderately suited Slope	0.50	Unsuited Slope	1.00	Moderate Low strength	0.50
459490: Tomales-----	50	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Steinbeck-----	30	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
459494: Urban land-----	70	Not rated		Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part I (Planting)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459495: Xerorthents-----	100	Not rated		Not rated		Not rated	
459497: Yorkville-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
459498: Yorkville-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
459499: Yorkville-----	85	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Severe Low strength	1.00
459500: Yorkville-----	60	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459501: Yorkville-----	60	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part II (Hazard of Erosion and Suitability for Roads)

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
455965: Alambique-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
McGarvey-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
455966: Barnabe-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Candlestick-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
455967: Barnabe-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
455970: Candlestick-----	45	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
455971: Candlestick-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Kron-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Buriburi-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
455972: Candlestick variant-	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
455973: Candlestick variant-	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part II (Hazard of Erosion and Suitability for Roads)-Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455974: Fagan-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
455976: Los Gatos-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
455977: Maymen-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
455980: Obispo-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
455981: Obispo-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
455982: Orthents-----	85	Not rated		Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455986: Pits-----	50	Slight		Slight		Moderately suited Sandiness	0.50
Dumps-----	50	Not rated		Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455989: Scarper-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Miramar-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455990: Sirdrak-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
455991: Typic Argiustolls---	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Urban land-----	30	Not rated		Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated		Not rated	
455993: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455994: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	40	Not rated		Not rated		Not rated	
455995: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	30	Slight		Slight		Moderately suited Stickiness; high plasticity index	0.50
455996: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	25	Not rated		Not rated		Not rated	
455997: Urban land-----	45	Not rated		Not rated		Not rated	
Sirdrak-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
455998: Zeni-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Zeni variant-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456000: Beaches-----	100	Not rated		Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated		Not rated	
456330: Botella-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456331: Butano-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456344: Coastal beaches-----	85	Slight		Slight		Poorly suited Flooding Wetness Sandiness	1.00 1.00 0.50
456364: Denison-----	85	Slight		Slight		Moderately suited Low strength	0.50
456365: Denison-----	85	Slight		Slight		Well suited	
456367: Denison-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
456368: Denison-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
456376: Elkhorn-----	85	Slight		Slight		Well suited	
456377: Elkhorn-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
456379: Elkhorn-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456382: Farallone-----	85	Slight		Slight		Moderately suited Low strength	0.50
456383: Farallone-----	85	Slight		Slight		Moderately suited Low strength	0.50
456384: Farallone-----	85	Slight		Slight		Well suited	
456385: Farallone-----	85	Slight		Slight		Well suited	
456386: Farallone-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
456387: Farallone-----	85	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
456388: Farallone-----	85	Slight		Slight		Well suited	

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Table 6.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456390: Farallone-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
456394: Gazos-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
456397: Gazos-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456398: Gazos-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456399: Gazos (dark phase)--	60	Slight		Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
Calera-----	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
456400: Gazos (dark phase)--	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Calera-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456401: Gazos (dark phase)--	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Calera-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456403: Gazos (dark phase)--	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Sweeney-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456404: Gazos-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part II (Hazard of Erosion and Suitability for Roads)-Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456404: Lobitos-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
456405: Gazos-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Lobitos-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
456406: Gazos-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Lobitos-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated		Not rated	
456416: Hugo-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Josephine-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456418: Hugo-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Josephine-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456420: Hugo-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Josephine-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part II (Hazard of Erosion and Suitability for Roads)-Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456423: Hugo-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Josephine-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
456444: Lobitos-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
456445: Lobitos-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456446: Lobitos-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456460: Mixed alluvial land-	90	Slight		Slight		Poorly suited Flooding	1.00
456464: Miramar-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
456465: Miramar-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456466: Miramar-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456467: Miramar-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456468: Miramar-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456469: Montara-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456475: Rough broken land---	50	Not rated		Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated		Not rated	
456485: Stabilized dune land	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456486: Sheridan-----	85	Slight		Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
456487: Sheridan-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456488: Sheridan-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
456494: Soquel-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Low strength	0.50 0.50
456506: Sweeney-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
456511: Sweeney-----	75	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456517: Tierra-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
456518: Tierra-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456519: Tierra-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
456520: Tierra-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459393: Ballard-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
459395: Barnabe-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459396: Beaches-----	100	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459397: Blucher-----	40	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Low strength Flooding	1.00 0.50 0.50
Cole-----	30	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Low strength Flooding	1.00 0.50 0.50
459398: Bonnydoon-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459399: Bonnydoon-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459402: Centissima-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459403: Centissima-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459404: Centissima-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459406: Cortina-----	85	Slight		Slight		Well suited	
459407: Cronkhite-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Barnabe-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
459408: Cronkhite-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459409: Cronkhite-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459410: Cronkhite-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Barnabe-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459411: Dipsea-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Barnabe-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459412: Dipsea-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Barnabe-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459414: Dune land-----	95	Not rated		Not rated		Not rated	
459415: Felton variant-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Soulajule-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
459416: Felton variant-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Soulajule-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459417: Felton variant-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Soulajule-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459418: Felton variant-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Soulajule-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459419: Fluvents-----	100	Not rated		Not rated		Not rated	
459420: Gilroy-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Gilroy variant-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bonnydoon variant---	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459421: Henneke-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459422: Humaquepts-----	90	Slight		Moderate Slope/erodibility	0.50	Poorly suited Low strength	1.00
459423: Hydraquents-----	90	Slight		Slight		Poorly suited Wetness Stickiness; high plasticity index	1.00 0.50
459425: Inverness-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459427: Inverness-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459432: Los Osos-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Bonnydoon-----	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
459433: Los Osos-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459433: Bonnydoon-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459434: Los Osos-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bonnydoon-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459436: Los Osos-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Urban land-----	30	Not rated		Not rated		Not rated	
Bonnydoon-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459437: Maymen-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Maymen variant-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459438: Montara-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459439: Novato-----	90	Slight		Slight		Poorly suited Flooding Wetness Low strength	1.00 1.00 0.50
459440: Olmopali-----	85	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Low strength Slope	1.00 0.50 0.50
459441: Olmopali-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Wetness Slope Low strength	1.00 0.50 0.50
459442: Olmopali-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Wetness Low strength	1.00 1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459448: Palomarin-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Wittenberg-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459451: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated		Not rated	
459452: Rodeo-----	90	Slight		Severe Slope/erodibility	0.95	Poorly suited Wetness Slope Low strength	1.00 0.50 0.50
459453: Saurin-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Bonnydoon-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
459454: Saurin-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bonnydoon-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459455: Saurin-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bonnydoon-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459456: Saurin-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Bonnydoon-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459463: Sirdrak-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
459467: Tamalpais-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Barnabe variant-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459468: Tamalpais-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Barnabe variant-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459469: Tamalpais-----	50	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Barnabe variant-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459471: Tocaloma-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
McMullin-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459472: Tocaloma-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
McMullin-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459473: Tocaloma-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
McMullin-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Urban land-----	25	Not rated		Not rated		Not rated	
459474: Tocaloma-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
McMullin-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Urban land-----	20	Not rated		Not rated		Not rated	
459475: Tocaloma-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Saurin-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part II (Hazard of Erosion and Suitability for Roads)—Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459476: Tocaloma-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Saurin-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459477: Tocaloma-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Saurin-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459481: Tomales-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459489: Tomales-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Steinbeck-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
459490: Tomales-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Steinbeck-----	30	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
459494: Urban land-----	70	Not rated		Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated		Not rated	
459497: Yorkville-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
459498: Yorkville-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
459499: Yorkville-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part II (Hazard of Erosion and Suitability for Roads)-Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459500: Yorkville-----	60	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459501: Yorkville-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated		Not rated	

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Table 6.—Land Management, Part III (Site Preparation)

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
455965: Alambique-----	45	Unsuited Slope	1.00	Unsuited Slope	1.00
McGarvey-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
455966: Barnabe-----	45	Unsuited Slope	1.00	Unsuited Slope	1.00
Candlestick-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
455967: Barnabe-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Rock outcrop-----	40	Not rated		Not rated	
455970: Candlestick-----	45	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe-----	25	Unsuited Slope	1.00	Unsuited Slope	1.00
455971: Candlestick-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Kron-----	25	Unsuited Slope	1.00	Unsuited Slope	1.00
Buriburi-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
455972: Candlestick variant-	85	Well suited		Well suited	
455973: Candlestick variant-	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
455974: Fagan-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50

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Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455976: Los Gatos-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
455977: Maymen-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
455980: Obispo-----	85	Well suited		Well suited	
455981: Obispo-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
455982: Orthents-----	85	Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455986: Pits-----	50	Not rated		Not rated	
Dumps-----	50	Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455989: Scarper-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Miramar-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
455990: Sirdrak-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
455991: Typic Argiustolls---	50	Well suited		Well suited	
Urban land-----	30	Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated	

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Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455993:					
Urban land-----	50	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455994:					
Urban land-----	50	Not rated		Not rated	
Orthents-----	40	Not rated		Not rated	
455995:					
Urban land-----	65	Not rated		Not rated	
Orthents-----	30	Unsuited Wetness	1.00	Well suited	
455996:					
Urban land-----	65	Not rated		Not rated	
Orthents-----	25	Not rated		Not rated	
455997:					
Urban land-----	45	Not rated		Not rated	
Sirdrak-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
455998:					
Zeni-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Zeni variant-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
456000:					
Beaches-----	100	Not rated		Not rated	
456001:					
Water-----	100	Not rated		Not rated	
456330:					
Botella-----	85	Well suited		Well suited	
456331:					
Butano-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
456344:					
Coastal beaches-----	85	Unsuited Wetness	1.00	Well suited	
456364:					
Denison-----	85	Well suited		Poorly suited Stickiness; high plasticity index	0.50
456365:					
Denison-----	85	Well suited		Well suited	
456367:					
Denison-----	85	Well suited		Well suited	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456368: Denison-----	85	Well suited		Well suited	
456376: Elkhorn-----	85	Well suited		Well suited	
456377: Elkhorn-----	85	Well suited		Well suited	
456379: Elkhorn-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456382: Farallone-----	85	Well suited		Well suited	
456383: Farallone-----	85	Well suited		Well suited	
456384: Farallone-----	85	Well suited		Well suited	
456385: Farallone-----	85	Well suited		Well suited	
456386: Farallone-----	85	Well suited		Well suited	
456387: Farallone-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456388: Farallone-----	85	Well suited		Well suited	
456390: Farallone-----	85	Well suited		Well suited	
456394: Gazos-----	85	Well suited		Well suited	
456397: Gazos-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456398: Gazos-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
456399: Gazos (dark phase)--	60	Well suited		Well suited	
Calera-----	20	Well suited		Well suited	
456400: Gazos (dark phase)--	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Calera-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456401: Gazos (dark phase)---	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Calera-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
456403: Gazos (dark phase)---	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Sweeney-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456404: Gazos-----	40	Well suited		Well suited	
Lobitos-----	40	Well suited		Well suited	
456405: Gazos-----	40	Well suited		Well suited	
Lobitos-----	40	Well suited		Well suited	
456406: Gazos-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Lobitos-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated	
456416: Hugo-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Josephine-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456418: Hugo-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Josephine-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
456420: Hugo-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Josephine-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456423: Hugo-----	40	Well suited		Well suited	
Josephine-----	40	Well suited		Well suited	
456444: Lobitos-----	85	Well suited		Well suited	
456445: Lobitos-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456446: Lobitos-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
456460: Mixed alluvial land	90	Well suited		Well suited	
456464: Miramar-----	85	Well suited		Well suited	
456465: Miramar-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456466: Miramar-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456467: Miramar-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456468: Miramar-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
456469: Montara-----	85	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope	0.50
456475: Rough broken land---	50	Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated	
456485: Stabilized dune land	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456486: Sheridan-----	85	Well suited		Well suited	
456487: Sheridan-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456488: Sheridan-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456494: Soquel-----	85	Well suited		Well suited	
456506: Sweeney-----	85	Well suited		Well suited	
456511: Sweeney-----	75	Unsuited Slope	1.00	Unsuited Slope	1.00
456517: Tierra-----	85	Well suited		Well suited	
456518: Tierra-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456519: Tierra-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
456520: Tierra-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459393: Ballard-----	85	Well suited		Well suited	
459395: Barnabe-----	85	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
459396: Beaches-----	100	Not rated		Not rated	
459397: Blucher-----	40	Well suited		Well suited	
Cole-----	30	Well suited		Well suited	
459398: Bonnydoon-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459399: Bonnydoon-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
459402: Centissima-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Barnabe-----	20	Poorly suited Slope	0.50	Poorly suited Slope Rock fragments	0.50 0.50
459403: Centissima-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459403: Barnabe-----	20	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
459404: Centissima-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe-----	20	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
459406: Cortina-----	85	Well suited		Well suited	
459407: Cronkhite-----	50	Well suited		Well suited	
Barnabe-----	30	Well suited		Poorly suited Rock fragments	0.50
459408: Cronkhite-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Barnabe-----	30	Poorly suited Slope	0.50	Poorly suited Slope Rock fragments	0.50 0.50
459409: Cronkhite-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe-----	30	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
459410: Cronkhite-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe-----	30	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
459411: Dipsea-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe-----	20	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
459412: Dipsea-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe-----	20	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459414: Dune land-----	95	Not rated		Not rated	
459415: Felton variant-----	40	Well suited		Well suited	
Soulajule-----	40	Well suited		Well suited	
459416: Felton variant-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Soulajule-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459417: Felton variant-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Soulajule-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
459418: Felton variant-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Soulajule-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
459419: Fluvents-----	100	Not rated		Not rated	
459420: Gilroy-----	35	Unsuited Slope Restrictive layer	1.00 0.50	Unsuited Slope	1.00
Gilroy variant-----	25	Unsuited Slope	1.00	Unsuited Slope	1.00
Bonnydoon variant---	20	Unsuited Slope Restrictive layer	1.00 1.00	Unsuited Slope	1.00
459421: Henneke-----	85	Unsuited Slope Restrictive layer	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50
459422: Humaquepts-----	90	Unsuited Wetness	1.00	Well suited	
459423: Hydraquents-----	90	Unsuited Wetness	1.00	Poorly suited Wetness	0.50
459425: Inverness-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459427: Inverness-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
459432: Los Osos-----	60	Well suited		Well suited	
Bonnydoon-----	25	Well suited		Well suited	
459433: Los Osos-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Bonnydoon-----	20	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459434: Los Osos-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Bonnydoon-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
459436: Los Osos-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Urban land-----	30	Not rated		Not rated	
Bonnydoon-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
459437: Maymen-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Maymen variant-----	20	Unsuited Slope	1.00	Unsuited Slope Stickiness; high plasticity index	1.00
459438: Montara-----	85	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope	0.50
459439: Novato-----	90	Unsuited Wetness	1.00	Poorly suited Wetness	0.50
459440: Olmopali-----	85	Well suited		Well suited	
459441: Olmopali-----	85	Well suited		Well suited	
459442: Olmopali-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459448: Palomarin-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Wittenberg-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
459451: Rock outcrop-----	50	Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated	
459452: Rodeo-----	90	Well suited		Well suited	
459453: Saurin-----	50	Well suited		Well suited	
Bonnydoon-----	30	Well suited		Well suited	
459454: Saurin-----	40	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Bonnydoon-----	30	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459455: Saurin-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Bonnydoon-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
459456: Saurin-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Bonnydoon-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
459463: Sirdrak-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459467: Tamalpais-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Barnabe variant-----	30	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope	0.50
459468: Tamalpais-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe variant-----	30	Unsuited Slope Restrictive layer	1.00 1.00	Unsuited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459469: Tamalpais-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Barnabe variant-----	40	Unsuited Slope Restrictive layer	1.00 1.00	Unsuited Slope	1.00
459471: Tocaloma-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
McMullin-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
459472: Tocaloma-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
McMullin-----	35	Unsuited Slope	1.00	Unsuited Slope	1.00
459473: Tocaloma-----	30	Poorly suited Slope	0.50	Poorly suited Slope	0.50
McMullin-----	25	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Urban land-----	25	Not rated		Not rated	
459474: Tocaloma-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
McMullin-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
Urban land-----	20	Not rated		Not rated	
459475: Tocaloma-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Saurin-----	30	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459476: Tocaloma-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Saurin-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
459477: Tocaloma-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Saurin-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 6.—Land Management, Part III (Site Preparation)—Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459481: Tomasles-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
459489: Tomasles-----	50	Unsuited Slope	1.00	Unsuited Slope	1.00
Steinbeck-----	30	Unsuited Slope	1.00	Unsuited Slope	1.00
459490: Tomasles-----	50	Well suited		Well suited	
Steinbeck-----	30	Well suited		Well suited	
459494: Urban land-----	70	Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated	
459497: Yorkville-----	85	Well suited		Well suited	
459498: Yorkville-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
459499: Yorkville-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
459500: Yorkville-----	60	Well suited		Well suited	
Rock outcrop-----	20	Not rated		Not rated	
459501: Yorkville-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Rock outcrop-----	20	Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated	

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Table 6.-Land Management, Part IV (Site Restoration)

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Low Texture/slope/ rock fragments	0.10	Low	
455965: Alambique-----	45	Low Texture/rock fragments	0.10	Low	
McGarvey-----	35	Low Texture/slope/ rock fragments	0.10	Low	
455966: Barnabe-----	45	Moderate Texture/slope/ rock fragments	0.50	Low	
Candlestick-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
455967: Barnabe-----	40	Moderate Texture/slope/ rock fragments	0.50	Low	
Rock outcrop-----	40	Not rated		Not rated	
455970: Candlestick-----	45	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Barnabe-----	25	Moderate Texture/slope/ rock fragments	0.50	Low	
455971: Candlestick-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Kron-----	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Buriburi-----	20	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to	Potential for seedling
		soil by fire	mortality
		Rating class and limiting features	Rating class and limiting features
		Value	Value
455972: Candlestick variant-	85	Low Texture/rock fragments	Low 0.10
455973: Candlestick variant-	85	Low Texture/rock fragments	Low 0.10
455974: Fagan-----	85	Low	Low
455976: Los Gatos-----	85	Low Texture/rock fragments	Low 0.10
455977: Maymen-----	85	Moderate Texture/rock fragments	Low 0.50
455980: Obispo-----	85	Moderate Texture/rock fragments	Low 0.50
455981: Obispo-----	85	Moderate Texture/rock fragments	Low 0.50
455982: Orthents-----	85	Not rated	Not rated
455983: Orthents-----	85	Not rated	Not rated
455984: Orthents-----	55	Not rated	Not rated
Urban land-----	35	Not rated	Not rated
455985: Orthents-----	50	Not rated	Not rated
Urban land-----	35	Not rated	Not rated
455986: Pits-----	50	Not rated	Not rated
Dumps-----	50	Not rated	Not rated
455988: Rock outcrop-----	45	Not rated	Not rated
Orthents-----	45	Not rated	Not rated

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Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to	Potential for seedling
		soil by fire	mortality
		Rating class and limiting features	Rating class and limiting features
		Value	Value
455989: Scarper-----	40	Moderate Texture/rock fragments	0.50 Low
Miramar-----	35	Low Texture/rock fragments	0.10 Low
455990: Sirdrak-----	85	Moderate Texture/rock fragments	0.50 Low
455991: Typic Argiustolls---	50	Low Texture/rock fragments	0.10 Low
Urban land-----	30	Not rated	Not rated
455992: Urban land-----	85	Not rated	Not rated
455993: Urban land-----	50	Not rated	Not rated
Orthents-----	45	Not rated	Not rated
455994: Urban land-----	50	Not rated	Not rated
Orthents-----	40	Not rated	Not rated
455995: Urban land-----	65	Not rated	Not rated
Orthents-----	30	Not rated	Not rated
455996: Urban land-----	65	Not rated	Not rated
Orthents-----	25	Not rated	Not rated
455997: Urban land-----	45	Not rated	Not rated
Sirdrak-----	35	Moderate Texture/rock fragments	0.50 Low
455998: Zeni-----	40	Low Texture/rock fragments	0.10 Low
Zeni variant-----	35	Low Texture/rock fragments	0.10 Low

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to	Potential for seedling		
		soil by fire	mortality	Rating class and	Rating class and
		Rating class and	Value	Rating class and	Value
		limiting features		limiting features	
456000: Beaches-----	100	Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated	
456330: Botella-----	85	Low Texture/rock fragments	0.10	Low	
456331: Butano-----	85	Low Texture/rock fragments	0.10	Low	
456344: Coastal beaches----	85	High Texture/rock fragments	1.00	High Wetness Salinity	1.00 1.00
456364: Denison-----	85	Low		High Wetness	1.00
456365: Denison-----	85	Moderate Texture/rock fragments	0.50	Low	
456367: Denison-----	85	Low Texture/rock fragments	0.10	Low	
456368: Denison-----	85	Low Texture/rock fragments	0.10	Low	
456376: Elkhorn-----	85	Low Texture/rock fragments	0.10	Low	
456377: Elkhorn-----	85	Low Texture/rock fragments	0.10	Low	
456379: Elkhorn-----	85	Low Texture/rock fragments	0.10	Low	
456382: Farallone-----	85	Low Texture/rock fragments	0.10	Low	

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Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456383: Farallone-----	85	Low Texture/rock fragments	0.10	Low	
456384: Farallone-----	85	Moderate Texture/rock fragments	0.50	Low	
456385: Farallone-----	85	Moderate Texture/rock fragments	0.50	Low	
456386: Farallone-----	85	Moderate Texture/rock fragments	0.50	Low	
456387: Farallone-----	85	Moderate Texture/rock fragments	0.50	Low	
456388: Farallone-----	85	Moderate Texture/rock fragments	0.50	Low	
456390: Farallone-----	85	High Texture/rock fragments	1.00	Low	
456394: Gazos-----	85	Low Texture/rock fragments	0.10	Low	
456397: Gazos-----	85	Low Texture/rock fragments	0.10	Low	
456398: Gazos-----	85	Low Texture/rock fragments	0.10	Low	
456399: Gazos (dark phase)--	60	Low Texture/rock fragments	0.10	Low	
Calera-----	20	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456400: Gazos (dark phase) --	40	Low Texture/rock fragments	0.10	Low	
Calera-----	40	Low Texture/rock fragments	0.10	Low	
456401: Gazos (dark phase) --	40	Low Texture/rock fragments	0.10	Low	
Calera-----	40	Low Texture/rock fragments	0.10	Low	
456403: Gazos (dark phase) --	40	Low Texture/rock fragments	0.10	Low	
Sweeney-----	40	Low		Low	
456404: Gazos-----	40	Low Texture/rock fragments	0.10	Low	
Lobitos-----	40	Low Texture/rock fragments	0.10	Low	
456405: Gazos-----	40	Low Texture/rock fragments	0.10	Low	
Lobitos-----	40	Low Texture/rock fragments	0.10	Low	
456406: Gazos-----	40	Low Texture/rock fragments	0.10	Low	
Lobitos-----	40	Low Texture/rock fragments	0.10	Low	
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456416: Hugo-----	40	Low Texture/rock fragments	0.10	Low	
Josephine-----	40	Low Texture/rock fragments	0.10	Low	
456418: Hugo-----	40	Low Texture/slope/ rock fragments	0.10	Low	
Josephine-----	40	Low Texture/rock fragments	0.10	Low	
456420: Hugo-----	40	Low		Low	
Josephine-----	40	Low Texture/rock fragments	0.10	Low	
456423: Hugo-----	40	Low Texture/surface depth/rock fragments	0.10	Low	
Josephine-----	40	Low Texture/rock fragments	0.10	Low	
456444: Lobitos-----	85	Low Texture/rock fragments	0.10	Low	
456445: Lobitos-----	85	Low Texture/rock fragments	0.10	Low	
456446: Lobitos-----	85	Low Texture/rock fragments	0.10	Low	
456460: Mixed alluvial land-	90	High Texture/rock fragments	1.00	Low	
456464: Miramar-----	85	Moderate Texture/rock fragments	0.50	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456465: Miramar-----	85	Moderate Texture/rock fragments	0.50	Low	
456466: Miramar-----	85	Moderate Texture/rock fragments	0.50	Low	
456467: Miramar-----	85	Moderate Texture/rock fragments	0.50	Low	
456468: Miramar-----	85	Moderate Texture/rock fragments	0.50	Low	
456469: Montara-----	85	Low		Low	
456475: Rough broken land---	50	Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated	
456485: Stabilized dune land	90	High Texture/rock fragments	1.00	Low	
456486: Sheridan-----	85	Moderate Texture/rock fragments	0.50	Low	
456487: Sheridan-----	85	Moderate Texture/rock fragments	0.50	Low	
456488: Sheridan-----	85	Moderate Texture/slope/ rock fragments	0.50	Low	
456494: Soquel-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
456506: Sweeney-----	85	Low Texture/rock fragments	0.10	Low	
456511: Sweeney-----	75	Low		Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456517: Tierra-----	85	Low Texture/rock fragments	0.10	Low	
456518: Tierra-----	85	Low Texture/rock fragments	0.10	Low	
456519: Tierra-----	85	Low Texture/rock fragments	0.10	Low	
456520: Tierra-----	85	Low Texture/rock fragments	0.10	Low	
459393: Ballard-----	85	Low Texture/rock fragments	0.10	Low	
459395: Barnabe-----	85	High Texture/slope/ rock fragments	1.00	Low	
459396: Beaches-----	100	Not rated		Not rated	
459397: Blucher-----	40	Low Texture/rock fragments	0.10	High Wetness	1.00
Cole-----	30	Low		High Wetness	1.00
459398: Bonnydoon-----	85	Low Texture/rock fragments	0.10	Low	
459399: Bonnydoon-----	85	Low Texture/rock fragments	0.10	Low	
459402: Centissima-----	50	Low Texture/rock fragments	0.10	Low	
Barnabe-----	20	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459403: Centissima-----	50	Low Texture/rock fragments	0.10	Low	
Barnabe-----	20	Moderate Texture/slope/ rock fragments	0.50	Low	
459404: Centissima-----	40	Low Texture/rock fragments	0.10	Low	
Barnabe-----	20	Moderate Texture/slope/ rock fragments	0.50	Low	
459406: Cortina-----	85	Moderate Texture/rock fragments	0.50	Low	
459407: Cronkhite-----	50	Low Texture/rock fragments	0.10	Low	
Barnabe-----	30	Moderate Texture/rock fragments	0.50	Low	
459408: Cronkhite-----	50	Low Texture/rock fragments	0.10	Low	
Barnabe-----	30	Moderate Texture/rock fragments	0.50	Low	
459409: Cronkhite-----	40	Low Texture/rock fragments	0.10	Low	
Barnabe-----	30	Moderate Texture/slope/ rock fragments	0.50	Low	
459410: Cronkhite-----	40	Low Texture/rock fragments	0.10	Low	
Barnabe-----	30	Moderate Texture/slope/ rock fragments	0.50	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire	Potential for seedling mortality		
		Rating class and limiting features	Value	Rating class and limiting features	Value
459411: Dipsea-----	50	Moderate Texture/slope/ rock fragments	0.50	Low	
Barnabe-----	20	Moderate Texture/slope/ rock fragments	0.50	Low	
459412: Dipsea-----	50	Moderate Texture/slope/ rock fragments	0.50	Low	
Barnabe-----	20	Moderate Texture/slope/ rock fragments	0.50	Low	
459414: Dune land-----	95	Not rated		Not rated	
459415: Felton variant-----	40	Low Texture/rock fragments	0.10	Low	
Soulajule-----	40	Low		Low	
459416: Felton variant-----	40	Low Texture/rock fragments	0.10	Low	
Soulajule-----	40	Low		Low	
459417: Felton variant-----	50	Low Texture/rock fragments	0.10	Low	
Soulajule-----	40	Low		Low	
459418: Felton variant-----	50	Low Texture/rock fragments	0.10	Low	
Soulajule-----	40	Low		Low	
459419: Fluvents-----	100	Not rated		Not rated	
459420: Gilroy-----	35	Low Texture/rock fragments	0.10	Low	
Gilroy variant-----	25	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459420: Bonnydoon variant---	20	Low Texture/rock fragments	0.10	Low	
459421: Henneke-----	85	Low		Low	
459422: Humaquepts-----	90	Low		Not rated	
459423: Hydraquepts-----	90	Low		Not rated	
459425: Inverness-----	85	Low Texture/rock fragments	0.10	Low	
459427: Inverness-----	85	Low Texture/rock fragments	0.10	Low	
459432: Los Osos-----	60	Low Texture/rock fragments	0.10	Low	
Bonnydoon-----	25	Low Texture/rock fragments	0.10	Low	
459433: Los Osos-----	60	Low Texture/rock fragments	0.10	Low	
Bonnydoon-----	20	Low Texture/rock fragments	0.10	Low	
459434: Los Osos-----	60	Low Texture/rock fragments	0.10	Low	
Bonnydoon-----	20	Low Texture/rock fragments	0.10	Low	
459436: Los Osos-----	40	Low Texture/rock fragments	0.10	Low	
Urban land-----	30	Not rated		Not rated	
Bonnydoon-----	20	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to	Potential for seedling		
		soil by fire	mortality	Rating class and	Value
		Rating class and	Value	Rating class and	Value
		limiting features		limiting features	
459437: Maymen-----	50	Moderate Texture/rock fragments	0.50	Low	
Maymen variant-----	20	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
459438: Montara-----	85	Low		Low	
459439: Novato-----	90	Low Texture/rock fragments	0.10	High Wetness Soil reaction Salinity	1.00 1.00 1.00
459440: Olmopali-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
459441: Olmopali-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
459442: Olmopali-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
459448: Palomarin-----	40	Low Texture/rock fragments	0.10	Low	
Wittenberg-----	30	Low Texture/rock fragments	0.10	Low	
459451: Rock outcrop-----	50	Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated	
459452: Rodeo-----	90	Low		High Wetness	1.00
459453: Saurin-----	50	Low		Low	
Bonnydoon-----	30	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459454: Saurin-----	40	Low		Low	
Bonnydoon-----	30	Low Texture/rock fragments	0.10	Low	
459455: Saurin-----	50	Low		Low	
Bonnydoon-----	40	Low Texture/rock fragments	0.10	Low	
459456: Saurin-----	50	Low		Low	
Bonnydoon-----	40	Low Texture/rock fragments	0.10	Low	
459463: Sirdrak-----	90	Moderate Texture/rock fragments	0.50	Low	
459467: Tamalpais-----	60	Moderate Texture/rock fragments	0.50	Low	
Barnabe variant----	30	Moderate Texture/rock fragments	0.50	Low	
459468: Tamalpais-----	50	Moderate Texture/rock fragments	0.50	Low	
Barnabe variant----	30	Moderate Texture/rock fragments	0.50	Low	
459469: Tamalpais-----	50	Low Texture/rock fragments	0.10	Low	
Barnabe variant----	40	Low Texture/rock fragments	0.10	Low	
459471: Tocaloma-----	40	Moderate Texture/rock fragments	0.50	Low	
McMullin-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire	Potential for seedling mortality		
		Rating class and limiting features	Value	Rating class and limiting features	Value
459472: Tocaloma-----	40	Moderate Texture/rock fragments	0.50	Low	
McMullin-----	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
459473: Tocaloma-----	30	Moderate Texture/rock fragments	0.50	Low	
McMullin-----	25	Moderate Texture/surface depth/rock fragments	0.50	Low	
Urban land-----	25	Not rated		Not rated	
459474: Tocaloma-----	40	Moderate Texture/rock fragments	0.50	Low	
McMullin-----	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Urban land-----	20	Not rated		Not rated	
459475: Tocaloma-----	35	Moderate Texture/rock fragments	0.50	Low	
Saurin-----	30	Low		Low	
459476: Tocaloma-----	40	Moderate Texture/rock fragments	0.50	Low	
Saurin-----	30	Low		Low	
459477: Tocaloma-----	40	Moderate Texture/rock fragments	0.50	Low	
Saurin-----	30	Low		Low	
459481: Tomales-----	85	Low Texture/rock fragments	0.10	Low	

Soil Survey of Golden Gate National Recreation Area, California

Table 6.-Land Management, Part IV (Site Restoration)-Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459489: Tomales-----	50	Low Texture/rock fragments	0.10	Low	
Steinbeck-----	30	Low Texture/rock fragments	0.10	Low	
459490: Tomales-----	50	Low Texture/rock fragments	0.10	Low	
Steinbeck-----	30	Low Texture/rock fragments	0.10	Low	
459494: Urban land-----	70	Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated	
459497: Yorkville-----	85	Low		Low	
459498: Yorkville-----	85	Low		Low	
459499: Yorkville-----	85	Low		Low	
459500: Yorkville-----	60	Low		Low	
Rock outcrop-----	20	Not rated		Not rated	
459501: Yorkville-----	60	Low		Low	
Rock outcrop-----	20	Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very limited Slope	1.00	Very limited Slope	1.00
455965: Alambique-----	45	Very limited Slope Gravel	1.00 0.50	Very limited Slope Gravel	1.00 0.50
McGarvey-----	35	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement	1.00 0.96
455966: Barnabe-----	45	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00
Candlestick-----	35	Very limited Slope	1.00	Very limited Slope	1.00
455967: Barnabe-----	40	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	40	Not rated		Not rated	
455970: Candlestick-----	45	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	25	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00
455971: Candlestick-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Kron-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Buriburi-----	20	Very limited Slope Gravel	1.00 0.50	Very limited Slope Gravel	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455972: Candlestick variant-	85	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04
455973: Candlestick variant-	85	Very limited Slope	1.00	Very limited Slope	1.00
455974: Fagan-----	85	Very limited Slope Slow water movement	1.00 0.41	Very limited Slope Slow water movement	1.00 0.41
455976: Los Gatos-----	85	Very limited Slope	1.00	Very limited Slope	1.00
455977: Maymen-----	85	Very limited Slope Depth to bedrock Dusty Gravel	1.00 1.00 0.50 0.41	Very limited Slope Depth to bedrock Dusty Gravel	1.00 1.00 0.50 0.41
455980: Obispo-----	85	Very limited Depth to bedrock Slow water movement Too clayey Slope	1.00 0.41 0.40 0.16	Very limited Depth to bedrock Too clayey Slow water movement Slope	1.00 0.50 0.41 0.16
455981: Obispo-----	85	Very limited Slope Depth to bedrock Too clayey Slow water movement	1.00 1.00 0.50 0.41	Very limited Slope Depth to bedrock Too clayey Slow water movement	1.00 1.00 0.50 0.41
455982: Orthents-----	85	Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455986: Pits-----	50	Not rated		Not rated	
Dumps-----	50	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455988: Rock outcrop-----	45	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455989: Scarper-----	40	Very limited Slope Gravel	1.00 0.18	Very limited Slope Gravel	1.00 0.18
Miramar-----	35	Very limited Slope	1.00	Very limited Slope	1.00
455990: Sirdrak-----	85	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 1.00
455991: Typic Argiustolls---	50	Somewhat limited Slow water movement Slope	0.41 0.16	Somewhat limited Slow water movement Slope	0.41 0.16
Urban land-----	30	Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated	
455993: Urban land-----	50	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455994: Urban land-----	50	Not rated		Not rated	
Orthents-----	40	Not rated		Not rated	
455995: Urban land-----	65	Not rated		Not rated	
Orthents-----	30	Not rated		Not rated	
455996: Urban land-----	65	Not rated		Not rated	
Orthents-----	25	Not rated		Not rated	
455997: Urban land-----	45	Not rated		Not rated	
Sirdrak-----	35	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 1.00
455998: Zeni-----	40	Very limited Slope Gravel	1.00 0.41	Very limited Slope Gravel	1.00 0.41

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455998: Zeni variant-----	35	Very limited Slope Gravel	1.00 0.14	Very limited Slope Gravel	1.00 0.14
456000: Beaches-----	100	Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated	
456330: Botella-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
456331: Butano-----	85	Very limited Slope Gravel	1.00 0.41	Very limited Slope Gravel	1.00 0.41
456344: Coastal beaches-----	85	Very limited Depth to saturated zone Flooding Too sandy Salinity	1.00 1.00 1.00 1.00	Very limited Too sandy Depth to saturated zone Salinity Flooding	1.00 1.00 1.00 0.40
456364: Denison-----	85	Very limited Depth to saturated zone Slow water movement	1.00 0.41	Very limited Depth to saturated zone Slow water movement	1.00 0.41
456365: Denison-----	85	Somewhat limited Slow water movement	0.41	Somewhat limited Slow water movement	0.41
456367: Denison-----	85	Somewhat limited Slow water movement	0.41	Somewhat limited Slow water movement	0.41
456368: Denison-----	85	Somewhat limited Slow water movement Slope	0.41 0.37	Somewhat limited Slow water movement Slope	0.41 0.37
456376: Elkhorn-----	85	Not limited		Not limited	
456377: Elkhorn-----	85	Not limited		Not limited	
456379: Elkhorn-----	85	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456382: Farallone-----	85	Not limited		Not limited	
456383: Farallone-----	85	Not limited		Not limited	
456384: Farallone-----	85	Not limited		Not limited	
456385: Farallone-----	85	Not limited		Not limited	
456386: Farallone-----	85	Not limited		Not limited	
456387: Farallone-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456388: Farallone-----	85	Not limited		Not limited	
456390: Farallone-----	85	Somewhat limited Too sandy	0.67	Somewhat limited Too sandy	0.67
456394: Gazos-----	85	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16
456397: Gazos-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456398: Gazos-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456399: Gazos (dark phase)--	60	Somewhat limited Slope	0.84	Somewhat limited Slope	0.84
Calera-----	20	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63
456400: Gazos (dark phase)--	40	Very limited Slope	1.00	Very limited Slope	1.00
Calera-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456401: Gazos (dark phase)--	40	Very limited Slope	1.00	Very limited Slope	1.00
Calera-----	40	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456403: Gazos (dark phase)---	40	Very limited Slope	1.00	Very limited Slope	1.00
Sweeney-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456404: Gazos-----	40	Not limited		Not limited	
Lobitos-----	40	Not limited		Not limited	
456405: Gazos-----	40	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
Lobitos-----	40	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
456406: Gazos-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Lobitos-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated	
456416: Hugo-----	40	Very limited Slope Dusty	1.00 0.50	Very limited Slope Dusty	1.00 0.50
Josephine-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456418: Hugo-----	40	Very limited Slope Dusty	1.00 0.50	Very limited Slope Dusty	1.00 0.50
Josephine-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456420: Hugo-----	40	Very limited Slope Dusty	1.00 0.50	Very limited Slope Dusty	1.00 0.50
Josephine-----	40	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456423: Hugo-----	40	Not limited		Not limited	
Josephine-----	40	Not limited		Not limited	
456444: Lobitos-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63
456445: Lobitos-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456446: Lobitos-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456460: Mixed alluvial land-	90	Very limited Flooding Too sandy	1.00 1.00	Very limited Too sandy	1.00
456464: Miramar-----	85	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16
456465: Miramar-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456466: Miramar-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456467: Miramar-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456468: Miramar-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456469: Montara-----	85	Very limited Slope Depth to bedrock Large stones content Gravel	1.00 1.00 0.76 0.11	Very limited Slope Depth to bedrock Large stones content Gravel	1.00 1.00 0.76 0.11
456475: Rough broken land---	50	Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated	
456485: Stabilized dune land	90	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456486: Sheridan-----	85	Somewhat limited Slope	0.84	Somewhat limited Slope	0.84
456487: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456488: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456494: Soquel-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
456506: Sweeney-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
456511: Sweeney-----	75	Very limited Slope Large stones content	1.00 0.76	Very limited Slope Large stones content	1.00 0.76
456517: Tierra-----	85	Somewhat limited Slow water movement	0.45	Somewhat limited Slow water movement	0.45
456518: Tierra-----	85	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
456519: Tierra-----	85	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
456520: Tierra-----	85	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
459393: Ballard-----	85	Somewhat limited Gravel	0.32	Somewhat limited Gravel	0.32
459395: Barnabe-----	85	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459396: Beaches-----	100	Not rated		Not rated	
459397: Blucher-----	40	Very limited Depth to saturated zone Flooding Slow water movement	1.00 1.00 0.41	Very limited Depth to saturated zone Slow water movement	1.00 0.41
Cole-----	30	Very limited Depth to saturated zone Flooding Slow water movement	1.00 1.00 0.41	Very limited Depth to saturated zone Slow water movement	1.00 0.41
459398: Bonnydoon-----	85	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25
459399: Bonnydoon-----	85	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25
459402: Centissima-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00
459403: Centissima-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00
459404: Centissima-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	1.00 1.00 1.00
459406: Cortina-----	85	Very limited Flooding Gravel	1.00 0.36	Somewhat limited Gravel	0.36

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459407:					
Cronkhite-----	50	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Slow water movement	0.41	Slow water movement	0.41
Barnabe-----	30	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63
459408:					
Cronkhite-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Barnabe-----	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
459409:					
Cronkhite-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Barnabe-----	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
459410:					
Cronkhite-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Barnabe-----	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
459411:					
Dipsea-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
Barnabe-----	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
459412:					
Dipsea-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459412: Barnabe-----	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
459414: Dune land-----	95	Not rated		Not rated	
459415: Felton variant-----	40	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Slow water movement	0.41	Slow water movement	0.41
Soulajule-----	40	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Slow water movement	0.41	Slow water movement	0.41
459416: Felton variant-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Soulajule-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
459417: Felton variant-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Soulajule-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
459418: Felton variant-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
Soulajule-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41
459419: Fluents-----	100	Not rated		Not rated	
459420: Gilroy-----	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459420: Gilroy variant-----	25	Very limited Slope	1.00	Very limited Slope	1.00
Bonnydoon variant---	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
459421: Henneke-----	85	Very limited Slope Depth to bedrock Large stones content Gravel	1.00 1.00 0.50 0.08	Very limited Slope Depth to bedrock Large stones content Gravel	1.00 1.00 0.50 0.08
459422: Humaquepts-----	90	Not rated		Not rated	
459423: Hydraquepts-----	90	Not rated		Not rated	
459425: Inverness-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459427: Inverness-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459432: Los Osos-----	60	Somewhat limited Slow water movement Slope	0.41 0.16	Somewhat limited Slow water movement Slope	0.41 0.16
Bonnydoon-----	25	Very limited Depth to bedrock Gravel Slope	1.00 0.25 0.16	Very limited Depth to bedrock Gravel Slope	1.00 0.25 0.16
459433: Los Osos-----	60	Very limited Slope Slow water movement	1.00 0.41	Very limited Slope Slow water movement	1.00 0.41
Bonnydoon-----	20	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25
459434: Los Osos-----	60	Very limited Slope Slow water movement	1.00 0.41	Very limited Slope Slow water movement	1.00 0.41
Bonnydoon-----	20	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459436:					
Los Osos-----	40	Very limited Slope Slow water movement	1.00 0.41	Very limited Slope Slow water movement	1.00 0.41
Urban land-----	30	Not rated		Not rated	
Bonnydoon-----	20	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25	Very limited Slope Depth to bedrock Gravel	1.00 1.00 0.25
459437:					
Maymen-----	50	Very limited Slope Depth to bedrock Dusty Gravel	1.00 1.00 0.50 0.41	Very limited Slope Depth to bedrock Dusty Gravel	1.00 1.00 0.50 0.41
Maymen variant-----	20	Very limited Slope Gravel Slow water movement	1.00 0.41 0.41	Very limited Slope Gravel Slow water movement	1.00 0.41 0.41
459438:					
Montara-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
459439:					
Novato-----	90	Very limited Depth to saturated zone Salinity Flooding Too clayey Slow water movement	1.00 1.00 1.00 1.00 0.96	Very limited Depth to saturated zone Salinity Too clayey Slow water movement Flooding	1.00 1.00 1.00 0.96 0.40
459440:					
Olompali-----	85	Very limited Depth to saturated zone Slow water movement	1.00 0.45	Very limited Depth to saturated zone Slow water movement	1.00 0.45
459441:					
Olompali-----	85	Very limited Depth to saturated zone Slope Slow water movement	1.00 0.63 0.45	Very limited Depth to saturated zone Slope Slow water movement	1.00 0.63 0.45

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459442: Olompali-----	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Slow water movement	0.45	Slow water movement	0.45
459448: Palomarin-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Wittenberg-----	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	1.00	Gravel	1.00
459451: Rock outcrop-----	50	Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated	
459452: Rodeo-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.41	Slow water movement	0.41
		Slope	0.04	Slope	0.04
459453: Saurin-----	50	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
Bonnydoon-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel	0.25	Gravel	0.25
		Slope	0.04	Slope	0.04
459454: Saurin-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Bonnydoon-----	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel	0.25	Gravel	0.25
459455: Saurin-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Bonnydoon-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel	0.25	Gravel	0.25
459456: Saurin-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459456: Bonnydoon-----	40	Very limited Slope Depth to bedrock Gravel	 1.00 1.00 0.25	Very limited Slope Depth to bedrock Gravel	 1.00 1.00 0.25
459463: Sirdrak-----	90	Very limited Slope Too sandy	 1.00 1.00	Very limited Too sandy Slope	 1.00 1.00
459467: Tamalpais-----	60	Very limited Slope Gravel	 1.00 1.00	Very limited Slope Gravel	 1.00 1.00
Barnabe variant-----	30	Very limited Slope Gravel Depth to bedrock	 1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	 1.00 1.00 1.00
459468: Tamalpais-----	50	Very limited Slope Gravel	 1.00 1.00	Very limited Slope Gravel	 1.00 1.00
Barnabe variant-----	30	Very limited Slope Gravel Depth to bedrock	 1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	 1.00 1.00 1.00
459469: Tamalpais-----	50	Very limited Slope Gravel	 1.00 1.00	Very limited Slope Gravel	 1.00 1.00
Barnabe variant-----	40	Very limited Slope Gravel Depth to bedrock	 1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock	 1.00 1.00 1.00
459471: Tocaloma-----	40	Very limited Slope	 1.00	Very limited Slope	 1.00
McMullin-----	35	Very limited Slope Depth to bedrock	 1.00 1.00	Very limited Slope Depth to bedrock	 1.00 1.00
459472: Tocaloma-----	40	Very limited Slope	 1.00	Very limited Slope	 1.00
McMullin-----	35	Very limited Slope Depth to bedrock	 1.00 1.00	Very limited Slope Depth to bedrock	 1.00 1.00
459473: Tocaloma-----	30	Very limited Slope	 1.00	Very limited Slope	 1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459473: McMullin-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Urban land-----	25	Not rated		Not rated	
459474: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Urban land-----	20	Not rated		Not rated	
459475: Tocaloma-----	35	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459476: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459477: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459481: Tomales-----	85	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
459489: Tomales-----	50	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
Steinbeck-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459490: Tomales-----	50	Somewhat limited Slow water movement Slope	0.45 0.16	Somewhat limited Slow water movement Slope	0.45 0.16
Steinbeck-----	30	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part I (Camp and Picnic Areas)—Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459494: Urban land-----	70	Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated	
459497: Yorkville-----	85	Somewhat limited Slope Slow water movement	0.63 0.45	Somewhat limited Slope Slow water movement	0.63 0.45
459498: Yorkville-----	85	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
459499: Yorkville-----	85	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
459500: Yorkville-----	60	Somewhat limited Slope Slow water movement	0.63 0.45	Somewhat limited Slope Slow water movement	0.63 0.45
Rock outcrop-----	20	Not rated		Not rated	
459501: Yorkville-----	60	Very limited Slope Slow water movement	1.00 0.45	Very limited Slope Slow water movement	1.00 0.45
Rock outcrop-----	20	Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very limited Slope	1.00	Very limited Slope	1.00
455965: Alambique-----	45	Very limited Slope	1.00	Very limited Slope	1.00
McGarvey-----	35	Very limited Slope	1.00	Very limited Slope	1.00
455966: Barnabe-----	45	Very limited Slope	1.00	Very limited Slope	1.00
Candlestick-----	35	Very limited Slope	1.00	Very limited Slope	1.00
455967: Barnabe-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Rock outcrop-----	40	Not rated		Not rated	
455970: Candlestick-----	45	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	25	Very limited Slope	1.00	Very limited Slope	1.00
455971: Candlestick-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Kron-----	25	Very limited Slope	1.00	Very limited Slope	1.00
Buriburi-----	20	Very limited Slope	1.00	Very limited Slope	1.00
455972: Candlestick variant-	85	Not limited		Not limited	
455973: Candlestick variant-	85	Somewhat limited Slope	0.92	Not limited	
455974: Fagan-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.56
455976: Los Gatos-----	85	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455977: Maymen-----	85	Very limited Slope Dusty	1.00 0.50	Very limited Slope Dusty	1.00 0.50
455980: Obispo-----	85	Somewhat limited Too clayey	0.50	Somewhat limited Too clayey	0.50
455981: Obispo-----	85	Somewhat limited Slope Too clayey	0.92 0.50	Somewhat limited Too clayey	0.50
455982: Orthents-----	85	Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455986: Pits-----	50	Not rated		Not rated	
Dumps-----	50	Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455989: Scarper-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Miramar-----	35	Very limited Slope	1.00	Very limited Slope	1.00
455990: Sirdrak-----	85	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 0.08
455991: Typic Argiustolls---	50	Not limited		Not limited	
Urban land-----	30	Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455993:					
Urban land-----	50	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455994:					
Urban land-----	50	Not rated		Not rated	
Orthents-----	40	Not rated		Not rated	
455995:					
Urban land-----	65	Not rated		Not rated	
Orthents-----	30	Not rated		Not rated	
455996:					
Urban land-----	65	Not rated		Not rated	
Orthents-----	25	Not rated		Not rated	
455997:					
Urban land-----	45	Not rated		Not rated	
Sirdrak-----	35	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 0.01
455998:					
Zeni-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Zeni variant-----	35	Very limited Slope	1.00	Very limited Slope	1.00
456000:					
Beaches-----	100	Not rated		Not rated	
456001:					
Water-----	100	Not rated		Not rated	
456330:					
Botella-----	85	Not limited		Not limited	
456331:					
Butano-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456344:					
Coastal beaches-----	85	Very limited Depth to saturated zone Too sandy Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Too sandy Flooding	1.00 1.00 0.40
456364:					
Denison-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and	Value	Mountain bike and	Value
		equestrian trails		off-road vehicle trails	
		Rating class and limiting features		Rating class and limiting features	
456365: Denison-----	85	Not limited		Not limited	
456367: Denison-----	85	Not limited		Not limited	
456368: Denison-----	85	Not limited		Not limited	
456376: Elkhorn-----	85	Not limited		Not limited	
456377: Elkhorn-----	85	Not limited		Not limited	
456379: Elkhorn-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.01
456382: Farallone-----	85	Not limited		Not limited	
456383: Farallone-----	85	Not limited		Not limited	
456384: Farallone-----	85	Not limited		Not limited	
456385: Farallone-----	85	Not limited		Not limited	
456386: Farallone-----	85	Not limited		Not limited	
456387: Farallone-----	85	Not limited		Not limited	
456388: Farallone-----	85	Not limited		Not limited	
456390: Farallone-----	85	Somewhat limited Too sandy	0.67	Somewhat limited Too sandy	0.67
456394: Gazos-----	85	Not limited		Not limited	
456397: Gazos-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.32
456398: Gazos-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456399: Gazos (dark phase)---	60	Not limited		Not limited	
Calera-----	20	Not limited		Not limited	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part II (Trail Management)—Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456400: Gazos (dark phase)---	40	Very limited Slope	1.00	Somewhat limited Slope	0.96
Calera-----	40	Very limited Slope	1.00	Somewhat limited Slope	0.96
456401: Gazos (dark phase)---	40	Very limited Slope	1.00	Very limited Slope	1.00
Calera-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456403: Gazos (dark phase)---	40	Very limited Slope	1.00	Somewhat limited Slope	0.32
Sweeney-----	40	Very limited Slope	1.00	Somewhat limited Slope	0.32
456404: Gazos-----	40	Not limited		Not limited	
Lobitos-----	40	Not limited		Not limited	
456405: Gazos-----	40	Very limited Water erosion	1.00	Very limited Water erosion	1.00
Lobitos-----	40	Very limited Water erosion	1.00	Very limited Water erosion	1.00
456406: Gazos-----	40	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
Lobitos-----	40	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated	
456416: Hugo-----	40	Somewhat limited Slope Dusty	0.92 0.50	Somewhat limited Dusty	0.50
Josephine-----	40	Somewhat limited Slope	0.92	Not limited	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.—Recreation, Part II (Trail Management)—Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456418:					
Hugo-----	40	Very limited Slope Dusty	1.00 0.50	Somewhat limited Slope Dusty	0.96 0.50
Josephine-----	40	Very limited Slope	1.00	Somewhat limited Slope	0.96
456420:					
Hugo-----	40	Very limited Slope Dusty	1.00 0.50	Very limited Slope Dusty	1.00 0.50
Josephine-----	40	Very limited Slope	1.00	Very limited Slope	1.00
456423:					
Hugo-----	40	Not limited		Not limited	
Josephine-----	40	Not limited		Not limited	
456444:					
Lobitos-----	85	Not limited		Not limited	
456445:					
Lobitos-----	85	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
456446:					
Lobitos-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.86
456460:					
Mixed alluvial land-	90	Very limited Too sandy	1.00	Very limited Too sandy	1.00
456464:					
Miramar-----	85	Not limited		Not limited	
456465:					
Miramar-----	85	Somewhat limited Slope	0.02	Not limited	
456466:					
Miramar-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.32
456467:					
Miramar-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.32
456468:					
Miramar-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456469:					
Montara-----	85	Very limited Slope Large stones content	1.00 0.76	Somewhat limited Large stones content Slope	0.76 0.32

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456475: Rough broken land---	50	Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated	
456485: Stabilized dune land	90	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 0.08
456486: Sheridan-----	85	Not limited		Not limited	
456487: Sheridan-----	85	Very limited Slope	1.00	Not limited	
456488: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope	1.00
456494: Soquel-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
456506: Sweeney-----	85	Not limited		Not limited	
456511: Sweeney-----	75	Very limited Slope Large stones content	1.00 0.76	Somewhat limited Slope Large stones content	0.96 0.76
456517: Tierra-----	85	Not limited		Not limited	
456518: Tierra-----	85	Somewhat limited Slope	0.02	Not limited	
456519: Tierra-----	85	Somewhat limited Slope	0.02	Not limited	
456520: Tierra-----	85	Very limited Slope	1.00	Somewhat limited Slope	0.32
459393: Ballard-----	85	Not limited		Not limited	
459395: Barnabe-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459396: Beaches-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and	Value	Mountain bike and	Value
		equestrian trails		off-road vehicle trails	
		Rating class and limiting features		Rating class and limiting features	
459397: Blucher-----	40	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Cole-----	30	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
459398: Bonnydoon-----	85	Somewhat limited Slope	0.92	Not limited	
459399: Bonnydoon-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459402: Centissima-----	50	Somewhat limited Slope	0.92	Not limited	
Barnabe-----	20	Somewhat limited Slope	0.92	Not limited	
459403: Centissima-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope	1.00	Very limited Slope	1.00
459404: Centissima-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope	1.00	Very limited Slope	1.00
459406: Cortina-----	85	Not limited		Not limited	
459407: Cronkhite-----	50	Very limited Water erosion	1.00	Very limited Water erosion	1.00
Barnabe-----	30	Not limited		Not limited	
459408: Cronkhite-----	50	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
Barnabe-----	30	Somewhat limited Slope	0.92	Not limited	
459409: Cronkhite-----	40	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00
Barnabe-----	30	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459410: Cronkhite-----	40	Very limited Slope Water erosion	1.00 1.00	Very limited Slope Water erosion	1.00 1.00
Barnabe-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459411: Dipsea-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope	1.00	Very limited Slope	1.00
459412: Dipsea-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope	1.00	Very limited Slope	1.00
459414: Dune land-----	95	Not rated		Not rated	
459415: Felton variant-----	40	Very limited Water erosion	1.00	Very limited Water erosion	1.00
Soulajule-----	40	Very limited Water erosion	1.00	Very limited Water erosion	1.00
459416: Felton variant-----	40	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
Soulajule-----	40	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
459417: Felton variant-----	50	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00
Soulajule-----	40	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00
459418: Felton variant-----	50	Very limited Slope Water erosion	1.00 1.00	Very limited Slope Water erosion	1.00 1.00
Soulajule-----	40	Very limited Slope Water erosion	1.00 1.00	Very limited Slope Water erosion	1.00 1.00
459419: Fluents-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459420: Gilroy-----	35	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00
Gilroy variant-----	25	Very limited Slope	1.00	Very limited Slope	1.00
Bonnydoon variant---	20	Very limited Slope	1.00	Very limited Slope	1.00
459421: Henneke-----	85	Very limited Slope Large stones content	1.00 0.50	Very limited Slope Large stones content	1.00 0.50
459422: Humaquepts-----	90	Not rated		Not rated	
459423: Hydraquents-----	90	Not rated		Not rated	
459425: Inverness-----	85	Somewhat limited Slope	0.92	Not limited	
459427: Inverness-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459432: Los Osos-----	60	Very limited Water erosion	1.00	Very limited Water erosion	1.00
Bonnydoon-----	25	Not limited		Not limited	
459433: Los Osos-----	60	Very limited Water erosion Slope	1.00 0.92	Very limited Water erosion	1.00
Bonnydoon-----	20	Somewhat limited Slope	0.92	Not limited	
459434: Los Osos-----	60	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00
Bonnydoon-----	20	Very limited Slope	1.00	Very limited Slope	1.00
459436: Los Osos-----	40	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00
Urban land-----	30	Not rated		Not rated	
Bonnydoon-----	20	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459437: Maymen-----	50	Very limited Slope Dusty	1.00 0.50	Very limited Slope Dusty	1.00 0.50
Maymen variant-----	20	Very limited Slope	1.00	Very limited Slope	1.00
459438: Montara-----	85	Somewhat limited Slope	0.92	Not limited	
459439: Novato-----	90	Very limited Depth to saturated zone Too clayey Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Too clayey Flooding	1.00 1.00 0.40
459440: Olompali-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
459441: Olompali-----	85	Very limited Depth to saturated zone Water erosion	1.00 1.00	Very limited Depth to saturated zone Water erosion	1.00 1.00
459442: Olompali-----	85	Very limited Depth to saturated zone Water erosion Slope	1.00 1.00 0.92	Very limited Depth to saturated zone Water erosion	1.00 1.00
459448: Palomarin-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Wittenberg-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459451: Rock outcrop-----	50	Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated	
459452: Rodeo-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
459453: Saurin-----	50	Not limited		Not limited	
Bonnydoon-----	30	Not limited		Not limited	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and		Mountain bike and	
		equestrian trails	Value	off-road vehicle trails	Value
		Rating class and limiting features		Rating class and limiting features	
459454: Saurin-----	40	Somewhat limited Slope	0.92	Not limited	
Bonnydoon-----	30	Somewhat limited Slope	0.92	Not limited	
459455: Saurin-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Bonnydoon-----	40	Very limited Slope	1.00	Very limited Slope	1.00
459456: Saurin-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Bonnydoon-----	40	Very limited Slope	1.00	Very limited Slope	1.00
459463: Sirdrak-----	90	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 0.56
459467: Tamalpais-----	60	Somewhat limited Slope	0.92	Not limited	
Barnabe variant----	30	Somewhat limited Slope	0.92	Not limited	
459468: Tamalpais-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe variant----	30	Very limited Slope	1.00	Very limited Slope	1.00
459469: Tamalpais-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe variant----	40	Very limited Slope	1.00	Very limited Slope	1.00
459471: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	35	Very limited Slope	1.00	Very limited Slope	1.00
459472: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	35	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459473:					
Tocaloma-----	30	Somewhat limited Slope	0.92	Not limited	
McMullin-----	25	Somewhat limited Slope	0.92	Not limited	
Urban land-----	25	Not rated		Not rated	
459474:					
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	20	Very limited Slope	1.00	Very limited Slope	1.00
Urban land-----	20	Not rated		Not rated	
459475:					
Tocaloma-----	35	Somewhat limited Slope	0.92	Not limited	
Saurin-----	30	Somewhat limited Slope	0.92	Not limited	
459476:					
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459477:					
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459481:					
Tomales-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459489:					
Tomales-----	50	Very limited Slope	1.00	Very limited Slope	1.00
Steinbeck-----	30	Very limited Slope	1.00	Very limited Slope	1.00
459490:					
Tomales-----	50	Not limited		Not limited	
Steinbeck-----	30	Not limited		Not limited	
459494:					
Urban land-----	70	Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 7.-Recreation, Part II (Trail Management)-Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459495: Xerorthents-----	100	Not rated		Not rated	
459497: Yorkville-----	85	Not limited		Not limited	
459498: Yorkville-----	85	Somewhat limited Slope	0.92	Not limited	
459499: Yorkville-----	85	Very limited Slope	1.00	Very limited Slope	1.00
459500: Yorkville-----	60	Not limited		Not limited	
Rock outcrop-----	20	Not rated		Not rated	
459501: Yorkville-----	60	Somewhat limited Slope	0.92	Not limited	
Rock outcrop-----	20	Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 8.-Dwellings and Small Commercial Buildings

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
455965: Alambique-----	45	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
McGarvey-----	35	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 1.00 0.03	Very limited Slope Shrink-swell	1.00 1.00
455966: Barnabe-----	45	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Candlestick-----	35	Very limited Slope Depth to hard bedrock	1.00 0.90	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.90
455967: Barnabe-----	40	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
455970: Candlestick-----	45	Very limited Slope Depth to hard bedrock	1.00 0.90	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.90
Barnabe-----	25	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
455971: Candlestick-----	40	Very limited Slope Depth to hard bedrock	1.00 0.90	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.90

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455971: Kron-----	25	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Buriburi-----	20	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.46
455972: Candlestick variant-	85	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Slope	0.50 0.04	Very limited Slope Shrink-swell	1.00 0.50
455973: Candlestick variant-	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
455974: Fagan-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 0.50
455976: Los Gatos-----	85	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.06	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.06
455977: Maymen-----	85	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
455980: Obispo-----	85	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.16	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.16	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50
455981: Obispo-----	85	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50
455982: Orthents-----	85	Not rated		Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455984:							
Orthents-----	55	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455985:							
Orthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455986:							
Pits-----	50	Not rated		Not rated		Not rated	
Dumps-----	50	Not rated		Not rated		Not rated	
455988:							
Rock outcrop-----	45	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455989:							
Scarper-----	40	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.84	Very limited Slope	1.00
Miramar-----	35	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.54 0.50	Very limited Slope Shrink-swell	1.00 0.50
455990:							
Sirdrak-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
455991:							
Typic Argiustolls---	50	Somewhat limited Shrink-swell Slope	0.50 0.16	Somewhat limited Shrink-swell Slope	0.50 0.16	Very limited Slope Shrink-swell	1.00 0.50
Urban land-----	30	Not rated		Not rated		Not rated	
455992:							
Urban land-----	85	Not rated		Not rated		Not rated	
455993:							
Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455994:							
Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	40	Not rated		Not rated		Not rated	
455995:							
Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	30	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455996: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	25	Not rated		Not rated		Not rated	
455997: Urban land-----	45	Not rated		Not rated		Not rated	
Sirdrak-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
455998: Zeni-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Zeni variant-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
				Shrink-swell	0.50		
456000: Beaches-----	100	Not rated		Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated		Not rated	
456330: Botella-----	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Very limited Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
456331: Butano-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06
456344: Coastal beaches-----	85	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
456364: Denison-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
456365: Denison-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
456367: Denison-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456368: Denison-----	85	Very limited Shrink-swell Slope	1.00 0.37	Very limited Shrink-swell Slope	1.00 0.37	Very limited Shrink-swell Slope	1.00 1.00
456376: Elkhorn-----	85	Not limited		Somewhat limited Shrink-swell	0.50	Not limited	
456377: Elkhorn-----	85	Not limited		Somewhat limited Shrink-swell	0.50	Very limited Slope	1.00
456379: Elkhorn-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
456382: Farallone-----	85	Not limited		Not limited		Not limited	
456383: Farallone-----	85	Not limited		Not limited		Not limited	
456384: Farallone-----	85	Not limited		Not limited		Not limited	
456385: Farallone-----	85	Not limited		Not limited		Not limited	
456386: Farallone-----	85	Not limited		Not limited		Somewhat limited Slope	0.88
456387: Farallone-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
456388: Farallone-----	85	Not limited		Not limited		Not limited	
456390: Farallone-----	85	Not limited		Not limited		Very limited Slope	1.00
456394: Gazos-----	85	Somewhat limited Depth to hard bedrock Shrink-swell Slope	0.84 0.50 0.16	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.16	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.84 0.50
456397: Gazos-----	85	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.84 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.84 0.50

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456398: Gazos-----	85	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.84 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.84 0.50
456399: Gazos (dark phase)--	60	Somewhat limited Depth to hard bedrock Slope Shrink-swell	0.90 0.84 0.50	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 0.84 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50
Calera-----	20	Somewhat limited Slope Shrink-swell Depth to hard bedrock	0.63 0.50 0.46	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.63 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46
456400: Gazos (dark phase)--	40	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50
Calera-----	40	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46
456401: Gazos (dark phase)--	40	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50
Calera-----	40	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46
456403: Gazos (dark phase)--	40	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50
Sweeney-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456404: Gazos-----	40	Somewhat limited Depth to hard bedrock Shrink-swell	0.64 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Depth to hard bedrock Shrink-swell Slope	0.64 0.50 0.50
Lobitos-----	40	Somewhat limited Depth to hard bedrock	0.01	Very limited Depth to hard bedrock	1.00	Somewhat limited Slope Depth to hard bedrock	0.50 0.01
456405: Gazos-----	40	Somewhat limited Depth to hard bedrock Shrink-swell Slope	0.90 0.50 0.37	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.37	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50
Lobitos-----	40	Somewhat limited Shrink-swell Slope Depth to hard bedrock	0.50 0.37 0.15	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.37	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.15
456406: Gazos-----	40	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.90 0.50
Lobitos-----	40	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.15	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.15
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated		Not rated	
456416: Hugo-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Josephine-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
456418: Hugo-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456418: Josephine-----	40	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50
456420: Hugo-----	40	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Josephine-----	40	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50
456423: Hugo-----	40	Not limited		Not limited		Very limited Slope	 1.00
Josephine-----	40	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell	 0.50	Very limited Slope Shrink-swell	 1.00 0.50
456444: Lobitos-----	85	Somewhat limited Slope Shrink-swell Depth to hard bedrock	 0.63 0.50 0.15	Very limited Depth to hard bedrock Slope Shrink-swell	 1.00 0.63 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15
456445: Lobitos-----	85	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15	Very limited Slope Depth to hard bedrock Shrink-swell	 1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15
456446: Lobitos-----	85	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15	Very limited Slope Depth to hard bedrock Shrink-swell	 1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15
456460: Mixed alluvial land-	90	Very limited Flooding	 1.00	Very limited Flooding	 1.00	Very limited Flooding	 1.00
456464: Miramar-----	85	Somewhat limited Shrink-swell Slope	 0.50 0.16	Somewhat limited Shrink-swell Slope Depth to soft bedrock	 0.50 0.16 0.03	Very limited Slope Shrink-swell	 1.00 0.50
456465: Miramar-----	85	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	 1.00 0.50 0.03	Very limited Slope Shrink-swell	 1.00 0.50

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Table 8.-Dwellings and Small Commercial Buildings-Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456466: Miramar-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.03	Very limited Slope Shrink-swell	1.00 0.50
456467: Miramar-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
456468: Miramar-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.03	Very limited Slope Shrink-swell	1.00 0.50
456469: Montara-----	85	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50
456475: Rough broken land---	50	Not rated		Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated		Not rated	
456485: Stabilized dune land	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
456486: Sheridan-----	85	Somewhat limited Slope	0.84	Somewhat limited Slope Depth to soft bedrock	0.84 0.01	Very limited Slope	1.00
456487: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
456488: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
456494: Soquel-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.12

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456506: Sweeney-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
456511: Sweeney-----	75	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
456517: Tierra-----	85	Very limited Shrink-swell	1.00	Somewhat limited Shrink-swell	0.50	Very limited Shrink-swell Slope	1.00 1.00
456518: Tierra-----	85	Very limited Shrink-swell Slope	1.00 1.00	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 1.00
456519: Tierra-----	85	Very limited Shrink-swell Slope	1.00 1.00	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 1.00
456520: Tierra-----	85	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 1.00
459393: Ballard-----	85	Not limited		Not limited		Somewhat limited Slope	0.50
459395: Barnabe-----	85	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459396: Beaches-----	100	Not rated		Not rated		Not rated	
459397: Blucher-----	40	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50
Cole-----	30	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
459398: Bonnydoon-----	85	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459399: Bonnydoon-----	85	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
459402: Centissima-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
Barnabe-----	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459403: Centissima-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
Barnabe-----	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459404: Centissima-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
Barnabe-----	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459406: Cortina-----	85	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
459407: Cronkhite-----	50	Very limited Shrink-swell Slope	1.00 0.63	Very limited Shrink-swell Slope	1.00 0.63	Very limited Slope Shrink-swell	1.00 1.00
Barnabe-----	30	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Slope Depth to hard bedrock	1.00 1.00
459408: Cronkhite-----	50	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459408: Barnabe-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459409: Cronkhite-----	40	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
Barnabe-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459410: Cronkhite-----	40	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
Barnabe-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459411: Dipsea-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459412: Dipsea-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Barnabe-----	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459414: Dune land-----	95	Not rated		Not rated		Not rated	
459415: Felton variant-----	40	Somewhat limited Slope	0.63	Very limited Shrink-swell Slope	1.00 0.63	Very limited Slope	1.00
Soulajule-----	40	Somewhat limited Slope Shrink-swell	0.63 0.50	Somewhat limited Depth to soft bedrock Slope Shrink-swell	0.64 0.63 0.50	Very limited Slope Shrink-swell	1.00 0.50

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459416: Felton variant-----	40	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope	1.00
Soulajule-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
459417: Felton variant-----	50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope	1.00
Soulajule-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
459418: Felton variant-----	50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope	1.00
Soulajule-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
459419: Fluvents-----	100	Not limited		Not limited		Not limited	
459420: Gilroy-----	35	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.46
Gilroy variant-----	25	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.84 0.50	Very limited Slope Shrink-swell	1.00 0.50
Bonnydoon variant---	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459421: Henneke-----	85	Very limited Slope Depth to hard bedrock Large stones Shrink-swell	1.00 1.00 0.79 0.50	Very limited Slope Depth to hard bedrock Large stones Shrink-swell	1.00 1.00 0.79 0.50	Very limited Slope Depth to hard bedrock Large stones Shrink-swell	1.00 1.00 0.79 0.50

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459422: Humaquepts-----	90	Very limited Depth to saturated zone Organic matter content	1.00 1.00	Very limited Depth to saturated zone Organic matter content	1.00 1.00	Very limited Depth to saturated zone Organic matter content	1.00 1.00
459423: Hydraquepts-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
459425: Inverness-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 0.50
459427: Inverness-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 0.50
459432: Los Osos-----	60	Very limited Shrink-swell Slope	1.00 0.16	Very limited Shrink-swell Slope Depth to soft bedrock	1.00 0.16 0.01	Very limited Shrink-swell Slope	1.00 1.00
Bonnydoon-----	25	Somewhat limited Depth to soft bedrock Slope	0.50 0.16	Very limited Depth to soft bedrock Slope	1.00 0.16	Very limited Depth to soft bedrock Slope	1.00 1.00
459433: Los Osos-----	60	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Shrink-swell	1.00 1.00
Bonnydoon-----	20	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
459434: Los Osos-----	60	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 1.00 0.46	Very limited Slope Shrink-swell	1.00 1.00
Bonnydoon-----	20	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459436: Los Osos-----	40	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 1.00 0.46	Very limited Slope Shrink-swell	1.00 1.00
Urban land-----	30	Not rated		Not rated		Not rated	
Bonnydoon-----	20	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
459437: Maymen-----	50	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Maymen variant-----	20	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 1.00 0.03	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 1.00 1.00	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 1.00 0.03
459438: Montara-----	85	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 1.00 0.50
459439: Novato-----	90	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
459440: Olmopali-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 1.00 0.50
459441: Olmopali-----	85	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 1.00 0.63	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 1.00 0.63	Very limited Slope Depth to saturated zone Shrink-swell	1.00 1.00 1.00
459442: Olmopali-----	85	Very limited Slope Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Shrink-swell	1.00 1.00 1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459448: Palomarin-----	40	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock	1.00 0.99	Very limited Slope	1.00
Wittenberg-----	30	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock	1.00 0.42	Very limited Slope	1.00
459451: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated		Not rated	
459452: Rodeo-----	90	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 1.00
459453: Saurin-----	50	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Shrink-swell Depth to soft bedrock Slope	0.50 0.20 0.04	Very limited Slope Shrink-swell	1.00 0.50
Bonnydoon-----	30	Somewhat limited Depth to soft bedrock Slope	0.50 0.04	Very limited Depth to soft bedrock Slope	1.00 0.04	Very limited Depth to soft bedrock Slope	1.00 1.00
459454: Saurin-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
Bonnydoon-----	30	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
459455: Saurin-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
Bonnydoon-----	40	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00

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Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459456: Saurin-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
Bonnydoon-----	40	Very limited Slope Depth to soft bedrock	1.00 0.50	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00
459463: Sirdrak-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
459467: Tamalpais-----	60	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope	1.00
Barnabe variant-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459468: Tamalpais-----	50	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope	1.00
Barnabe variant-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459469: Tamalpais-----	50	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope	1.00
Barnabe variant-----	40	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459471: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	35	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459472:							
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	35	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
459473:							
Tocaloma-----	30	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	25	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Urban land-----	25	Not rated		Not rated		Not rated	
459474:							
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
McMullin-----	20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Urban land-----	20	Not rated		Not rated		Not rated	
459475:							
Tocaloma-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
459476:							
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50
459477:							
Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	1.00 0.50 0.20	Very limited Slope Shrink-swell	1.00 0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 8.—Dwellings and Small Commercial Buildings—Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459481: Tomales-----	85	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
459489: Tomales-----	50	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
Steinbeck-----	30	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
459490: Tomales-----	50	Very limited Shrink-swell Slope	1.00 0.16	Very limited Shrink-swell Slope	1.00 0.16	Very limited Shrink-swell Slope	1.00 1.00
Steinbeck-----	30	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
459494: Urban land-----	70	Not rated		Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated		Not rated	
459497: Yorkville-----	85	Very limited Shrink-swell Slope	1.00 0.63	Very limited Shrink-swell Slope	1.00 0.63	Very limited Slope Shrink-swell	1.00 1.00
459498: Yorkville-----	85	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
459499: Yorkville-----	85	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
459500: Yorkville-----	60	Very limited Shrink-swell Slope	1.00 0.63	Very limited Shrink-swell Slope	1.00 0.63	Very limited Slope Shrink-swell	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459501: Yorkville-----	60	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	

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Table 8.-Dwellings and Small Commercial Buildings-Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459502: Water-----	100	Not rated		Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
				Depth to soft bedrock	0.46	Depth to bedrock	0.46
				Unstable excavation walls	0.10		
455965: Alambique-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
				Unstable excavation walls	1.00	Gravel	0.50
				Depth to soft bedrock	0.46	Depth to bedrock	0.46
						Droughty	0.23
McGarvey-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Shrink-swell	1.00	Unstable	0.10	Depth to bedrock	0.03
		Low strength	1.00	excavation walls			
				Depth to soft bedrock	0.03		
455966: Barnabe-----	45	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Unstable	0.50	Gravel	1.00
				excavation walls		Droughty	1.00
Candlestick-----	35	Very limited Slope	1.00	Very limited Depth to hard bedrock	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Depth to bedrock	0.90
				Unstable	0.10	Droughty	0.07
				excavation walls			
455967: Barnabe-----	40	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Unstable	0.50	Gravel	1.00
				excavation walls		Droughty	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
455970: Candlestick-----	45	Very limited Slope	1.00	Very limited Depth to hard bedrock	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Depth to bedrock	0.90
				Unstable	0.10	Droughty	0.07
				excavation walls			

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455970: Barnabe-----	25	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
455971: Candlestick-----	40	Very limited Slope Depth to hard bedrock	1.00 0.90	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.90 0.07
Kron-----	25	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty	1.00 1.00 1.00
Buriburi-----	20	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 1.00	Very limited Slope Gravel Depth to bedrock Droughty	1.00 0.50 0.46 0.07
455972: Candlestick variant-	85	Very limited Low strength Shrink-swell Slope	1.00 0.50 0.04	Somewhat limited Unstable excavation walls Slope	0.10 0.04	Somewhat limited Slope	0.04
455973: Candlestick variant	85	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
455974: Fagan-----	85	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Too clayey Unstable excavation walls	1.00 0.50 0.10	Very limited Slope	1.00
455976: Los Gatos-----	85	Very limited Slope Shrink-swell Low strength Depth to hard bedrock	1.00 0.50 0.22 0.06	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock	1.00 0.06

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455977: Maymen-----	85	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.41
455980: Obispo-----	85	Very limited Depth to hard bedrock Low strength Shrink-swell Slope	1.00 1.00 0.50 0.16	Very limited Depth to hard bedrock Unstable excavation walls Slope	1.00 1.00 0.50 0.16	Very limited Depth to bedrock Droughty Too clayey Slope	1.00 1.00 1.00 0.16
455981: Obispo-----	85	Very limited Depth to hard bedrock Slope Low strength Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Too clayey	1.00
455982: Orthents-----	85	Not rated		Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455986: Pits-----	50	Not rated		Not rated		Not rated	
Dumps-----	50	Not rated		Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455989: Scarper-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 1.00 1.00 0.84	Very limited Slope Droughty Depth to bedrock Gravel	1.00 1.00 0.84 0.18

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455989: Miramar-----	35	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 1.00 0.54 0.10	Very limited Slope Depth to bedrock	1.00 0.54
455990: Sirdrak-----	85	Very limited Slope	1.00	Very limited Unstable excavation walls Slope	1.00 1.00	Very limited Slope Droughty Too sandy	1.00 0.92 0.50
455991: Typic Argiustolls---	50	Somewhat limited Shrink-swell Low strength Slope	0.50 0.22 0.16	Somewhat limited Slope Unstable excavation walls	0.16 0.10	Somewhat limited Slope	0.16
Urban land-----	30	Not rated		Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated		Not rated	
455993: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455994: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	40	Not rated		Not rated		Not rated	
455995: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	30	Not rated		Not rated		Not rated	
455996: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	25	Not rated		Not rated		Not rated	
455997: Urban land-----	45	Not rated		Not rated		Not rated	
Sirdrak-----	35	Very limited Slope	1.00	Very limited Unstable excavation walls Slope	1.00 1.00	Very limited Slope Droughty Too sandy	1.00 0.92 0.50
455998: Zeni-----	40	Very limited Slope Depth to hard bedrock Shrink-swell	1.00 0.79 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Depth to bedrock Gravel Droughty	1.00 0.80 0.41 0.18

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455998: Zeni variant-----	35	Very limited Slope Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Gravel	1.00 0.14
456000: Beaches-----	100	Not rated		Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated		Not rated	
456330: Botella-----	85	Somewhat limited Shrink-swell Slope	0.50 0.37	Somewhat limited Slope Unstable excavation walls	0.37 0.10	Somewhat limited Slope	0.37
456331: Butano-----	85	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Slope Gravel Depth to bedrock	1.00 0.41 0.06
456344: Coastal beaches-----	85	Very limited Depth to saturated zone Flooding	1.00 1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Flooding	1.00 1.00 1.00 0.80	Very limited Flooding Depth to saturated zone Droughty Salinity	1.00 1.00 1.00 1.00
456364: Denison-----	85	Very limited Depth to saturated zone Shrink-swell Low strength	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Too clayey Unstable excavation walls	1.00 1.00 0.50 0.10	Very limited Depth to saturated zone	1.00
456365: Denison-----	85	Very limited Shrink-swell Low strength	1.00 1.00	Somewhat limited Too clayey Unstable excavation walls	0.50 0.10	Not limited	
456367: Denison-----	85	Very limited Shrink-swell Low strength	1.00 1.00	Somewhat limited Too clayey Unstable excavation walls	0.50 0.10	Not limited	
456368: Denison-----	85	Very limited Shrink-swell Low strength Slope	1.00 1.00 0.37	Somewhat limited Too clayey Slope Unstable excavation walls	0.50 0.37 0.10	Somewhat limited Slope	0.37

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456376: Elkhorn-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456377: Elkhorn-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456379: Elkhorn-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
456382: Farallone-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456383: Farallone-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456384: Farallone-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456385: Farallone-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456386: Farallone-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Not limited	
456387: Farallone-----	85	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
456388: Farallone-----	85	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.01
456390: Farallone-----	85	Not limited		Somewhat limited Unstable excavation walls	0.10	Somewhat limited Too sandy Droughty	0.50 0.03

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456394: Gazos-----	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to bedrock	0.84
		Shrink-swell	0.50	Slope	0.16	Slope	0.16
		Low strength	0.22	Unstable	0.10		
		Slope	0.16	excavation walls			
456397: Gazos-----	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.84	Slope	1.00	Depth to bedrock	0.84
		Shrink-swell	0.50	Unstable	0.10		
		Low strength	0.22	excavation walls			
456398: Gazos-----	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.84	Slope	1.00	Depth to bedrock	0.84
		Shrink-swell	0.50	Unstable	0.10		
		Low strength	0.22	excavation walls			
456399: Gazos (dark phase)--	60	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to bedrock	0.90
		Slope	0.84	Slope	0.84	Slope	0.84
		Shrink-swell	0.50	Unstable	0.10	Droughty	0.01
		Low strength	0.22	excavation walls			
Calera-----	20	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Depth to bedrock	0.46
		Shrink-swell	0.50	Unstable	0.10		
		Depth to hard bedrock	0.46	excavation walls			
456400: Gazos (dark phase)--	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Depth to bedrock	0.90
		Shrink-swell	0.50	Unstable	0.10	Droughty	0.01
		Low strength	0.22	excavation walls			
Calera-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.46
		Shrink-swell	0.50	Unstable	0.10		
		Depth to hard bedrock	0.46	excavation walls			
456401: Gazos (dark phase)--	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Depth to bedrock	0.90
		Shrink-swell	0.50	Unstable	0.10	Droughty	0.01
		Low strength	0.22	excavation walls			

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456401: Calera-----	40	Very limited Slope Low strength Shrink-swell Depth to hard bedrock	1.00 1.00 0.50 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock	1.00 0.46
456403: Gazos (dark phase)--	40	Very limited Slope Depth to hard bedrock Shrink-swell Low strength	1.00 0.90 0.50 0.22	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.90 0.01
Sweeney-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope	1.00
456404: Gazos-----	40	Somewhat limited Depth to hard bedrock Shrink-swell Low strength	0.64 0.50 0.50 0.22	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00 0.10	Somewhat limited Depth to bedrock	0.65
Lobitos-----	40	Somewhat limited Depth to hard bedrock	0.01	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00 0.10	Somewhat limited Depth to bedrock	0.01
456405: Gazos-----	40	Somewhat limited Depth to hard bedrock Shrink-swell Slope Low strength	0.90 0.50 0.37 0.22	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.37 0.10	Somewhat limited Depth to bedrock Slope Droughty	0.90 0.37 0.01
Lobitos-----	40	Somewhat limited Shrink-swell Slope Depth to hard bedrock	0.50 0.37 0.15	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.37 0.10	Somewhat limited Slope Depth to bedrock	0.37 0.16
456406: Gazos-----	40	Very limited Slope Depth to hard bedrock Shrink-swell Low strength	1.00 0.90 0.50 0.22	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.90 0.01

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456406: Lobitos-----	40	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.15	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope Depth to bedrock	1.00 0.16
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated		Not rated	
456416: Hugo-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
Josephine-----	40	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope	1.00
456418: Hugo-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
Josephine-----	40	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope	1.00
456420: Hugo-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
Josephine-----	40	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope	1.00
456423: Hugo-----	40	Not limited		Very limited Unstable excavation walls	1.00	Not limited	
Josephine-----	40	Somewhat limited Shrink-swell Low strength	0.50 0.22	Somewhat limited Unstable excavation walls	0.10	Not limited	

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456444: Lobitos-----	85	Somewhat limited Slope Shrink-swell Depth to hard bedrock	 0.63 0.50 0.15	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00 0.63 0.10	Somewhat limited Slope Depth to bedrock	 0.63 0.16
456445: Lobitos-----	85	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00 1.00 0.10	Very limited Slope Depth to bedrock	 1.00 0.16
456446: Lobitos-----	85	Very limited Slope Shrink-swell Depth to hard bedrock	 1.00 0.50 0.15	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00 1.00 0.10	Very limited Slope Depth to bedrock	 1.00 0.16
456460: Mixed alluvial land-	90	Very limited Flooding	 1.00	Very limited Unstable excavation walls Flooding	 1.00 0.60	Somewhat limited Flooding Too sandy	 0.60 0.50
456464: Miramar-----	85	Somewhat limited Shrink-swell Slope	 0.50 0.16	Somewhat limited Slope Unstable excavation walls Depth to soft bedrock	 0.16 0.10 0.03	Somewhat limited Slope Depth to bedrock	 0.16 0.03
456465: Miramar-----	85	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock	 1.00 0.10 0.03	Very limited Slope Depth to bedrock	 1.00 0.03
456466: Miramar-----	85	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock	 1.00 0.10 0.03	Very limited Slope Depth to bedrock	 1.00 0.03
456467: Miramar-----	85	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	 1.00 0.20 0.10	Very limited Slope Depth to bedrock	 1.00 0.20

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456468: Miramar-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 0.10 0.03	Very limited Slope Depth to bedrock	1.00 0.03
456469: Montara-----	85	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Large stones Gravel	1.00 1.00 1.00 0.54 0.11
456475: Rough broken land---	50	Not rated		Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated		Not rated	
456485: Stabilized dune land	90	Very limited Slope	1.00	Very limited Unstable excavation walls Slope	1.00 1.00	Very limited Droughty Slope	1.00 1.00
456486: Sheridan-----	85	Somewhat limited Slope	0.84	Very limited Unstable excavation walls Slope Depth to soft bedrock	1.00 0.84 0.01	Somewhat limited Slope Depth to bedrock	0.84 0.01
456487: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.01
456488: Sheridan-----	85	Very limited Slope	1.00	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.01
456494: Soquel-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Depth to saturated zone	1.00

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456506: Sweeney-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope Unstable excavation walls	0.37 0.10	Somewhat limited Slope	0.37
456511: Sweeney-----	75	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Large stones	1.00 0.11
456517: Tierra-----	85	Very limited Shrink-swell Low strength	1.00 1.00	Somewhat limited Unstable excavation walls Too clayey	0.10 0.03	Not limited	
456518: Tierra-----	85	Very limited Shrink-swell Slope Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
456519: Tierra-----	85	Very limited Shrink-swell Slope Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
456520: Tierra-----	85	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
459393: Ballard-----	85	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Gravel	0.32
459395: Barnabe-----	85	Very limited Depth to hard bedrock Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459396: Beaches-----	100	Not rated		Not rated		Not rated	
459397: Blucher-----	40	Very limited Depth to saturated zone Flooding Low strength Shrink-swell	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Flooding Unstable excavation walls	1.00 0.60 0.10	Very limited Depth to saturated zone Flooding	1.00 0.60

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459397: Cole-----	30	Very limited Depth to saturated zone Shrink-swell Flooding Low strength	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Unstable excavation walls	1.00 1.00 0.60 0.10	Very limited Depth to saturated zone Flooding	1.00 0.60
459398: Bonnydoon-----	85	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459399: Bonnydoon-----	85	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459402: Centissima-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 1.00 0.20	Very limited Slope Depth to bedrock	1.00 0.20
Barnabe-----	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459403: Centissima-----	50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 1.00 1.00 0.20	Very limited Slope Depth to bedrock	1.00 0.20
Barnabe-----	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459404: Centissima-----	40	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock	1.00 1.00 1.00 0.20	Very limited Slope Depth to bedrock	1.00 0.20

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459404: Barnabe-----	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459406: Cortina-----	85	Somewhat limited Flooding	0.40	Very limited Unstable excavation walls	1.00	Somewhat limited Droughty Gravel	0.52 0.36
459407: Cronkhite-----	50	Very limited Shrink-swell Low strength Slope	1.00 1.00 0.63	Somewhat limited Slope Unstable excavation walls	0.63 0.10	Somewhat limited Slope	0.63
Barnabe-----	30	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 0.63 0.10	Very limited Depth to bedrock Gravel Droughty Slope	1.00 1.00 1.00 0.63
459408: Cronkhite-----	50	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
Barnabe-----	30	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459409: Cronkhite-----	40	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
Barnabe-----	30	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459410: Cronkhite-----	40	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459410: Barnabe-----	30	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459411: Dipsea-----	50	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Gravel Droughty	1.00 1.00 0.03
Barnabe-----	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459412: Dipsea-----	50	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Gravel Droughty	1.00 1.00 0.03
Barnabe-----	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Gravel Droughty	1.00 1.00 1.00 1.00
459414: Dune land-----	95	Not rated		Not rated		Not rated	
459415: Felton variant-----	40	Somewhat limited Slope	0.63	Somewhat limited Slope Too clayey Unstable excavation walls	0.63 0.12 0.10	Somewhat limited Slope	0.63
Soulajule-----	40	Very limited Low strength Slope Shirnk-swell	1.00 0.63 0.50	Very limited Unstable excavation walls Depth to soft bedrock Slope Too clayey	1.00 0.64 0.63 0.03	Somewhat limited Depth to bedrock Slope	0.65 0.63
459416: Felton variant-----	40	Very limited Slope	1.00	Very limited Slope Too clayey Unstable excavation walls	1.00 0.12 0.10	Very limited Slope	1.00

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459416: Soulajule-----	40	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock Too clayey	1.00 1.00 0.64 0.03	Very limited Slope Depth to bedrock	1.00 0.65
459417: Felton variant-----	50	Very limited Slope	1.00	Very limited Slope Too clayey Unstable excavation walls	1.00 0.12 0.10	Very limited Slope	1.00
Soulajule-----	40	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock Too clayey	1.00 1.00 0.64 0.03	Very limited Slope Depth to bedrock	1.00 0.65
459418: Felton variant-----	50	Very limited Slope	1.00	Very limited Slope Too clayey Unstable excavation walls	1.00 0.12 0.10	Very limited Slope	1.00
Soulajule-----	40	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Unstable excavation walls Depth to soft bedrock Too clayey	1.00 1.00 0.64 0.03	Very limited Slope Depth to bedrock	1.00 0.65
459419: Fluvents-----	100	Not limited		Very limited Unstable excavation walls	1.00	Not rated	
459420: Gilroy-----	35	Very limited Slope Low strength Shrink-swell Depth to hard bedrock	1.00 1.00 0.50 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.46
Gilroy variant-----	25	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Unstable excavation walls Depth to hard bedrock	1.00 1.00 1.00 0.84	Very limited Slope	1.00

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459420: Bonnydoon variant---	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.57
459421: Henneke-----	85	Very limited Depth to hard bedrock Slope Large stones Shrink-swell	1.00 1.00 0.79 0.50	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	1.00 1.00 1.00 0.79 0.10	Very limited Depth to bedrock Slope Large stones Droughty Gravel	1.00 1.00 1.00 1.00 0.08
459422: Humaquepts-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Not rated	
459423: Hydraquents-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.12	Not rated	
459425: Inverness-----	85	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
459427: Inverness-----	85	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
459432: Los Osos-----	60	Very limited Shrink-swell Low strength Slope	1.00 1.00 0.16	Somewhat limited Slope Unstable excavation walls Too clayey Depth to soft bedrock	0.16 0.10 0.03 0.01	Somewhat limited Slope Depth to bedrock	0.16 0.01
Bonnydoon-----	25	Somewhat limited Depth to soft bedrock Slope	1.00 0.16	Very limited Depth to soft bedrock Unstable excavation walls Slope	1.00 0.50 0.16	Very limited Depth to bedrock Droughty Gravel Slope	1.00 1.00 0.25 0.16

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459433:							
Los Osos-----	60	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey Depth to soft bedrock	1.00 1.00 0.10 0.03 0.01	Very limited Slope Depth to bedrock	1.00 0.01
Bonnydoon-----	20	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459434:							
Los Osos-----	60	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Depth to soft bedrock Unstable excavation walls Too clayey	1.00 1.00 0.46 0.10 0.03	Very limited Slope Depth to bedrock	1.00 0.46
Bonnydoon-----	20	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459436:							
Los Osos-----	40	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Depth to soft bedrock Unstable excavation walls Too clayey	1.00 1.00 0.46 0.10 0.03	Very limited Slope Depth to bedrock	1.00 0.46
Urban land-----	30	Not rated		Not rated		Not rated	
Bonnydoon-----	20	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459437:							
Maymen-----	50	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.41

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459437: Maymen variant-----	20	Very limited Slope Shrink-swell Low strength Depth to hard bedrock	1.00 1.00 1.00 0.03	Very limited Depth to hard bedrock Slope Unstable excavation walls Too clayey	1.00 1.00 1.00 1.00 0.50	Very limited Slope Gravel Depth to bedrock	1.00 0.41 0.03
459438: Montara-----	85	Very limited Depth to hard bedrock Slope Low strength Shrink-swell	1.00 1.00 1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.97
459439: Novato-----	90	Very limited Depth to saturated zone Shrink-swell Flooding Low strength	1.00 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Too clayey Unstable excavation walls	1.00 1.00 0.80 0.28 0.10	Very limited Flooding Salinity Depth to saturated zone Too clayey Droughty	1.00 1.00 1.00 1.00 1.00 0.98
459440: Olompali-----	85	Very limited Depth to saturated zone Shrink-swell Low strength	1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Too clayey	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone	1.00
459441: Olompali-----	85	Very limited Depth to saturated zone Shrink-swell Low strength Slope	1.00 1.00 1.00 1.00 0.63	Very limited Depth to saturated zone Unstable excavation walls Slope Too clayey	1.00 1.00 1.00 1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63
459442: Olompali-----	85	Very limited Slope Depth to saturated zone Shrink-swell Low strength	1.00 1.00 1.00 1.00	Very limited Slope Depth to saturated zone Unstable excavation walls Too clayey	1.00 1.00 1.00 1.00 0.50	Very limited Slope Depth to saturated zone	1.00 1.00
459448: Palomarin-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls Depth to hard bedrock	1.00 1.00 0.99	Very limited Slope	1.00

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459448: Wittenberg-----	30	Very limited Slope	1.00	Very limited Slope Unstable excavation walls Depth to hard bedrock	1.00 1.00 0.42	Very limited Slope Gravel Droughty	1.00 1.00 0.34
459451: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated		Not rated	
459452: Rodeo-----	90	Very limited Depth to saturated zone Shrink-swell Low strength Slope	1.00 1.00 1.00 0.04	Very limited Depth to saturated zone Unstable excavation walls Slope Too clayey	1.00 0.10 0.04 0.03	Very limited Depth to saturated zone Slope	1.00 0.04
459453: Saurin-----	50	Somewhat limited Low strength Shrink-swell Slope	0.78 0.50 0.04	Somewhat limited Depth to soft bedrock Unstable excavation walls Slope	0.20 0.10 0.04	Somewhat limited Depth to bedrock Slope	0.20 0.04
Bonnydoon-----	30	Somewhat limited Depth to soft bedrock Slope	1.00 0.04	Very limited Depth to soft bedrock Unstable excavation walls Slope	1.00 0.50 0.04	Very limited Depth to bedrock Droughty Gravel Slope	1.00 1.00 0.25 0.04
459454: Saurin-----	40	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 0.20 0.10	Very limited Slope Depth to bedrock	1.00 0.20
Bonnydoon-----	30	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459455: Saurin-----	50	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 0.20 0.10	Very limited Slope Depth to bedrock	1.00 0.20

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459455: Bonnydoon-----	40	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459456: Saurin-----	50	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 0.20 0.10	Very limited Slope Depth to bedrock	1.00 0.20
Bonnydoon-----	40	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Depth to soft bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.25
459463: Sirdrak-----	90	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Too sandy Droughty	1.00 0.50 0.42
459467: Tamalpais-----	60	Very limited Slope	1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 1.00	Very limited Slope Gravel Droughty	1.00 1.00 0.04
Barnabe variant----	30	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel Large stones	1.00 1.00 1.00 1.00 0.03
459468: Tamalpais-----	50	Very limited Slope	1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 1.00	Very limited Slope Gravel Droughty	1.00 1.00 0.04
Barnabe variant----	30	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel Large stones	1.00 1.00 1.00 1.00 0.03

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459469: Tamalpais-----	50	Very limited Slope	1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 1.00	Very limited Slope Gravel Droughty	1.00 1.00 0.04
Barnabe variant----	40	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty Gravel Large stones	1.00 1.00 1.00 1.00 0.03
459471: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
McMullin-----	35	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Large stones	1.00 1.00 0.67 0.20
459472: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
McMullin-----	35	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Large stones	1.00 1.00 0.67 0.20
459473: Tocaloma-----	30	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
McMullin-----	25	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Large stones	1.00 1.00 0.67 0.20
Urban land-----	25	Not rated		Not rated		Not rated	
459474: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459474: McMullin-----	20	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Large stones	1.00 1.00 0.67 0.20
Urban land-----	20	Not rated		Not rated		Not rated	
459475: Tocaloma-----	35	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 1.00 0.20 0.10	Very limited Slope Depth to bedrock	1.00 0.20
459476: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 1.00 0.20 0.10	Very limited Slope Depth to bedrock	1.00 0.20
459477: Tocaloma-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope	1.00
Saurin-----	30	Very limited Slope Low strength Shrink-swell	1.00 0.78 0.50	Very limited Slope Depth to soft bedrock Unstable excavation walls	1.00 1.00 0.20 0.10	Very limited Slope Depth to bedrock	1.00 0.20
459481: Tomales-----	85	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 1.00 0.10 0.03	Very limited Slope	1.00
459489: Tomales-----	50	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 1.00 0.10 0.03	Very limited Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459489: Steinbeck-----	30	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 0.10	Very limited Slope	1.00
459490: Tomales-----	50	Very limited Shrink-swell Low strength Slope	1.00 1.00 0.16	Somewhat limited Slope Unstable excavation walls Too clayey	0.16 0.10 0.03	Somewhat limited Slope	0.16
Steinbeck-----	30	Somewhat limited Slope	0.16	Somewhat limited Slope Unstable excavation walls	0.16 0.10	Somewhat limited Slope	0.16
459494: Urban land-----	70	Not rated		Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated		Not rated	
459497: Yorkville-----	85	Very limited Shrink-swell Low strength Slope	1.00 1.00 0.63	Somewhat limited Slope Unstable excavation walls Too clayey	0.63 0.10 0.03	Somewhat limited Slope	0.63
459498: Yorkville-----	85	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 0.10 0.10 0.03	Very limited Slope	1.00
459499: Yorkville-----	85	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
459500: Yorkville-----	60	Very limited Shrink-swell Low strength Slope	1.00 1.00 0.63	Somewhat limited Slope Unstable excavation walls Too clayey	0.63 0.10 0.03	Somewhat limited Slope	0.63
Rock outcrop-----	20	Not rated		Not rated		Not rated	

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Table 9.—Roads and Streets, Shallow Excavations, and Landscaping—Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459501: Yorkville-----	60	Very limited Slope Shrink-swell Low strength	1.00 1.00 1.00	Very limited Slope Unstable excavation walls Too clayey	1.00 0.10 0.03	Very limited Slope	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
455965: Alambique-----	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
McGarvey-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft	1.00
		Slow water	1.00	bedrock	
		movement		Slope	1.00
		Slope	1.00		
455966: Barnabe-----	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
				Slope	1.00
Candlestick-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slow water	1.00	bedrock	
		movement		Slope	1.00
		Slope	1.00	Seepage	0.50
455967: Barnabe-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
				Slope	1.00
Rock outcrop-----	40	Not rated		Not rated	
455970: Candlestick-----	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slow water	1.00	bedrock	
		movement		Slope	1.00
		Slope	1.00	Seepage	0.50
Barnabe-----	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
				Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455971: Candlestick-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
Kron-----	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Buriburi-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
455972: Candlestick variant-	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.04	Seepage	0.50
455973: Candlestick variant-	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
455974: Fagan-----	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.93
		Depth to bedrock	0.97		
455976: Los Gatos-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
455977: Maymen-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
455980: Obispo-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	1.00
455981: Obispo-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455982: Orthents-----	85	Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455986: Pits-----	50	Not rated		Not rated	
Dumps-----	50	Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455989: Scarper-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
Miramar-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft	1.00
		Slow water	1.00	bedrock	
		movement		Slope	1.00
		Slope	1.00	Seepage	0.50
455990: Sirdrak-----	85	Very limited		Very limited	
		Seepage, bottom	1.00	Seepage	1.00
		layer		Slope	1.00
		Filtering	1.00		
		capacity			
		Slope	1.00		
455991: Typic Argiustolls---	50	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement			
		Slope	0.16		
Urban land-----	30	Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated	

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455993:					
Urban land-----	50	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455994:					
Urban land-----	50	Not rated		Not rated	
Orthents-----	40	Not rated		Not rated	
455995:					
Urban land-----	65	Not rated		Not rated	
Orthents-----	30	Not rated		Not rated	
455996:					
Urban land-----	65	Not rated		Not rated	
Orthents-----	25	Not rated		Not rated	
455997:					
Urban land-----	45	Not rated		Not rated	
Sirdrak-----	35	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00		
455998:					
Zeni-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Zeni variant-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
456000:					
Beaches-----	100	Not rated		Not rated	
456001:					
Water-----	100	Not rated		Not rated	
456330:					
Botella-----	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.37	Seepage	0.50
456331:					
Butano-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456344: Coastal beaches-----	85	Very limited Flooding Depth to saturated zone Seepage, bottom layer Filtering capacity	1.00 1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone Slope	1.00 1.00 1.00 0.08
456364: Denison-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone	1.00
456365: Denison-----	85	Very limited Slow water movement	1.00	Not limited	
456367: Denison-----	85	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.50 0.32
456368: Denison-----	85	Very limited Slow water movement Slope	1.00 0.37	Very limited Slope Seepage	1.00 0.50
456376: Elkhorn-----	85	Very limited Slow water movement	1.00	Very limited Seepage Slope	1.00 0.32
456377: Elkhorn-----	85	Very limited Slow water movement	1.00	Very limited Seepage Slope	1.00 1.00
456379: Elkhorn-----	85	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 1.00
456382: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
456383: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.08

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456384: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00
456385: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.08
456386: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 1.00
456387: Farallone-----	85	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00
456388: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.08
456390: Farallone-----	85	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 1.00
456394: Gazos-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.16	Very limited Depth to hard bedrock Slope	1.00 1.00
456397: Gazos-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
456398: Gazos-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
456399: Gazos (dark phase)--	60	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.84	Very limited Depth to hard bedrock Slope	1.00 1.00

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456399: Calera-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
456400: Gazos (dark phase)--	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
Calera-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
456401: Gazos (dark phase)--	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
Calera-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
456403: Gazos (dark phase)--	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
Sweeney-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.77	Seepage	0.50
		Slow water movement	0.50	Depth to soft bedrock	0.42
456404: Gazos-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	0.92
				Seepage	0.50
Lobitos-----	40	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	0.92
				Seepage	0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456405: Gazos-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.37	Very limited Depth to hard bedrock Slope	1.00 1.00
Lobitos-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.37	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
456406: Gazos-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
Lobitos-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated	
456416: Hugo-----	40	Very limited Slope Depth to bedrock Slow water movement	1.00 0.94 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.84 0.50
Josephine-----	40	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.89	Very limited Slope Depth to soft bedrock	1.00 0.71
456418: Hugo-----	40	Very limited Slope Depth to bedrock Slow water movement	1.00 0.94 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.84 0.50
Josephine-----	40	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.89	Very limited Slope Dept to soft bedrock	1.00 0.71

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456420: Hugo-----	40	Very limited Slope Depth to bedrock Slow water movement	1.00 0.94 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.84 0.50
Josephine-----	40	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.89	Very limited Slope Depth to soft bedrock	1.00 0.71
456423: Hugo-----	40	Very limited Seepage, bottom layer Depth to bedrock	1.00 1.00	Very limited Seepage Slope Depth to soft bedrock	1.00 1.00 0.99
Josephine-----	40	Somewhat limited Depth to bedrock Slow water movement	0.97 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.93 0.50
456444: Lobitos-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.63	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
456445: Lobitos-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
456446: Lobitos-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
456460: Mixed alluvial land-	90	Very limited Flooding Seepage, bottom layer	1.00 1.00	Very limited Flooding Seepage Slope	1.00 1.00 0.08
456464: Miramar-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.16	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 1.00

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456465: Miramar-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
456466: Miramar-----	85	Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	1.00
456467: Miramar-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
456468: Miramar-----	85	Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	1.00
456469: Montara-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
456475: Rough broken land---	50	Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated	
456485: Stabilized dune land	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00		
456486: Sheridan-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.84	Seepage	1.00
456487: Sheridan-----	85	Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456488: Sheridan-----	85	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 1.00 1.00
456494: Soquel-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.68 0.50
456506: Sweeney-----	85	Somewhat limited Depth to bedrock Slow water movement Slope	0.77 0.50 0.37	Very limited Slope Seepage Depth to soft bedrock	1.00 0.50 0.42
456511: Sweeney-----	75	Very limited Slope Depth to bedrock Slow water movement	1.00 0.77 0.50	Very limited Slope Seepage Depth to soft bedrock	1.00 0.50 0.42
456517: Tierra-----	85	Very limited Slow water movement	1.00	Very limited Slope Seepage	1.00 0.50
456518: Tierra-----	85	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.50
456519: Tierra-----	85	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.50
456520: Tierra-----	85	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.50
459393: Ballard-----	85	Somewhat limited Slow water movement	0.50	Somewhat limited Slope Seepage	0.92 0.50
459395: Barnabe-----	85	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459396: Beaches-----	100	Not rated		Not rated	
459397: Blucher-----	40	Very limited Flooding	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.50
				Slope	0.32
Cole-----	30	Very limited Flooding	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	0.32
459398: Bonnydoon-----	85	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459399: Bonnydoon-----	85	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459402: Centissima-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Barnabe-----	20	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459403: Centissima-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Barnabe-----	20	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459404: Centissima-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Barnabe-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459406: Cortina-----	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Flooding	0.40	Flooding	0.40
				Slope	0.08
459407: Cronkhite-----	50	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.94	Depth to soft bedrock	0.84
		Slope	0.63	Seepage	0.50
Barnabe-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.63	Slope	1.00
				Seepage	0.50
459408: Cronkhite-----	50	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.84
		Depth to bedrock	0.94	Seepage	0.50
Barnabe-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459409: Cronkhite-----	40	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.84
		Depth to bedrock	0.94	Seepage	0.50
Barnabe-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459410: Cronkhite-----	40	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.94	Very limited Slope Depth to soft bedrock Seepage	1.00 0.84 0.50
Barnabe-----	30	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
459411: Dipsea-----	50	Very limited Slope Depth to bedrock Slow water movement	1.00 0.85 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.61 0.50
Barnabe-----	20	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
459412: Dipsea-----	50	Very limited Slope Depth to bedrock Slow water movement	1.00 0.85 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.61 0.50
Barnabe-----	20	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
459414: Dune land-----	95	Not rated		Not rated	
459415: Felton variant-----	40	Very limited Slow water movement Depth to bedrock Slope	1.00 0.89 0.63	Very limited Slope Depth to soft bedrock Seepage	1.00 0.71 0.50
Soulajule-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 0.63	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.32
459416: Felton variant-----	40	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.89	Very limited Slope Depth to soft bedrock Seepage	1.00 0.71 0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459416: Soulajule-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.32
459417: Felton variant-----	50	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.71
		Depth to bedrock	0.89	Seepage	0.50
Soulajule-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.32
459418: Felton variant-----	50	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.71
		Depth to bedrock	0.89	Seepage	0.50
Soulajule-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.32
459419: Fluvents-----	100	Not limited		Somewhat limited	
				Large stones	0.22
				Slope	0.08
459420: Gilroy-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
Gilroy variant-----	25	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	0.84
		Depth to bedrock	0.94	Seepage	0.50
Bonnydoon variant---	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459421: Henneke-----	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones	0.79	Large stones	1.00
459422: Humaquepts-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Organic matter content	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
				Slope	0.08
459423: Hydraquepts-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	
		Slow water movement	1.00		
459425: Inverness-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
		Depth to bedrock	0.24		
459427: Inverness-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
		Depth to bedrock	0.24		
459432: Los Osos-----	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.16	Seepage	0.50
Bonnydoon-----	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Slope	1.00
				Seepage	0.50
459433: Los Osos-----	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
Bonnydoon-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459434: Los Osos-----	60	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
Bonnydoon-----	20	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 1.00
459436: Los Osos-----	40	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
Urban land-----	30	Not rated		Not rated	
Bonnydoon-----	20	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to soft bedrock Slope	1.00 1.00
459437: Maymen-----	50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
Maymen variant-----	20	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
459438: Montara-----	85	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
459439: Novato-----	90	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
459440: Olmopali-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.92 0.50

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Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459441: Olompali-----	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Slope	0.63	Seepage	0.50
459442: Olompali-----	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Slope	1.00	Seepage	0.50
459448: Palomarin-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	0.99
		Slow water movement	0.50	Seepage	0.50
Wittenberg-----	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Depth to bedrock	0.77	Depth to hard bedrock	0.42
459451: Rock outcrop-----	50	Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated	
459452: Rodeo-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.04		
459453: Saurin-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
Bonnydoon-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
459454: Saurin-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459454: Bonnydoon-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459455: Saurin-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Bonnydoon-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
459456: Saurin-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Bonnydoon-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
459463: Sirdrak-----	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00		
459467: Tamalpais-----	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
Barnabe variant----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459468: Tamalpais-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459468: Barnabe variant-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459469: Tamalpais-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.50
Barnabe variant-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459471: Tocaloma-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
McMullin-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459472: Tocaloma-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
McMullin-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
459473: Tocaloma-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
McMullin-----	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Urban land-----	25	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459474: Tocaloma-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
McMullin-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Urban land-----	20	Not rated		Not rated	
459475: Tocaloma-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Saurin-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
459476: Tocaloma-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Saurin-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
459477: Tocaloma-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Saurin-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
459481: Tomales-----	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.71
		Depth to bedrock	0.89	Seepage	0.50

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459489: Tomales-----	50	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.89	Very limited Slope Depth to soft bedrock Seepage	1.00 0.71 0.50
Steinbeck-----	30	Very limited Slope Depth to bedrock Slow water movement	1.00 0.85 0.50	Very limited Slope Depth to soft bedrock Seepage	1.00 0.61 0.50
459490: Tomales-----	50	Very limited Slow water movement Depth to bedrock Slope	1.00 0.89 0.16	Very limited Slope Depth to soft bedrock Seepage	1.00 0.71 0.50
Steinbeck-----	30	Somewhat limited Depth to bedrock Slow water movement Slope	0.85 0.50 0.16	Very limited Slope Depth to soft bedrock Seepage	1.00 0.61 0.50
459494: Urban land-----	70	Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated	
459497: Yorkville-----	85	Very limited Slow water movement Depth to bedrock Slope	1.00 0.72 0.63	Very limited Slope Depth to soft bedrock	1.00 0.32
459498: Yorkville-----	85	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.72	Very limited Slope Depth to soft bedrock	1.00 0.32
459499: Yorkville-----	85	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.94	Very limited Slope Depth to soft bedrock	1.00 0.84
459500: Yorkville-----	60	Very limited Slow water movement Depth to bedrock Slope	1.00 0.72 0.63	Very limited Slope Depth to soft bedrock	1.00 0.32
Rock outcrop-----	20	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 10.—Sewage Disposal—Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459501: Yorkville-----	60	Very limited Slow water movement Slope Depth to bedrock	1.00 1.00 0.72	Very limited Slope Depth to soft bedrock	1.00 0.32
Rock outcrop-----	20	Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455965: Alambique-----	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McGarvey-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455966: Barnabe-----	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Candlestick-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455967: Barnabe-----	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	40	Not rated		Not rated	
455970: Candlestick-----	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
455971: Candlestick-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kron-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Buriburi-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455972: Candlestick variant-	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455973: Candlestick variant-	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455974: Fagan-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455976: Los Gatos-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455977: Maymen-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455980: Obispo-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455981: Obispo-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455982: Orthents-----	85	Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
455986: Pits-----	50	Fair		Poor	
		Bottom layer	0.44	Bottom layer	0.00
		Thickest layer	0.63	Thickest layer	0.00
Dumps-----	50	Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455989: Scarper-----	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.06
		Thickest layer	0.00	Thickest layer	0.06
Miramar-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
455990: Sirdrak-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.82
		Thickest layer	0.00	Thickest layer	0.82
455991: Typic Argiustolls---	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land-----	30	Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated	
455993: Urban land-----	50	Not rated		Not rated	
Orthents-----	45	Not rated		Not rated	
455994: Urban land-----	50	Not rated		Not rated	
Orthents-----	40	Not rated		Not rated	
455995: Urban land-----	65	Not rated		Not rated	
Orthents-----	30	Not rated		Not rated	
455996: Urban land-----	65	Not rated		Not rated	
Orthents-----	25	Not rated		Not rated	
455997: Urban land-----	45	Not rated		Not rated	
Sirdrak-----	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.82
		Thickest layer	0.00	Thickest layer	0.82
455998: Zeni-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Zeni variant-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456000: Beaches-----	100	Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated	
456330: Botella-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456331: Butano-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456344: Coastal beaches----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.45
		Thickest layer	0.00	Bottom layer	0.70
456364: Denison-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456365: Denison-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456367: Denison-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456368: Denison-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456376: Elkhorn-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
456377: Elkhorn-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
456379: Elkhorn-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
456382: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456383: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06
456384: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06
456385: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06
456386: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06
456387: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06
456388: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.06
		Thickest layer	0.00	Bottom layer	0.54
456390: Farallone-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.06
456394: Gazos-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456397: Gazos-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456398: Gazos-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456399: Gazos (dark phase)--	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Calera-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456400: Gazos (dark phase)---	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Calera-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456401: Gazos (dark phase)---	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Calera-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456403: Gazos (dark phase)---	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sweeney-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456404: Gazos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lobitos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456405: Gazos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lobitos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456406: Gazos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lobitos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456414: Gullied land (Tierra and Watsonville soil materials)-----	85	Not rated		Not rated	
456416: Hugo-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Josephine-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456418: Hugo-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Josephine-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456420: Hugo-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Josephine-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456423: Hugo-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.03 0.03
Josephine-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456444: Lobitos-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456445: Lobitos-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456446: Lobitos-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
456460: Mixed alluvial land-	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456464: Miramar-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
456465: Miramar-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
456466: Miramar-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
456467: Miramar-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
456468: Miramar-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
456469: Montara-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456475: Rough broken land---	50	Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated	
456485: Stabilized dune land	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.45
		Thickest layer	0.00	Bottom layer	0.93
456486: Sheridan-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.06
		Thickest layer	0.00	Thickest layer	0.06
456487: Sheridan-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.06
		Thickest layer	0.00	Thickest layer	0.06
456488: Sheridan-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.06
		Thickest layer	0.00	Thickest layer	0.06
456494: Soquel-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
456506: Sweeney-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456511: Sweeney-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456517: Tierra-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456518: Tierra-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456519: Tierra-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
456520: Tierra-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459393: Ballard-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459395: Barnabe-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459396: Beaches-----	100	Not rated		Not rated	
459397: Blucher-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cole-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459398: Bonnydoon-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459399: Bonnydoon-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459402: Centissima-----	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Barnabe-----	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459403: Centissima-----	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Barnabe-----	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459404: Centissima-----	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Barnabe-----	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459406: Cortina-----	85	Fair		Fair	
		Bottom layer	0.12	Thickest layer	0.00
		Thickest layer	0.12	Bottom layer	0.07
459407: Cronkhite-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459408: Cronkhite-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459409: Cronkhite-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459410: Cronkhite-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459411: Dipsea-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459412: Dipsea-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe-----	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
459414: Dune land-----	95	Not rated		Not rated	
459415: Felton variant-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Soulajule-----	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
459416: Felton variant-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Soulajule-----	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
459417: Felton variant-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Soulajule-----	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459418: Felton variant-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Soulajule-----	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
459419: Fluvents-----	100	Not rated		Not rated	
459420: Gilroy-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Gilroy variant-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon variant---	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459421: Henneke-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459422: Humaquepts-----	90	Not rated		Not rated	
459423: Hydraquents-----	90	Not rated		Not rated	
459425: Inverness-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459427: Inverness-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459432: Los Osos-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459433: Los Osos-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459433: Bonnydoon-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459434: Los Osos-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459436: Los Osos-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land-----	30	Not rated		Not rated	
Bonnydoon-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459437: Maymen-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Maymen variant-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459438: Montara-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459439: Novato-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459440: Olmopali-----	85	Not rated		Poor	
				Bottom layer	0.00
				Thickest layer	0.00
459441: Olmopali-----	85	Not rated		Poor	
				Bottom layer	0.00
				Thickest layer	0.00
459442: Olmopali-----	85	Not rated		Poor	
				Bottom layer	0.00
				Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459448: Palomarin-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wittenberg-----	30	Fair		Poor	
		Bottom layer	0.12	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
459451: Rock outcrop-----	50	Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated	
459452: Rodeo-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459453: Saurin-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459454: Saurin-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459455: Saurin-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459456: Saurin-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonnydoon-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459463: Sirdrak-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.73
		Thickest layer	0.00	Bottom layer	0.82

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459467: Tamalpais-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe variant----	30	Fair		Poor	
		Thickest layer	0.04	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
459468: Tamalpais-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe variant----	30	Fair		Poor	
		Thickest layer	0.04	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
459469: Tamalpais-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Barnabe variant----	40	Fair		Poor	
		Thickest layer	0.04	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
459471: Tocaloma-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McMullin-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459472: Tocaloma-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McMullin-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459473: Tocaloma-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McMullin-----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land-----	25	Not rated		Not rated	
459474: Tocaloma-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459474: McMullin-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land-----	20	Not rated		Not rated	
459475: Tocaloma-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Saurin-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459476: Tocaloma-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Saurin-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459477: Tocaloma-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Saurin-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459481: Tomaes-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459489: Tomaes-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Steinbeck-----	30	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.01
459490: Tomaes-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Steinbeck-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459494: Urban land-----	70	Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 11.—Source of Gravel and Sand—Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class and limiting features	Value	Rating class and limiting features	Value
459495: Xerorthents-----	100	Not rated		Not rated	
459497: Yorkville-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459498: Yorkville-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459499: Yorkville-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
459500: Yorkville-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	20	Not rated		Not rated	
459501: Yorkville-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	20	Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Fair		Poor		Poor	
		Droughty	0.42	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Depth to bedrock	0.54
		Too acid	0.74			Rock fragments	0.88
455965: Alambique-----	45	Fair		Poor		Poor	
		Droughty	0.03	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Too acid	0.74			Depth to bedrock	0.54
McGarvey-----	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.00	Too clayey	0.00
		Depth to bedrock	0.97	Low strength	0.00	Depth to bedrock	0.97
455966: Barnabe-----	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Too acid	0.95			Slope	0.00
Candlestick-----	35	Fair		Poor		Poor	
		Droughty	0.10	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.10	Slope	0.00	Depth to bedrock	0.10
		Too acid	0.95				
455967: Barnabe-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Too acid	0.95			Slope	0.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
455970: Candlestick-----	45	Fair		Poor		Poor	
		Droughty	0.10	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.10	Slope	0.00	Depth to bedrock	0.10
		Too acid	0.95				
Barnabe-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Too acid	0.95			Slope	0.00
455971: Candlestick-----	40	Fair		Poor		Poor	
		Droughty	0.10	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.10	Slope	0.00	Depth to bedrock	0.10
		Too acid	0.95				

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455971: Kron-----	25	Poor Droughty Depth to bedrock Water erosion	 0.00 0.00 0.68	Poor Depth to bedrock Slope	 0.00 0.00	Poor Depth to bedrock Slope	 0.00 0.00
Buriburi-----	20	Fair Droughty Depth to bedrock Too acid	 0.09 0.54 0.95	Poor Depth to bedrock Slope	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.00 0.54
455972: Candlestick variant-	85	Fair Low content of organic matter Too acid	 0.12 0.84	Poor Low strength Shrink-swell	 0.00 0.96	Fair Slope	 0.96
455973: Candlestick variant-	85	Fair Low content of organic matter Too acid	 0.12 0.84	Poor Low strength Slope Shrink-swell	 0.00 0.08 0.96	Poor Slope	 0.00
455974: Fagan-----	85	Fair Too clayey	 0.12	Poor Low strength Slope Shrink-swell	 0.00 0.00 0.49	Poor Slope Too clayey Rock fragments	 0.00 0.10 0.97
455976: Los Gatos-----	85	Fair Depth to bedrock Droughty	 0.93 0.99	Poor Depth to bedrock Slope Low strength	 0.00 0.00 0.78	Poor Slope Depth to bedrock Rock fragments	 0.00 0.93 0.97
455977: Maymen-----	85	Poor Droughty Depth to bedrock Too acid	 0.00 0.00 0.84	Poor Depth to bedrock Slope	 0.00 0.00	Poor Depth to bedrock Slope Rock fragments	 0.00 0.00 0.00
455980: Obispo-----	85	Poor Too clayey Droughty Depth to bedrock	 0.00 0.00 0.00	Poor Depth to bedrock Low strength Shrink-swell	 0.00 0.00 0.87	Poor Too clayey Depth to bedrock Slope	 0.00 0.00 0.84
455981: Obispo-----	85	Poor Too clayey Droughty Depth to bedrock	 0.00 0.00 0.00	Poor Depth to bedrock Low strength Slope	 0.00 0.00 0.08	Poor Too clayey Depth to bedrock Slope	 0.00 0.00 0.00
455982: Orthents-----	85	Not rated		Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated		Not rated	

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455984: Orthents-----	55	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455986: Pits-----	50	Not rated		Not rated		Not rated	
Dumps-----	50	Not rated		Not rated		Not rated	
455988: Rock outcrop-----	45	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455989: Scarper-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.16	Slope	0.00	Rock fragments	0.00
		Too acid	0.95			Depth to bedrock	0.16
Miramar-----	35	Fair		Poor		Poor	
		Droughty	0.45	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46	Slope	0.00	Depth to bedrock	0.46
		Too acid	0.99	Low strength	0.00		
455990: Sirdrak-----	85	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Too sandy	0.00
		Wind erosion	0.00			Slope	0.00
		Droughty	0.09				
455991: Typic Argiustolls---	50	Fair		Fair		Fair	
		Too acid	0.74	Low strength	0.78	Slope	0.84
		Low content of organic matter	0.88	Shrink-swell	0.89		
Urban land-----	30	Not rated		Not rated		Not rated	
455992: Urban land-----	85	Not rated		Not rated		Not rated	
455993: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455994: Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	40	Not rated		Not rated		Not rated	
455995: Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	30	Not rated		Not rated		Not rated	

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455996:							
Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	25	Not rated		Not rated		Not rated	
455997:							
Urban land-----	45	Not rated		Not rated		Not rated	
Sirdrak-----	35	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Too sandy	0.00
		Wind erosion				Slope	0.00
		Droughty	0.09				
455998:							
Zeni-----	40	Fair		Poor		Poor	
		Droughty	0.04	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.21	Slope	0.00	Rock fragments	0.00
		Too acid	0.54	Shrink-swell	0.87	Depth to bedrock	0.21
Zeni variant-----	35	Fair		Poor		Poor	
		Droughty	0.49	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.74	Slope	0.00	Slope	0.00
		Too clayey	0.88	Shrink-swell	0.92	Too clayey	0.77
456000:							
Beaches-----	100	Not rated		Not rated		Not rated	
456001:							
Water-----	100	Not rated		Not rated		Not rated	
456330:							
Botella-----	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.63
				Shrink-swell	0.87	Rock fragments	0.97
456331:							
Butano-----	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.71	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.93			Depth to bedrock	0.93
456344:							
Coastal beaches-----	85	Poor		Poor		Poor	
		Too sandy	0.00	Wetness	0.00	Hard to reclaim (dense layer)	0.00
		Wind erosion	0.00			Wetness	0.00
		Droughty	0.00			Too sandy	0.00
456364:							
Denison-----	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness	0.00	Too clayey	0.00
		Low content of organic matter	0.68	Low strength	0.00	Wetness	0.00
		Too acid	0.95	Shrink-swell	0.31		
456365:							
Denison-----	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.31		
		Too acid	0.95				

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456367: Denison-----	85	Poor Too clayey Low content of organic matter Too acid	0.00 0.68 0.95	Poor Low strength Shrink-swell	0.00 0.49	Poor Too clayey	0.00
456368: Denison-----	85	Poor Too clayey Low content of organic matter Too acid	0.00 0.68 0.95	Poor Low strength Shrink-swell	0.00 0.49	Poor Too clayey Slope	0.00 0.63
456376: Elkhorn-----	85	Fair Low content of organic matter Too acid	0.12 0.95	Fair Shrink-swell	0.98	Fair Rock fragments	0.97
456377: Elkhorn-----	85	Fair Low content of organic matter Too acid	0.12 0.95	Fair Shrink-swell	0.98	Fair Rock fragments	0.97
456379: Elkhorn-----	85	Fair Low content of organic matter Too acid	0.12 0.95	Poor Slope Shrink-swell	0.00 0.96	Poor Slope Rock fragments	0.00 0.97
456382: Farallone-----	85	Fair Low content of organic matter Too acid	0.12 0.99	Good		Fair Rock fragments	0.97
456383: Farallone-----	85	Fair Low content of organic matter Too acid	0.12 0.99	Good		Fair Rock fragments	0.97
456384: Farallone-----	85	Fair Low content of organic matter Too acid	0.12 0.99	Good		Fair Rock fragments	0.88
456385: Farallone-----	85	Fair Low content of organic matter Too acid	0.12 0.99	Good		Fair Rock fragments	0.88
456386: Farallone-----	85	Fair Low content of organic matter Too acid	0.12 0.99	Good		Fair Rock fragments	0.88

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456387: Farallone-----	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Slope	0.00
		Too acid	0.99			Rock fragments	0.88
456388: Farallone-----	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Hard to reclaim (rock fragments)	0.08
		Droughty	0.85			Rock fragments	0.88
		Too acid	0.99				
456390: Farallone-----	85	Poor		Good		Fair	
		Wind erosion	0.00			Rock fragments	0.88
		Low content of organic matter	0.12				
		Too acid	0.99				
456394: Gazos-----	85	Fair		Poor		Fair	
		Depth to bedrock	0.16	Depth to bedrock	0.00	Depth to bedrock	0.16
		Droughty	0.27	Low strength	0.78	Slope	0.84
		Water erosion	0.68	Shrink-swell	0.93	Rock fragments	0.97
456397: Gazos-----	85	Fair		Poor		Poor	
		Depth to bedrock	0.16	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.27	Slope	0.00	Depth to bedrock	0.16
		Water erosion	0.68	Low strength	0.78	Rock fragments	0.97
456398: Gazos-----	85	Fair		Poor		Poor	
		Depth to bedrock	0.16	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.27	Slope	0.00	Depth to bedrock	0.16
		Water erosion	0.68	Low strength	0.78	Rock fragments	0.97
456399: Gazos (dark phase)--	60	Fair		Poor		Fair	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
		Droughty	0.18	Low strength	0.78	Slope	0.16
		Water erosion	0.68	Shrink-swell	0.93	Rock fragments	0.97
Calera-----	20	Fair		Poor		Fair	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Slope	0.37
		Droughty	0.76	Low strength	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.96	Shrink-swell	0.87	Rock fragments	0.97
456400: Gazos (dark phase)--	40	Fair		Poor		Poor	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.18	Slope	0.00	Depth to bedrock	0.10
		Water erosion	0.68	Low strength	0.78	Rock fragments	0.97
Calera-----	40	Fair		Poor		Poor	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.76	Slope	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.96	Low strength	0.00	Rock fragments	0.97

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456401: Gazos (dark phase)---	40	Fair		Poor		Poor	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.18	Slope	0.00	Depth to bedrock	0.10
		Water erosion	0.68	Low strength	0.78	Rock fragments	0.97
Calera-----	40	Fair		Poor		Poor	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.76	Slope	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.96	Low strength	0.00	Rock fragments	0.97
456403: Gazos (dark phase)---	40	Fair		Poor		Poor	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.18	Slope	0.00	Depth to bedrock	0.10
		Water erosion	0.68	Low strength	0.78	Rock fragments	0.97
Sweeney-----	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.99	Depth to bedrock	0.58		
456404: Gazos-----	40	Fair		Poor		Fair	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Depth to bedrock	0.35
		Droughty	0.50	Low strength	0.78	Rock fragments	0.97
		Water erosion	0.68	Shrink-swell	0.99		
Lobitos-----	40	Fair		Poor		Fair	
		Too acid	0.84	Depth to bedrock	0.00	Rock fragments	0.88
		Water erosion	0.99			Depth to bedrock	0.99
		Droughty	0.99				
456405: Gazos-----	40	Fair		Poor		Fair	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
		Droughty	0.18	Low strength	0.78	Slope	0.63
		Water erosion	0.68	Shrink-swell	0.93	Rock fragments	0.97
Lobitos-----	40	Fair		Poor		Fair	
		Droughty	0.82	Depth to bedrock	0.00	Slope	0.63
		Too acid	0.84			Depth to bedrock	0.84
		Depth to bedrock	0.84			Rock fragments	0.88
456406: Gazos-----	40	Fair		Poor		Poor	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.18	Slope	0.08	Depth to bedrock	0.10
		Water erosion	0.68	Low strength	0.78	Rock fragments	0.97
Lobitos-----	40	Fair		Poor		Poor	
		Droughty	0.82	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.84	Slope	0.08	Depth to bedrock	0.84
		Depth to bedrock	0.84			Rock fragments	0.88
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456414: Gullied land (Tierra and Watsonville soil materials)-----	85	Not rated		Not rated		Not rated	
456416: Hugo-----	40	Fair Low content of organic matter Too acid	0.68 0.84	Fair Slope Depth to bedrock	0.08 0.16	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
Josephine-----	40	Fair Too acid Low content of organic matter Too clayey	0.84 0.88 0.98	Poor Low strength Slope Depth to bedrock	0.00 0.08 0.29	Poor Slope Too clayey Rock fragments	0.00 0.70 0.72
456418: Hugo-----	40	Fair Low content of organic matter Too acid	0.68 0.84	Poor Slope Depth to bedrock	0.00 0.16	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
Josephine-----	40	Fair Too acid Low content of organic matter Too clayey	0.84 0.88 0.98	Poor Slope Low strength Depth to bedrock	0.00 0.00 0.29	Poor Slope Too clayey Rock fragments	0.00 0.70 0.72
456420: Hugo-----	40	Fair Low content of organic matter Too acid	0.68 0.84	Poor Slope Depth to bedrock	0.00 0.16	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
Josephine-----	40	Fair Too acid Low content of organic matter Too clayey	0.84 0.88 0.98	Poor Slope Low strength Depth to bedrock	0.00 0.00 0.29	Poor Slope Too clayey Rock fragments	0.00 0.70 0.72
456423: Hugo-----	40	Fair Low content of organic matter Droughty Too acid	0.68 0.81 0.84	Fair Depth to bedrock	0.01	Poor Rock fragments Hard to reclaim (rock fragments)	0.00 0.50
Josephine-----	40	Fair Too acid Low content of organic matter	0.84 0.88	Fair Depth to bedrock Low strength Shrink-swell	0.07 0.78 0.87	Fair Rock fragments	0.72
456444: Lobitos-----	85	Fair Droughty Too acid Depth to bedrock	0.82 0.84 0.84	Poor Depth to bedrock	0.00	Fair Slope Depth to bedrock Rock fragments	0.37 0.84 0.88

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456445: Lobitos-----	85	Fair		Poor		Poor	
		Droughty	0.82	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.84	Slope	0.08	Depth to bedrock	0.84
		Depth to bedrock	0.84			Rock fragments	0.88
456446: Lobitos-----	85	Fair		Poor		Poor	
		Droughty	0.82	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.84	Slope	0.00	Depth to bedrock	0.84
		Depth to bedrock	0.84			Rock fragments	0.88
456460: Mixed alluvial land-	90	Poor		Good		Fair	
		Wind erosion	0.00			Hard to reclaim	0.50
		Low content of organic matter	0.00			(rock fragments)	
						Rock fragments	0.72
456464: Miramar-----	85	Fair		Poor		Fair	
		Droughty	0.80	Depth to bedrock	0.00	Slope	0.84
		Depth to bedrock	0.97			Depth to bedrock	0.97
		Too acid	0.99				
456465: Miramar-----	85	Fair		Poor		Poor	
		Droughty	0.80	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.97	Slope	0.98	Depth to bedrock	0.97
		Too acid	0.99				
456466: Miramar-----	85	Fair		Poor		Poor	
		Droughty	0.80	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.97	Slope	0.00	Depth to bedrock	0.97
		Too acid	0.99				
456467: Miramar-----	85	Fair		Poor		Poor	
		Droughty	0.57	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Slope	0.00	Depth to bedrock	0.79
		Too acid	0.99	Shrink-swell	0.99		
456468: Miramar-----	85	Fair		Poor		Poor	
		Droughty	0.80	Slope	0.00	Slope	0.00
		Depth to bedrock	0.97	Depth to bedrock	0.00	Depth to bedrock	0.97
		Too acid	0.99				
456469: Montara-----	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.24	Stones	0.82	Rock fragments	0.00
456475: Rough broken land---	50	Not rated		Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated		Not rated	

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456485: Stabilized dune land	90	Poor Too sandy Wind erosion Droughty	 0.00 0.00 0.00	Poor Slope	 0.00	Poor Too sandy Slope	 0.00 0.00
456486: Sheridan-----	85	Fair Droughty Low content of organic matter Depth to bedrock	 0.36 0.68 0.99	Poor Depth to bedrock	 0.00	Fair Slope Rock fragments Depth to bedrock	 0.16 0.72 0.99
456487: Sheridan-----	85	Fair Droughty Low content of organic matter Depth to bedrock	 0.36 0.68 0.99	Poor Depth to bedrock Slope	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.72 0.99
456488: Sheridan-----	85	Fair Droughty Low content of organic matter Depth to bedrock	 0.36 0.68 0.99	Poor Slope Depth to bedrock	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.72 0.99
456494: Soquel-----	85	Fair Water erosion	 0.90	Poor Wetness	 0.00	Poor Wetness Rock fragments	 0.00 0.97
456506: Sweeney-----	85	Fair Low content of organic matter Too acid	 0.12 0.99	Fair Depth to bedrock	 0.58	Fair Slope	 0.63
456511: Sweeney-----	75	Fair Low content of organic matter Too acid	 0.12 0.99	Poor Slope Depth to bedrock	 0.00 0.58	Poor Slope Rock fragments	 0.00 0.72
456517: Tierra-----	85	Poor Too clayey Low content of organic matter Too acid	 0.00 0.12 0.54	Fair Shrink-swell	 0.71	Poor Too clayey	 0.00
456518: Tierra-----	85	Poor Too clayey Low content of organic matter Too acid	 0.00 0.12 0.54	Fair Shrink-swell Slope	 0.71 0.98	Poor Too clayey Slope	 0.00 0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456519: Tierra-----	85	Poor Too clayey Low content of organic matter Too acid	0.00 0.12 0.54	Fair Shrink-swell Slope	0.64 0.98	Poor Too clayey Slope	0.00 0.00
456520: Tierra-----	85	Poor Too clayey Low content of organic matter Too acid	0.00 0.12 0.54	Poor Slope Shrink-swell	0.00 0.71	Poor Slope Too clayey	0.00 0.00
459393: Ballard-----	85	Fair Low content of organic matter Too acid Too clayey	0.88 0.95 0.98	Good		Poor Rock fragments Hard to reclaim (rock fragments) Too clayey	0.00 0.50 0.70
459395: Barnabe-----	85	Poor Droughty Depth to bedrock Low content of organic matter	0.00 0.00 0.88	Poor Depth to bedrock Slope	0.00 0.00	Poor Rock fragments Depth to bedrock Slope	0.00 0.00 0.00
459396: Beaches-----	100	Not rated		Not rated		Not rated	
459397: Blucher-----	40	Fair Too clayey Low content of organic matter Water erosion	0.76 0.88 0.90	Poor Wetness Low strength Shrink-swell	0.00 0.00 0.97	Poor Wetness Too clayey	0.00 0.54
Cole-----	30	Poor Too clayey Water erosion	0.00 0.99	Poor Wetness Low strength Shrink-swell	0.00 0.00 0.12	Poor Wetness Too clayey	0.00 0.00
459398: Bonnydoon-----	85	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Slope	0.00 0.08	Poor Depth to bedrock Slope Rock fragments	0.00 0.00 0.00
459399: Bonnydoon-----	85	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Slope	0.00 0.00	Poor Depth to bedrock Slope Rock fragments	0.00 0.00 0.00
459402: Centissima-----	50	Fair Droughty Depth to bedrock Too acid	0.20 0.79 0.95	Poor Depth to bedrock Slope	0.00 0.08	Poor Slope Rock fragments Depth to bedrock	0.00 0.72 0.79

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459402: Barnabe-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.08	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459403: Centissima-----	50	Fair		Poor		Poor	
		Droughty	0.20	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Slope	0.00	Rock fragments	0.72
		Too acid	0.95			Depth to bedrock	0.79
Barnabe-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459404: Centissima-----	40	Fair		Poor		Poor	
		Droughty	0.20	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Slope	0.00	Rock fragments	0.72
		Too acid	0.95			Depth to bedrock	0.79
Barnabe-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459406: Cortina-----	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.21			Hard to reclaim (rock fragments)	0.00
459407: Cronkhite-----	50	Fair		Poor		Fair	
		Low content of organic matter	0.88	Low strength	0.00	Slope	0.37
		Water erosion	0.99	Depth to bedrock	0.16		
				Shrink-swell	0.60		
Barnabe-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.37
459408: Cronkhite-----	50	Fair		Poor		Poor	
		Low content of organic matter	0.88	Low strength	0.00	Slope	0.00
		Water erosion	0.99	Slope	0.08		
				Shrink-swell	0.60		
Barnabe-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.08	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459409: Cronkhite-----	40	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.99	Shrink-swell	0.60		
Barnabe-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459410: Cronkhite-----	40	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.99	Shrink-swell	0.60		
Barnabe-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459411: Dipsea-----	50	Fair		Poor		Poor	
		Droughty	0.54	Slope	0.00	Hard to reclaim	0.00
		Too acid	0.74	Depth to bedrock	0.39	(rock fragments)	
		Low content of organic matter	0.88			Rock fragments	0.00
						Slope	0.00
Barnabe-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459412: Dipsea-----	50	Fair		Poor		Poor	
		Droughty	0.54	Slope	0.00	Hard to reclaim	0.00
		Too acid	0.74	Depth to bedrock	0.39	(rock fragments)	
		Low content of organic matter	0.88			Rock fragments	0.00
						Slope	0.00
Barnabe-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.00
459414: Dune land-----	95	Not rated		Not rated		Not rated	
459415: Felton variant-----	40	Fair		Fair		Fair	
		Water erosion	0.99	Depth to bedrock	0.29	Slope	0.37
		Too acid	0.99	Shrink-swell	0.87		
Soulajule-----	40	Fair		Poor		Fair	
		Droughty	0.21	Depth to bedrock	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35	Low strength	0.00	Slope	0.37
		Water erosions	0.99	Shrink-swell	0.69	Too clayey	0.86

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459416: Felton variant-----	40	Fair		Fair		Poor	
		Water erosion	0.99	Slope	0.08	Slope	0.00
		Too acid	0.99	Depth to bedrock	0.29		
				Shrink-swell	0.87		
Soulajule-----	40	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.35	Low strength	0.00	Depth to bedrock	0.35
		Water erosion	0.99	Shrink-swell	0.69	Too clayey	0.86
459417: Felton variant-----	50	Fair		Poor		Poor	
		Water erosion	0.99	Slope	0.00	Slope	0.00
		Too acid	0.99	Depth to bedrock	0.29		
				Shrink-swell	0.87		
Soulajule-----	40	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.35	Slope	0.00	Depth to bedrock	0.35
		Water erosion	0.99	Shrink-swell	0.69	Too clayey	0.86
459418: Felton variant-----	50	Fair		Poor		Poor	
		Water erosion	0.99	Slope	0.00	Slope	0.00
		Too acid	0.99	Depth to bedrock	0.29		
				Shrink-swell	0.87		
Soulajule-----	40	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.35	Slope	0.00	Depth to bedrock	0.35
		Water erosion	0.99	Shrink-swell	0.69	Too clayey	0.86
459419: Fluvents-----	100	Not rated		Not rated		Not rated	
459420: Gilroy-----	35	Fair		Poor		Poor	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.61	Slope	0.00	Depth to bedrock	0.54
		Water erosion	0.99	Shrink-swell	0.87		
Gilroy variant-----	25	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Depth to bedrock	0.16	Hard to reclaim (rock fragments)	0.68
				Shrink-swell	0.98	Rock fragments	0.88
Bonnydoon variant---	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
						Rock fragments	0.97
459421: Henneke-----	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Too clayey	0.00	Cobble content	0.00	Slope	0.00

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Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459422: Humaquepts-----	90	Not rated		Not rated		Not rated	
459423: Hydraquepts-----	90	Not rated		Not rated		Not rated	
459425: Inverness-----	85	Fair Too acid Low content of organic matter	0.74 0.88	Fair Slope	0.08	Poor Slope	0.00
459427: Inverness-----	85	Fair Too acid Low content of organic matter	0.74 0.88	Poor Slope	0.00	Poor Slope	0.00
459432: Los Osos-----	60	Poor Too clayey Low content of organic matter Water erosion	0.00 0.88 0.99	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.31	Poor Too clayey Slope Depth to bedrock	0.00 0.84 0.99
Bonnydoon-----	25	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Slope	0.00 0.08	Poor Depth to bedrock Rock fragments Slope	0.00 0.00 0.84
459433: Los Osos-----	60	Poor Too clayey Low content of organic matter Water erosion	0.00 0.88 0.99	Poor Depth to bedrock Low strength Shrink-swell	0.00 0.00 0.31	Poor Slope Too clayey Depth to bedrock	0.00 0.00 0.99
Bonnydoon-----	20	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Slope	0.00 0.08	Poor Depth to bedrock Slope Rock fragments	0.00 0.00 0.00
459434: Los Osos-----	60	Poor Too clayey Droughty Water erosion	0.00 0.54 0.99	Poor Depth to bedrock Slope Low strength	0.00 0.00 0.00	Poor Slope Too clayey Depth to bedrock	0.00 0.00 0.54
Bonnydoon-----	20	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Slope	0.00 0.00	Poor Depth to bedrock Slope Rock fragments	0.00 0.00 0.00
459436: Los Osos-----	40	Poor Too clayey Droughty Water erosion	0.00 0.54 0.99	Poor Depth to bedrock Slope Low strength	0.00 0.00 0.00	Poor Slope Too clayey Depth to bedrock	0.00 0.00 0.54

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459436: Urban land-----	30	Not rated		Not rated		Not rated	
Bonnydoon-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
						Rock fragments	0.00
459437: Maymen-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Too acid	0.68			Rock fragments	0.00
Maymen variant-----	20	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.51	Slope	0.00	Slope	0.00
		Too acid	0.84	Low strength	0.00	Rock fragments	0.00
459438: Montara-----	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Too clayey	0.98	Slope	0.08	Rock fragments	0.88
459439: Novato-----	90	Poor		Poor		Poor	
		Salinity	0.00	Wetness	0.00	Wetness	0.00
		Droughty	0.00	Low strength	0.00	Salinity	0.00
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
459440: Olompali-----	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Wetness	0.00
		Water erosion	0.99	Shrink-swell	0.20		
459441: Olompali-----	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Wetness	0.00
		Water erosion	0.99	Shrink-swell	0.20	Slope	0.37
459442: Olompali-----	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Wetness	0.00
		Water erosion	0.99	Shrink-swell	0.20	Slope	0.00
459448: Palomarin-----	40	Fair		Poor		Poor	
		Too acid	0.50	Slope	0.00	Slope	0.00
		Water erosion	0.99	Depth to bedrock	0.01	Hard to reclaim (rock fragments)	0.82
						Too acid	0.88

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459448: Wittenberg-----	30	Fair		Poor		Poor	
		Droughty	0.25	Slope	0.00	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54	Depth to bedrock	0.58	Rock fragments	0.00
						Slope	0.00
459451: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated		Not rated	
459452: Rodeo-----	90	Fair		Poor		Poor	
		Too acid	0.54	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.88	Low strength	0.00	Too clayey	0.93
		Too clayey	0.98	Shrink-swell	0.25	Slope	0.96
459453: Saurin-----	50	Fair		Poor		Fair	
		Depth to bedrock	0.79	Depth to bedrock	0.00	Too clayey	0.63
		Too clayey	0.88	Low strength	0.22	Depth to bedrock	0.79
		Water erosion	0.99	Shrink-swell	0.87	Rock fragments	0.88
Bonnydoon-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
						Slope	0.96
459454: Saurin-----	40	Fair		Poor		Poor	
		Depth to bedrock	0.79	Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.88	Slope	0.08	Too clayey	0.63
		Water erosion	0.99	Low strength	0.22	Depth to bedrock	0.79
Bonnydoon-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Slope	0.00
						Rock fragments	0.00
459455: Saurin-----	50	Fair		Poor		Poor	
		Depth to bedrock	0.79	Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.88	Slope	0.00	Too clayey	0.63
		Water erosion	0.99	Low strength	0.22	Depth to bedrock	0.79
Bonnydoon-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
						Rock fragments	0.00
459456: Saurin-----	50	Fair		Poor		Poor	
		Depth to bedrock	0.79	Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.88	Slope	0.00	Too clayey	0.63
		Water erosion	0.99	Low strength	0.22	Depth to bedrock	0.79
Bonnydoon-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
						Rock fragments	0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459463: Sirdrak-----	90	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Too acid	0.84				
459467: Tamalpais-----	60	Fair		Poor		Poor	
		Droughty	0.13	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.08	Slope	0.00
		Too acid	0.95			Too clayey	0.70
Barnabe variant----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.08	Depth to bedrock	0.00
						Slope	0.00
459468: Tamalpais-----	50	Fair		Poor		Poor	
		Droughty	0.13	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Too acid	0.95			Too clayey	0.70
Barnabe variant----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Slope	0.00
459469: Tamalpais-----	50	Fair		Poor		Poor	
		Droughty	0.13	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Too acid	0.95			Too clayey	0.70
Barnabe variant----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Slope	0.00
459471: Tocaloma-----	40	Fair		Poor		Poor	
		Droughty	0.39	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Too acid	0.95				
McMullin-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
459472: Tocaloma-----	40	Fair		Poor		Poor	
		Droughty	0.39	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Too acid	0.95				

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459472: McMullin-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
459473: Tocaloma-----	30	Fair		Poor		Poor	
		Droughty	0.39	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.08	Slope	0.00
		Too acid	0.95				
McMullin-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
Urban land-----	25	Not rated		Not rated		Not rated	
459474: Tocaloma-----	40	Fair		Poor		Poor	
		Droughty	0.39	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Too acid	0.95				
McMullin-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
Urban land-----	20	Not rated		Not rated		Not rated	
459475: Tocaloma-----	35	Fair		Poor		Poor	
		Droughty	0.39	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.08	Slope	0.00
		Too acid	0.95				
Saurin-----	30	Fair		Poor		Poor	
		Depth to bedrock	0.79	Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.88	Slope	0.08	Too clayey	0.63
		Water erosion	0.99	Low strength	0.22	Depth to bedrock	0.79
459476: Tocaloma-----	40	Fair		Poor		Poor	
		Droughty	0.39	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Too acid	0.95				
Saurin-----	30	Fair		Poor		Poor	
		Depth to bedrock	0.79	Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.88	Slope	0.00	Too clayey	0.63
		Low content of organic matter	0.88	Low strength	0.22	Depth to bedrock	0.79

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459477: Tocaloma-----	40	Fair Droughty Low content of organic matter Too acid	0.39 0.88 0.95	Poor Depth to bedrock Slope	0.00 0.00	Poor Rock fragments Slope	0.00 0.00
Saurin-----	30	Fair Depth to bedrock Too clayey Water erosion	0.79 0.88 0.99	Poor Depth to bedrock Slope Low strength	0.00 0.00 0.22	Poor Slope Too clayey Depth to bedrock	0.00 0.63 0.79
459481: Tomales-----	85	Poor Too clayey Low content of organic matter Too acid	0.00 0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.00 0.73	Poor Slope Too clayey Too acid	0.00 0.00 0.88
459489: Tomales-----	50	Poor Too clayey Low content of organic matter Too acid	0.00 0.12 0.50	Poor Slope Low strength Shrink-swell	0.00 0.00 0.73	Poor Slope Too clayey Too acid	0.00 0.00 0.88
Steinbeck-----	30	Fair Too acid	0.95	Poor Slope Depth to bedrock	0.00 0.39	Poor Slope	0.00
459490: Tomales-----	50	Poor Too clayey Low content of organic matter Too acid	0.00 0.12 0.50	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.29 0.73	Poor Too clayey Slope Too acid	0.00 0.84 0.88
Steinbeck-----	30	Fair Too acid	0.95	Fair Depth to bedrock	0.39	Fair Slope	0.84
459494: Urban land-----	70	Not rated		Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated		Not rated	
459495: Xerorthents-----	100	Not rated		Not rated		Not rated	
459497: Yorkville-----	85	Poor Too clayey Low content of organic matter	0.00 0.88	Poor Low strength Shrink-swell Depth to bedrock	0.00 0.18 0.68	Poor Too clayey Slope	0.00 0.37
459498: Yorkville-----	85	Poor Too clayey Low content of organic matter	0.00 0.88	Poor Low strength Slope Shrink-swell	0.00 0.08 0.18	Poor Slope Too clayey	0.00 0.00

Soil Survey of Golden Gate National Recreation Area, California

Table 12.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459499: Yorkville-----	85	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.12		
459500: Yorkville-----	60	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.18	Slope	0.37
				Depth to bedrock	0.68		
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459501: Yorkville-----	60	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.08	Too clayey	0.00
				Shrink-swell	0.18		
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated		Not rated	

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Table 13.—Ponds and Embankments

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455964: Alambique-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.11	Very limited Piping Thin layer	1.00 0.86	Very limited Depth to water	1.00
455965: Alambique-----	45	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.11	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00
McGarvey-----	35	Very limited Slope Depth to bedrock	1.00 0.02	Somewhat limited Thin layer	0.61	Very limited Depth to water	1.00
455966: Barnabe-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.75	Very limited Depth to water	1.00
Candlestick-----	35	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Very limited Piping Thin layer	1.00 0.98	Very limited Depth to water	1.00
455967: Barnabe-----	40	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.75	Very limited Depth to water	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
455970: Candlestick-----	45	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Very limited Piping Thin layer	1.00 0.98	Very limited Depth to water	1.00
Barnabe-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.75	Very limited Depth to water	1.00
455971: Candlestick-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Very limited Piping Thin layer	1.00 0.98	Very limited Depth to water	1.00
Kron-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455971: Buriburi-----	20	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.70	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00
455972: Candlestick variant-	85	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping	0.87	Very limited Depth to water	1.00
455973: Candlestick variant-	85	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping	0.87	Very limited Depth to water	1.00
455974: Fagan-----	85	Very limited Slope Seepage	1.00 0.03	Somewhat limited Thin layer	0.34	Very limited Depth to water	1.00
455976: Los Gatos-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Very limited Piping Thin layer	1.00 0.66	Very limited Depth to water	1.00
455977: Maymen-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer	1.00	Very limited Depth to water	1.00
455980: Obispo-----	85	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Hard to pack	1.00 0.28	Very limited Depth to water	1.00
455981: Obispo-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Hard to pack	1.00 0.28	Very limited Depth to water	1.00
455982: Orthents-----	85	Not rated		Not rated		Not rated	
455983: Orthents-----	85	Not rated		Not rated		Not rated	
455984: Orthents-----	55	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
455985: Orthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455986:							
Pits-----	50	Not rated		Not rated		Not rated	
Dumps-----	50	Not rated		Not rated		Not rated	
455988:							
Rock outcrop-----	45	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455989:							
Scarper-----	40	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.26	Somewhat limited Thin layer Seepage	0.96 0.75	Very limited Depth to water	1.00
Miramar-----	35	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.13	Very limited Piping Thin layer	1.00 0.88	Very limited Depth to water	1.00
455990:							
Sirdrak-----	85	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
455991:							
Typic Argiustolls---	50	Very limited Slope	1.00	Somewhat limited Piping	0.74	Very limited Depth to water	1.00
Urban land-----	30	Not rated		Not rated		Not rated	
455992:							
Urban land-----	85	Not rated		Not rated		Not rated	
455993:							
Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	45	Not rated		Not rated		Not rated	
455994:							
Urban land-----	50	Not rated		Not rated		Not rated	
Orthents-----	40	Not rated		Not rated		Not rated	
455995:							
Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	30	Not rated		Not rated		Not rated	
455996:							
Urban land-----	65	Not rated		Not rated		Not rated	
Orthents-----	25	Not rated		Not rated		Not rated	
455997:							
Urban land-----	45	Not rated		Not rated		Not rated	
Sirdrak-----	35	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
455998: Zeni-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.95 0.70	Somewhat limited Thin layer	0.95	Very limited Depth to water	1.00
Zeni variant-----	35	Very limited Slope Depth to bedrock Seepage	1.00 0.52 0.03	Somewhat limited Thin layer	0.52	Very limited Depth to water	1.00
456000: Beaches-----	100	Not rated		Not rated		Not rated	
456001: Water-----	100	Not rated		Not rated		Not rated	
456330: Botella-----	85	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping	0.86	Very limited Depth to water	1.00
456331: Butano-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer	0.66	Very limited Depth to water	1.00
456344: Coastal beaches-----	85	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage Salinity	1.00 1.00 0.12	Very limited Unstable excavation walls Salinity and saturated zone	1.00 0.50
456364: Denison-----	85	Somewhat limited Seepage	0.03	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Unstable excavation walls	0.97 0.10
456365: Denison-----	85	Somewhat limited Seepage	0.03	Not limited		Very limited Depth to water	1.00
456367: Denison-----	85	Somewhat limited Slope Seepage	0.08 0.03	Somewhat limited Piping	0.02	Very limited Depth to water	1.00
456368: Denison-----	85	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping	0.02	Very limited Depth to water	1.00
456376: Elkhorn-----	85	Very limited Seepage Slope	1.00 0.08	Not limited		Very limited Depth to water	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456377: Elkhorn-----	85	Very limited Seepage Slope	1.00 1.00	Not limited		Very limited Depth to water	1.00
456379: Elkhorn-----	85	Very limited Seepage Slope	1.00 1.00	Not limited		Very limited Depth to water	1.00
456382: Farallone-----	85	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
456383: Farallone-----	85	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
456384: Farallone-----	85	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
456385: Farallone-----	85	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
456386: Farallone-----	85	Very limited Seepage Slope	1.00 0.92	Not limited		Very limited Depth to water	1.00
456387: Farallone-----	85	Very limited Seepage Slope	1.00 1.00	Not limited		Very limited Depth to water	1.00
456388: Farallone-----	85	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
456390: Farallone-----	85	Very limited Seepage Slope	1.00 1.00	Not limited		Very limited Depth to water	1.00
456394: Gazos-----	85	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.03	Somewhat limited Piping Thin layer	0.96 0.96	Very limited Depth to water	1.00
456397: Gazos-----	85	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.03	Somewhat limited Piping Thin layer	0.96 0.96	Very limited Depth to water	1.00
456398: Gazos-----	85	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.03	Somewhat limited Piping Thin layer	0.96 0.96	Very limited Depth to water	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456399:							
Gazos (dark phase)---	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Piping	0.97		
		Seepage	0.03				
Calera-----	20	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.87	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
		Seepage	0.70				
456400:							
Gazos (dark phase)---	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Piping	0.97		
		Seepage	0.03				
Calera-----	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.87	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
		Seepage	0.70				
456401:							
Gazos (dark phase)---	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Piping	0.97		
		Seepage	0.03				
Calera-----	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.87	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
		Seepage	0.70				
456403:							
Gazos (dark phase)---	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Piping	0.97		
		Seepage	0.03				
Sweeney-----	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.11	Depth to water	1.00
		Seepage	0.70				
456404:							
Gazos-----	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.91	Piping	0.99	Depth to water	1.00
		Slope	0.68	Thin layer	0.91		
		Seepage	0.03				
Lobitos-----	40	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.68	Thin layer	0.56		
		Depth to bedrock	0.56				
456405:							
Gazos-----	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Piping	0.97		
		Seepage	0.03				

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456405: Lobitos-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.74 0.53	Very limited Piping Thin layer	1.00 0.74	Very limited Depth to water	1.00
456406: Gazos-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.03	Somewhat limited Thin layer Piping	0.98 0.97	Very limited Depth to water	1.00
Lobitos-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.74 0.53	Very limited Piping Thin layer	1.00 0.74	Very limited Depth to water	1.00
456412: Gullied land (alluvial soil material)-----	85	Not rated		Not rated		Not rated	
456414: Gullied land (Tierra and Watsonville soil materials)----	85	Not rated		Not rated		Not rated	
456416: Hugo-----	40	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.26	Very limited Depth to water	1.00
Josephine-----	40	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.88 0.19	Very limited Depth to water	1.00
456418: Hugo-----	40	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.26	Very limited Depth to water	1.00
Josephine-----	40	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.88 0.19	Very limited Depth to water	1.00
456420: Hugo-----	40	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.26	Very limited Depth to water	1.00
Josephine-----	40	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.88 0.19	Very limited Depth to water	1.00
456423: Hugo-----	40	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.01	Somewhat limited Thin layer	0.42	Very limited Depth to water	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456423: Josephine-----	40	Very limited Slope Seepage	 1.00 0.70	Somewhat limited Piping Thin layer	 0.85 0.34	Very limited Depth to water	 1.00
456444: Lobitos-----	85	Very limited Slope Depth to bedrock Seepage	 1.00 0.74 0.03	Very limited Piping Thin layer	 1.00 0.74	Very limited Depth to water	 1.00
456445: Lobitos-----	85	Very limited Slope Depth to bedrock Seepage	 1.00 0.74 0.03	Very limited Piping Thin layer	 1.00 0.74	Very limited Depth to water	 1.00
456446: Lobitos-----	85	Very limited Slope Depth to bedrock Seepage	 1.00 0.74 0.03	Very limited Piping Thin layer	 1.00 0.74	Very limited Depth to water	 1.00
456460: Mixed alluvial land-	90	Very limited Seepage	 1.00	Not limited		Very limited Depth to water	 1.00
456464: Miramar-----	85	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.02	Somewhat limited Thin layer	 0.61	Very limited Depth to water	 1.00
456465: Miramar-----	85	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.02	Somewhat limited Thin layer	 0.61	Very limited Depth to water	 1.00
456466: Miramar-----	85	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.02	Somewhat limited Thin layer	 0.61	Very limited Depth to water	 1.00
456467: Miramar-----	85	Very limited Slope Depth to bedrock Seepage	 1.00 0.06 0.03	Somewhat limited Thin layer	 0.77	Very limited Depth to water	 1.00
456468: Miramar-----	85	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.02	Somewhat limited Thin layer	 0.61	Very limited Depth to water	 1.00
456469: Montara-----	85	Very limited Slope Depth to bedrock	 1.00 1.00	Very limited Thin layer	 1.00	Very limited Depth to water	 1.00

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456475: Rough broken land---	50	Not rated		Not rated		Not rated	
Lithic Xerorthents--	35	Not rated		Not rated		Not rated	
456485: Stabilized dune land	90	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
456486: Sheridan-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.02	Somewhat limited Thin layer	0.56	Very limited Depth to water	1.00
456487: Sheridan-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.02	Somewhat limited Thin layer	0.56	Very limited Depth to water	1.00
456488: Sheridan-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.02	Somewhat limited Thin layer	0.56	Very limited Depth to water	1.00
456494: Soquel-----	85	Somewhat limited Seepage Slope	0.70 0.32	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Unstable excavation walls	0.30 0.10
456506: Sweeney-----	85	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.11	Very limited Depth to water	1.00
456511: Sweeney-----	75	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.11	Very limited Depth to water	1.00
456517: Tierra-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.30	Very limited Depth to water	1.00
456518: Tierra-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.30	Very limited Depth to water	1.00
456519: Tierra-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.25	Very limited Depth to water	1.00
456520: Tierra-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.30	Very limited Depth to water	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459393: Ballard-----	85	Somewhat limited Seepage Slope	0.70 0.68	Not limited		Very limited Depth to water	1.00
459395: Barnabe-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459396: Beaches-----	100	Not rated		Not rated		Not rated	
459397: Blucher-----	40	Somewhat limited Seepage Slope	0.70 0.08	Very limited Depth to saturated zone Piping	1.00 0.97	Somewhat limited Slow refill Unstable excavation walls	0.30 0.10
Cole-----	30	Somewhat limited Slope	0.08	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Unstable excavation walls	0.97 0.10
459398: Bonnydoon-----	85	Very limited Slope Depth to bedrock	1.00 0.66	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459399: Bonnydoon-----	85	Very limited Slope Depth to bedrock	1.00 0.66	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459402: Centissima-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer	0.77	Very limited Depth to water	1.00
Barnabe-----	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459403: Centissima-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer	0.77	Very limited Depth to water	1.00
Barnabe-----	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459404: Centissima-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer	0.77	Very limited Depth to water	1.00
Barnabe-----	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459406: Cortina-----	85	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
459407: Cronkhite-----	50	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.53 0.26	Very limited Depth to water	1.00
Barnabe-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459408: Cronkhite-----	50	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.53 0.26	Very limited Depth to water	1.00
Barnabe-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459409: Cronkhite-----	40	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.53 0.26	Very limited Depth to water	1.00
Barnabe-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459410: Cronkhite-----	40	Very limited Slope Seepage	1.00 0.03	Somewhat limited Piping Thin layer	0.53 0.26	Very limited Depth to water	1.00
Barnabe-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459411: Dipsea-----	50	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.16	Very limited Depth to water	1.00
Barnabe-----	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459412: Dipsea-----	50	Very limited Slope Seepage	1.00 0.70	Somewhat limited Thin layer	0.16	Very limited Depth to water	1.00
Barnabe-----	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.20	Very limited Depth to water	1.00
459414: Dune land-----	95	Not rated		Not rated		Not rated	

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459415: Felton variant-----	40	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping Thin layer	0.66 0.19	Very limited Depth to water	1.00
Soulajule-----	40	Very limited Slope Depth to bedrock	1.00 0.17	Somewhat limited Thin layer Piping	0.91 0.02	Very limited Depth to water	1.00
459416: Felton variant-----	40	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping Thin layer	0.66 0.19	Very limited Depth to water	1.00
Soulajule-----	40	Very limited Slope Depth to bedrock	1.00 0.17	Somewhat limited Thin layer Piping	0.91 0.02	Very limited Depth to water	1.00
459417: Felton variant-----	50	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping Thin layer	0.66 0.19	Very limited Depth to water	1.00
Soulajule-----	40	Very limited Slope Depth to bedrock	1.00 0.17	Somewhat limited Thin layer Piping	0.91 0.02	Very limited Depth to water	1.00
459418: Felton variant-----	50	Very limited Slope Seepage	1.00 0.70	Somewhat limited Piping Thin layer	0.66 0.19	Very limited Depth to water	1.00
Soulajule-----	40	Very limited Slope Depth to bedrock	1.00 0.17	Somewhat limited Thin layer Piping	0.91 0.02	Very limited Depth to water	1.00
459419: Fluvents-----	100	Not rated		Not rated		Not rated	
459420: Gilroy-----	35	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.03	Somewhat limited Thin layer Piping	0.86 0.82	Very limited Depth to water	1.00
Gilroy variant-----	25	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.26	Very limited Piping Thin layer	1.00 0.26	Very limited Depth to water	1.00
Bonnydoon variant---	20	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
459421: Henneke-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Large stones	1.00 0.79	Very limited Depth to water	1.00

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459422: Humaquepts-----	90	Not limited		Very limited Organic matter content Depth to saturated zone Seepage Hard to pack	1.00 1.00 1.00 0.08	Very limited Slow refill Unstable excavation walls	1.00 0.10
459423: Hydraquents-----	90	Not limited		Not rated		Very limited Salinity and saturated zone Slow refill Unstable excavation walls	1.00 1.00 0.50
459425: Inverness-----	85	Very limited Slope Seepage	1.00 0.70	Very limited Piping	1.00	Very limited Depth to water	1.00
459427: Inverness-----	85	Very limited Slope Seepage	1.00 0.70	Very limited Piping	1.00	Very limited Depth to water	1.00
459432: Los Osos-----	60	Very limited Slope Depth to bedrock	1.00 0.02	Somewhat limited Thin layer Piping	0.56 0.22	Very limited Depth to water	1.00
Bonnydoon-----	25	Very limited Slope Depth to bedrock	1.00 0.66	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459433: Los Osos-----	60	Very limited Slope Depth to bedrock	1.00 0.02	Somewhat limited Thin layer Piping	0.56 0.22	Very limited Depth to water	1.00
Bonnydoon-----	20	Very limited Slope Depth to bedrock	1.00 0.66	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459434: Los Osos-----	60	Very limited Slope Depth to bedrock	1.00 0.11	Somewhat limited Thin layer Piping	0.86 0.28	Very limited Depth to water	1.00
Bonnydoon-----	20	Very limited Slope Depth to bedrock	1.00 0.80	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459436: Los Osos-----	40	Very limited Slope Depth to bedrock	1.00 0.11	Somewhat limited Thin layer Piping	0.86 0.28	Very limited Depth to water	1.00
Urban land-----	30	Not rated		Not rated		Not rated	

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459436: Bonnydoon-----	20	Very limited Slope Depth to bedrock	1.00 0.80	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459437: Maymen-----	50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Maymen variant-----	20	Very limited Slope Depth to bedrock	1.00 0.61	Somewhat limited Thin layer Hard to pack	0.61 0.27	Very limited Depth to water	1.00
459438: Montara-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 0.50	Very limited Depth to water	1.00
459439: Novato-----	90	Not limited		Very limited Depth to saturated zone Salinity Hard to pack	1.00 1.00 0.05	Very limited Slow refill Salinity and saturated zone Unstable excavation walls	1.00 1.00 0.10
459440: Olompali-----	85	Somewhat limited Slope	0.68	Very limited Depth to saturated zone	1.00	Very limited Unstable excavation walls Slow refill	1.00 0.30
459441: Olompali-----	85	Very limited Slope	1.00	Very limited Depth to saturated zone	1.00	Very limited Unstable excavation walls Slow refill	1.00 0.30
459442: Olompali-----	85	Very limited Slope	1.00	Very limited Depth to saturated zone	1.00	Very limited Unstable excavation walls Slow refill	1.00 0.30
459448: Palomarin-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.42	Very limited Piping Thin layer	1.00 0.42	Very limited Depth to water	1.00
Wittenberg-----	30	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.10	Somewhat limited Seepage Thin layer	0.50 0.11	Very limited Depth to water	1.00
459451: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Xerorthents-----	30	Not rated		Not rated		Not rated	

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Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459452: Rodeo-----	90	Very limited Slope Seepage	1.00 0.03	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Unstable excavation walls	0.97 0.10
459453: Saurin-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer Piping	0.77 0.64	Very limited Depth to water	1.00
Bonnydoon-----	30	Very limited Slope Depth to bedrock	1.00 0.66	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459454: Saurin-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer Piping	0.77 0.64	Very limited Depth to water	1.00
Bonnydoon-----	30	Very limited Slope Depth to bedrock	1.00 0.66	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459455: Saurin-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer Piping	0.77 0.64	Very limited Depth to water	1.00
Bonnydoon-----	40	Very limited Slope Depth to bedrock	1.00 0.80	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459456: Saurin-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.06	Somewhat limited Thin layer Piping	0.77 0.64	Very limited Depth to water	1.00
Bonnydoon-----	40	Very limited Slope Depth to bedrock	1.00 0.80	Very limited Thin layer	1.00	Very limited Depth to water	1.00
459463: Sirdrak-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
459467: Tamalpais-----	60	Very limited Slope Depth to bedrock Seepage	1.00 0.52 0.03	Somewhat limited Thin layer	0.52	Very limited Depth to water	1.00
Barnabe variant-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer	1.00	Very limited Depth to water	1.00

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459468:							
Tamalpais-----	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.52	Depth to water	1.00
		Depth to bedrock	0.52				
		Seepage	0.03				
Barnabe variant-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
459469:							
Tamalpais-----	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.52	Depth to water	1.00
		Depth to bedrock	0.52				
		Seepage	0.03				
Barnabe variant-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
459471:							
Tocaloma-----	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
McMullin-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Piping	1.00		
459472:							
Tocaloma-----	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
McMullin-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Piping	1.00		
459473:							
Tocaloma-----	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
McMullin-----	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Piping	1.00		
Urban land-----	25	Not rated		Not rated		Not rated	
459474:							
Tocaloma-----	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
McMullin-----	20	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Piping	1.00		
Urban land-----	20	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459475:							
Tocaloma-----	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
Saurin-----	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70	Piping	0.64		
		Depth to bedrock	0.06				
459476:							
Tocaloma-----	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
Saurin-----	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70	Piping	0.64		
		Depth to bedrock	0.06				
459477:							
Tocaloma-----	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	Depth to water	1.00
		Slope	1.00				
		Depth to bedrock	0.01				
Saurin-----	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70	Piping	0.64		
		Depth to bedrock	0.06				
459481:							
Tomales-----	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.32	Depth to water	1.00
		Seepage	0.70	Thin layer	0.19		
459489:							
Tomales-----	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.32	Depth to water	1.00
		Seepage	0.70	Thin layer	0.19		
Steinbeck-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.16		
459490:							
Tomales-----	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.19	Depth to water	1.00
		Seepage	0.70	Piping	0.15		
Steinbeck-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.16		
459494:							
Urban land-----	70	Not rated		Not rated		Not rated	
Xerorthents-----	20	Not rated		Not rated		Not rated	

Soil Survey of Golden Gate National Recreation Area, California

Table 13.—Ponds and Embankments—Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
459495: Xerorthents-----	100	Not rated		Not rated		Not rated	
459497: Yorkville-----	85	Very limited Slope	1.00	Somewhat limited Thin layer Hard to pack	0.08 0.02	Very limited Depth to water	1.00
459498: Yorkville-----	85	Very limited Slope	1.00	Somewhat limited Thin layer Hard to pack	0.08 0.02	Very limited Depth to water	1.00
459499: Yorkville-----	85	Very limited Slope	1.00	Somewhat limited Thin layer Hard to pack	0.26 0.04	Very limited Depth to water	1.00
459500: Yorkville-----	60	Very limited Slope	1.00	Somewhat limited Thin layer Hard to pack	0.08 0.02	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459501: Yorkville-----	60	Very limited Slope	1.00	Somewhat limited Thin layer Hard to pack	0.08 0.02	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
459502: Water-----	100	Not rated		Not rated		Not rated	
1412772: Water-----	100	Not rated		Not rated		Not rated	
1611084: No digital data available-----	100	Not rated		Not rated		Not rated	

Table 14.—Engineering Properties

(Absence of an entry indicates that data were not estimated)

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
455964:												
Alambique-----	0-6	Sandy loam	SM	A-4	0	0	80-100	75-95	50-75	35-50	20-30	NP-5
	6-30	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	60-80	50-60	25-35	5-10
	30-34	Weathered bedrock			---	---	---	---	---	---	---	---
455965:												
Alambique-----	0-12	Gravelly loam	SC-SM, SM, GC-GM, GM	A-4	0	0	55-80	50-75	45-65	35-50	25-35	5-10
	12-30	Gravelly loam	SC-SM, SM, GC-GM, GM	A-4	0	0	55-80	50-75	45-65	35-50	25-35	5-10
	30-34	Weathered bedrock			---	---	---	---	---	---	---	---
McGarvey-----	0-7	Loam	ML, CL-ML	A-4	0	0	85-95	80-90	65-75	50-70	25-35	5-10
	7-14	Clay loam	CL	A-6	0	0	90-100	90-100	75-85	65-80	30-40	10-20
	14-37	Clay loam, clay	CL, CH	A-7	0	0	90-100	90-100	85-95	75-85	40-55	20-30
	37-41	Weathered bedrock			---	---	---	---	---	---	---	---
455966:												
Barnabe-----	0-7	Very gravelly sandy loam	GM, GC-GM	A-2, A-1	0	0	45-55	35-50	25-35	15-25	20-30	NP-10
	7-12	Very gravelly loam, very gravelly sandy loam	GM, GC-GM	A-2	0	0	45-55	35-50	25-45	15-30	25-35	5-10
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
Candlestick-----	0-2	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-75	35-50	20-30	NP-5
	2-20	Loam	ML	A-4	0	0	90-100	85-100	75-85	50-60	25-35	NP-10
	20-24	Sandy clay loam, clay loam	SC, CL	A-6	0	0	80-95	75-95	70-85	35-60	30-40	10-20
	24-28	Unweathered bedrock		A-6	---	---	---	---	---	---	---	---
455967:												
Barnabe-----	0-7	Very gravelly sandy loam	GM, GC-GM	A-2, A-1	0	0	45-55	35-50	25-35	15-25	20-30	NP-10
	7-12	Very gravelly loam, very gravelly sandy loam	GM, GC-GM	A-2	0	0	45-55	35-50	25-45	15-30	25-35	5-10
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
455970:												
Candlestick-----	0-2	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-75	35-50	20-30	NP-5
	2-20	Loam	ML	A-4	0	0	90-100	85-100	75-85	50-60	25-35	NP-10
	20-24	Sandy clay loam, clay loam	SC, CL	A-6	0	0	80-95	75-95	70-85	35-60	30-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 in	3-10 in	4	10	40	200		
	In				Pct	Pct					Pct	
455970:												
Barnabe-----	0-7	Very gravelly sandy loam	GM, GC-GM	A-2, A-1	0	0	45-55	35-50	25-35	15-25	20-30	NP-10
	7-12	Very gravelly loam, very gravelly sandy loam	GM, GC-GM	A-2	0	0	45-55	35-50	25-45	15-30	25-35	5-10
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
455971:												
Candlestick-----	0-2	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-75	35-50	20-30	NP-5
	2-20	Loam	ML	A-4	0	0	90-100	85-100	75-85	50-60	25-35	NP-10
	20-24	Sandy clay loam, clay loam	SC, CL	A-6	0	0	80-95	75-95	70-85	35-60	30-40	10-20
	24-28	Unweathered bedrock	GC, CL	A-6	---	---	---	---	---	---	---	---
Kron-----	0-3	Sandy loam	SM	A-4	0	0	90-100	85-100	50-75	35-50	20-30	NP-5
	3-14	Loam, very fine sandy loam	ML	A-4	0	0	90-100	85-100	65-85	50-65	25-35	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Buriburi-----	0-30	Gravelly loam	SM, GM	A-4	0	0	55-80	50-75	45-70	35-50	25-35	NP-10
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---
455972:												
Candlestick variant-----	0-21	Loam	ML, CL-ML	A-4	0	0	90-100	85-100	75-95	50-75	25-35	5-10
	21-65	Clay loam	CL	A-6	0	0	90-100	85-100	80-90	65-80	30-40	10-20
455973:												
Candlestick variant-----	0-21	Loam	ML, CL-ML	A-4	0	0	90-100	85-100	75-95	50-75	25-35	5-10
	21-65	Clay loam	CL	A-6	0	0	90-100	85-100	80-90	65-80	30-40	10-20
455974:												
Fagan-----	0-5	Loam	CL-ML, CL	A-6, A-4	0	0	80-100	75-100	70-95	60-80	25-35	5-15
	5-26	Clay loam	CL	A-7, A-6	0	0	80-100	75-100	70-95	65-85	35-45	15-25
	26-43	Clay, silty clay	CL, CH	A-7	0	0	80-100	75-100	75-100	70-95	40-60	20-35
	43-47	Weathered bedrock			---	---	---	---	---	---	---	---
455976:												
Los Gatos-----	0-22	Loam	ML, CL-ML	A-4	0	0-5	90-100	80-95	75-85	50-65	25-35	5-10
	22-36	Sandy clay loam	CL	A-6	0	0-5	75-95	75-95	60-80	50-65	30-40	10-20
	36-40	Unweathered bedrock			---	---	---	---	---	---	---	---
455977:												
Maymen-----	0-12	Gravelly loam	SM, GM	A-4, A-2	0	0-5	60-80	50-75	30-60	25-50	20-35	NP-10
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 in	3-10 in	4	10	40	200		
	In				Pct	Pct					Pct	
455980:												
Obispo-----	0-12	Clay	CL, CH	A-7	0	0-5	90-100	75-100	70-95	65-90	45-60	20-35
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
455981:												
Obispo-----	0-12	Clay	CL, CH	A-7	0	0-5	90-100	75-100	70-95	65-90	45-60	20-35
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
455989:												
Scarper-----	0-16	Gravelly coarse sandy loam	SM	A-2, A-1	0	0	75-95	60-75	40-50	15-30	---	NP
	16-25	Gravelly coarse sandy loam	SM	A-2, A-1	0	0	75-95	60-75	40-50	15-30	---	NP
	25-29	Weathered bedrock			---	---	---	---	---	---	---	---
Miramar-----	0-15	Loam	ML, CL-ML	A-4	0	0	90-100	85-100	80-90	55-70	25-35	5-10
	15-24	Clay loam, sandy clay loam	CL	A-6	0	0	90-100	85-100	85-95	60-75	30-40	10-20
	24-29	Loam	ML, CL-ML	A-4	0	0	90-100	85-100	80-90	55-70	25-35	5-10
	29-33	Weathered bedrock			---	---	---	---	---	---	---	---
455990:												
Sirdrak-----	0-17	Sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-25	---	NP
	17-60	Sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-25	---	NP
455991:												
Typic Argiustolls----	0-11	Sandy loam, sandy clay loam	ML, CL-ML	A-4	0	0	95-100	90-100	85-95	50-75	25-35	5-10
	11-37	Sandy clay loam, clay loam, loam	SC, CL	A-6	0	0	90-100	85-100	75-95	40-75	30-40	10-20
	37-60	Sandy clay loam, clay loam	SC, CL	A-6	0	0	90-100	85-100	75-95	40-65	30-40	10-20
455997:												
Sirdrak-----	0-17	Sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-25	---	NP
	17-60	Sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-25	---	NP
455998:												
Zeni-----	0-9	Gravelly loam	SC-SM, SM, GC-GM, GM	A-4, A-2	0	0-5	55-80	50-75	40-65	30-50	25-35	5-10
	9-26	Gravelly clay loam, gravelly sandy clay loam	SC, GC	A-6	0	0-5	55-80	50-75	45-70	35-50	30-40	10-20
	26-30	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 in	3-10 in	4	10	40	200		
	In				Pct	Pct					Pct	
455998: Zeni variant----	0-13	Gravelly loam	SC-SM, SM, GC-GM, GM	A-4	0	0-5	65-80	60-75	55-70	35-50	25-35	5-10
	13-31	Very gravelly clay loam	GC	A-6	0	5-20	55-65	50-60	45-55	35-50	30-40	10-15
	31-39	Gravelly clay loam	CL	A-6	0	0-5	70-80	65-75	60-70	50-65	30-40	10-15
	39-43	Unweathered bedrock			---	0-5	70-80	65-75	60-70	50-65	---	---
456330: Botella-----	0-28	Loam	CL-ML, CL	A-6, A-4	0	0	80-100	75-100	65-95	50-70	25-35	5-15
	28-60	Silty clay loam, clay loam	CL	A-7, A-6	0	0	90-100	85-100	70-95	60-85	30-45	10-20
456331: Butano-----	0-23	Channery loam	SM, GM	A-4	0	0-5	55-80	50-75	45-65	35-50	25-35	NP-10
	23-28	Channery clay loam	GC, CL	A-6	0	0	55-80	50-75	45-70	35-55	30-40	10-20
	28-36	Channery silty clay loam	GC, CL	A-6	0	0-5	55-80	50-75	45-75	40-70	30-40	10-20
	36-40	Weathered bedrock			---	---	---	---	---	---	---	---
456364: Denison-----	0-10	Clay loam	CL	A-7, A-6	0	0	85-100	80-100	75-95	65-85	30-45	10-20
	10-45	Clay	CL, CH	A-7	0	0	85-100	80-100	80-100	75-95	45-65	25-35
	45-61	Clay loam, silty clay loam	CL	A-7, A-6	0	0	85-100	80-100	75-95	65-85	30-45	10-20
	61-70	Loam	CL-ML, CL	A-6, A-4	0	0	85-100	80-100	65-85	50-60	25-35	5-15
456365: Denison-----	0-10	Coarse sandy loam	SM	A-4	0	0	95-100	90-100	60-70	35-50	20-30	NP-5
	10-20	Clay loam	CL	A-7, A-6	0	0	85-100	80-100	75-95	65-85	30-45	10-20
	20-55	Clay	CL, CH	A-7	0	0	85-100	80-100	80-100	75-95	45-65	25-35
	55-71	Clay loam, silty clay loam	CL	A-7, A-6	0	0	85-100	80-100	75-95	65-85	30-45	10-20
456367: Denison-----	0-15	Loam	ML, CL-ML	A-4	0	0	85-100	80-100	75-95	50-65	25-35	5-10
	15-45	Clay	CL, CH	A-7	0	0	85-100	80-100	80-100	75-95	45-65	25-35
	45-60	Clay loam, silty clay loam	CL	A-7, A-6	0	0	85-100	80-100	75-95	65-85	30-45	10-20
	60-70	Loam	CL-ML, CL	A-6, A-4	0	0	85-100	80-100	65-85	50-60	25-35	5-15
456368: Denison-----	0-15	Loam	ML, CL-ML	A-4	0	0	85-100	80-100	75-95	50-65	25-35	5-10
	15-45	Clay	CL, CH	A-7	0	0	85-100	80-100	80-100	75-95	45-65	25-35
	45-60	Clay loam, silty clay loam	CL	A-7, A-6	0	0	85-100	80-100	75-95	65-85	30-45	10-20
	60-70	Loam	CL-ML, CL	A-6, A-4	0	0	85-100	80-100	65-85	50-60	25-35	5-15

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
456376:												
Elkhorn-----	0-25	Sandy loam	SM	A-4, A-2	0	0	90-100	75-100	50-80	25-50	20-30	NP-5
	25-60	Sandy clay loam	SC	A-6	0	0	90-100	75-100	75-90	35-50	30-40	10-20
456377:												
Elkhorn-----	0-25	Sandy loam	SM	A-4, A-2	0	0	90-100	75-100	50-80	25-50	20-30	NP-5
	25-60	Sandy clay loam	SC	A-6	0	0	90-100	75-100	75-90	35-50	30-40	10-20
456379:												
Elkhorn-----	0-20	Sandy loam	SM	A-4, A-2	0	0	90-100	75-100	50-80	25-50	20-30	NP-5
	20-60	Sandy clay loam	SC	A-6	0	0	90-100	75-100	75-90	35-50	30-40	10-20
456382:												
Farallone-----	0-20	Loam	ML	A-4	0	0	85-100	75-100	65-95	50-60	25-35	NP-10
	20-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5
456383:												
Farallone-----	0-20	Loam	ML	A-4	0	0	85-100	75-100	65-95	50-60	25-35	NP-10
	20-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5
456384:												
Farallone-----	0-20	Coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	55-70	25-40	20-30	NP-5
	20-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5
456385:												
Farallone-----	0-20	Coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	55-70	25-40	20-30	NP-5
	20-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5
456386:												
Farallone-----	0-15	Coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	55-70	25-40	20-30	NP-5
	15-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
456387: Farallone-----	0-15	Coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	55-70	25-40	20-30	NP-5
	15-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5
456388: Farallone-----	0-20	Coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	55-70	25-40	20-30	NP-5
	20-30	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	30-60	Gravelly coarse sand	SW-SM	A-1	0	0	85-95	35-75	35-50	5-10	0-0	NP
456390: Farallone-----	0-15	Loamy coarse sand	SM	A-2, A-1	0	0	85-95	75-95	45-60	15-30	0-0	NP
	15-48	Sandy loam, coarse sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-50	20-30	NP-5
	48-60	Stratified coarse sandy loam to sandy loam	SM	A-4, A-2	0	0	85-95	75-95	50-70	25-40	20-30	NP-5
456394: Gazos-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-25	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
456397: Gazos-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-25	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
456398: Gazos-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-25	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
456399: Gazos (dark phase)-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-24	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Calera-----	0-10	Loam	ML, CL-ML	A-4	0	0	85-100	80-100	65-85	50-60	25-35	5-10
	10-30	Clay loam	CL	A-6	0	0	80-100	75-100	70-95	60-80	30-40	10-20
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---

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Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
456400: Gazos (dark phase)-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-24	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Calera-----	0-10	Loam	ML, CL-ML	A-4	0	0	85-100	80-100	65-85	50-60	25-35	5-10
	10-30	Clay loam	CL	A-6	0	0	80-100	75-100	70-95	60-80	30-40	10-20
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---
456401: Gazos (dark phase)-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-24	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Calera-----	0-10	Loam	ML, CL-ML	A-4	0	0	85-100	80-100	65-85	50-60	25-35	5-10
	10-30	Clay loam	CL	A-6	0	0	80-100	75-100	70-95	60-80	30-40	10-20
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---
456403: Gazos (dark phase)-----	0-12	Loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-24	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Sweeney-----	0-7	Loam	CL-ML, CL	A-6, A-4	0	0-5	90-100	85-95	70-90	50-70	25-35	5-15
	7-22	Clay loam, sandy clay loam, loam	CL-ML, CL	A-6, A-4	0	0-5	90-100	85-95	70-90	35-50	25-40	5-20
	22-50	Fine sandy loam	SC-SM, SC	A-4	0	0-5	90-100	85-95	60-80	40-55	20-30	NP-10
	50-54	Weathered bedrock			---	---	---	---	---	---	---	---
456404: Gazos-----	0-16	Silt loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	16-28	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Lobitos-----	0-22	Silt loam	ML	A-4	0	0	80-100	75-95	65-90	50-70	25-35	NP-10
	22-33	Channery clay loam, channery silty clay loam	SC, GC, CL	A-6	0	0	60-80	50-75	45-70	35-65	30-40	10-20
	33-38	Channery loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	50-75	45-70	35-50	25-35	5-15
	38-42	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	In				Pct	Pct					Pct	
456405:												
Gazos-----	0-12	Silt loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-24	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Lobitos-----	0-18	Silt loam	ML	A-4	0	0	80-100	75-95	65-90	50-70	25-35	NP-10
	18-29	Channery clay loam, channery silty clay loam	SC, GC, CL	A-6	0	0	60-80	50-75	45-70	35-65	30-40	10-20
	29-34	Channery loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	50-75	45-70	35-50	25-35	5-15
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---
456406:												
Gazos-----	0-12	Silt loam	CL-ML	A-4	0	0	90-100	80-95	70-85	50-70	20-30	5-10
	12-24	Silt loam, silty clay loam	CL	A-6	0	0	90-100	80-95	70-85	50-70	25-40	10-20
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Lobitos-----	0-18	Silt loam	ML	A-4	0	0	80-100	75-95	65-90	50-70	25-35	NP-10
	18-29	Channery clay loam, channery silty clay loam	SC, GC, CL	A-6	0	0	60-80	50-75	45-70	35-65	30-40	10-20
	29-34	Channery loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	50-75	45-70	35-50	25-35	5-15
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---
456416:												
Hugo-----	0-8	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	60-75	50-60	25-35	5-10
	8-45	Gravelly loam	SC, GC	A-6	0	0-5	60-80	50-75	40-65	35-50	25-40	10-15
	45-49	Weathered bedrock			---	---	---	---	---	---	---	---
Josephine-----	0-12	Loam	ML	A-4	0	0	80-95	75-90	65-85	55-70	25-40	NP-10
	12-47	Clay loam	ML	A-7, A-6	0	0	80-95	75-90	70-90	60-85	35-50	10-20
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
456418:												
Hugo-----	0-8	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	60-75	50-60	25-35	5-10
	8-45	Gravelly loam	SC, GC	A-6	0	0-5	60-80	50-75	40-65	35-50	25-40	10-15
	45-49	Weathered bedrock			---	---	---	---	---	---	---	---
Josephine-----	0-12	Loam	ML	A-4	0	0	80-95	75-90	65-85	55-70	25-40	NP-10
	12-47	Clay loam	ML	A-7, A-6	0	0	80-95	75-90	70-90	60-85	35-50	10-20
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
456420:												
Hugo-----	0-8	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	60-75	50-60	25-35	5-10
	8-45	Gravelly loam	SC, GC	A-6	0	0-5	60-80	50-75	40-65	35-50	25-40	10-15
	45-49	Weathered bedrock			---	---	---	---	---	---	---	---
Josephine-----	0-12	Loam	ML	A-4	0	0	80-95	75-90	65-85	55-70	25-40	NP-10
	12-47	Clay loam	ML	A-7, A-6	0	0	80-95	75-90	70-90	60-85	35-50	10-20
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
456423:												
Hugo-----	0-4	Sandy loam	SM	A-4	0	0	80-100	75-95	60-75	35-50	20-30	NP-5
	4-41	Gravelly sandy loam	SC-SM, GC-GM	A-4, A-2	0	0-5	60-80	50-75	40-65	25-40	20-30	5-10
	41-45	Weathered bedrock			---	---	---	---	---	---	---	---
Josephine-----	0-8	Sandy loam	SM	A-4	0	0	80-95	75-90	65-85	35-50	20-30	NP-5
	8-43	Loam, sandy clay loam	SC, CL	A-6	0	0	80-95	75-90	70-90	40-75	30-40	10-20
	43-47	Weathered bedrock			---	---	---	---	---	---	---	---
456444:												
Lobitos-----	0-18	Loam	ML	A-4	0	0	80-100	75-95	65-90	50-70	25-35	NP-10
	18-29	Channery clay loam, channery silty clay loam	SC, GC, CL	A-6	0	0	60-80	50-75	45-70	35-65	30-40	10-20
	29-34	Channery loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	50-75	45-70	35-50	25-35	5-15
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---
456445:												
Lobitos-----	0-18	Loam	ML	A-4	0	0	80-100	75-95	65-90	50-70	25-35	NP-10
	18-29	Channery clay loam, channery silty clay loam	SC, GC, CL	A-6	0	0	60-80	50-75	45-70	35-65	30-40	10-20
	29-34	Channery loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	50-75	45-70	35-50	25-35	5-15
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---
456446:												
Lobitos-----	0-18	Loam	ML	A-4	0	0	80-100	75-95	65-90	50-70	25-35	NP-10
	18-29	Channery clay loam, channery silty clay loam	SC, GC, CL	A-6	0	0	60-80	50-75	45-70	35-65	30-40	10-20
	29-34	Channery loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	50-75	45-70	35-50	25-35	5-15
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
456464: Miramar-----	0-22	Coarse sandy loam	SM	A-4, A-2	0	0	90-100	85-100	50-65	25-40	20-30	NP-5
	22-37	Sandy clay loam	SC	A-6	0	0	90-100	85-100	85-95	35-50	30-40	10-20
	37-41	Weathered bedrock			---	---	---	---	---	---	---	---
456465: Miramar-----	0-22	Coarse sandy loam	SM	A-4, A-2	0	0	90-100	85-100	50-65	25-40	20-30	NP-5
	22-37	Sandy clay loam	SC	A-6	0	0	90-100	85-100	85-95	35-50	30-40	10-20
	37-41	Weathered bedrock			---	---	---	---	---	---	---	---
456466: Miramar-----	0-22	Coarse sandy loam	SM	A-4, A-2	0	0	90-100	85-100	50-65	25-40	20-30	NP-5
	22-37	Sandy clay loam	SC	A-6	0	0	90-100	85-100	85-95	35-50	30-40	10-20
	37-41	Weathered bedrock			---	---	---	---	---	---	---	---
456467: Miramar-----	0-18	Coarse sandy loam	SM	A-4, A-2	0	0	90-100	85-100	50-65	25-40	20-30	NP-5
	18-33	Sandy clay loam	SC	A-6	0	0	90-100	85-100	85-95	35-50	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
456468: Miramar-----	0-22	Coarse sandy loam	SM	A-4, A-2	0	0	90-100	85-100	50-65	25-40	20-30	NP-5
	22-37	Sandy clay loam	SC	A-6	0	0	90-100	85-100	85-95	35-50	30-40	10-20
	37-41	Weathered bedrock			---	---	---	---	---	---	---	---
456469: Montara-----	0-6	Stony loam	SC, SC-SM, GC, GC-GM	A-6, A-4	5-10	5-15	60-85	50-75	45-70	35-50	25-40	5-15
	6-15	Stony clay loam	GC, CL	A-6	5-10	5-15	60-85	50-75	45-70	40-60	30-40	10-20
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
456486: Sheridan-----	0-5	Gravelly coarse sandy loam	SM	A-2	0	0-10	85-100	75-90	40-65	25-35	20-30	NP-5
	5-38	Gravelly coarse sandy loam, sandy loam	SM	A-2	0	0-10	85-100	75-90	40-65	25-35	20-30	NP-5
	38-42	Weathered bedrock			---	---	---	---	---	---	---	---
456487: Sheridan-----	0-5	Gravelly coarse sandy loam	SM	A-2	0	0-10	85-100	75-90	40-65	25-35	20-30	NP-5
	5-38	Gravelly coarse sandy loam, sandy loam	SM	A-2	0	0-10	85-100	75-90	40-65	25-35	20-30	NP-5
	38-42	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
456488: Sheridan-----	0-5	Gravelly coarse sandy loam	SM	A-2	0	0-10	85-100	75-90	40-65	25-35	20-30	NP-5
	5-38	Gravelly coarse sandy loam, sandy loam	SM	A-2	0	0-10	85-100	75-90	40-65	25-35	20-30	NP-5
	38-42	Weathered bedrock			---	---	---	---	---	---	---	---
456494: Soquel-----	0-30	Loam	CL-ML, CL	A-6, A-4	0	0	100	75-100	65-90	50-75	20-35	5-15
	30-60	Silt loam, loam	CL-ML, CL	A-6, A-4	0	0	100	75-100	65-95	50-75	20-35	5-15
	60-70	Loam	CL-ML, CL	A-6, A-4	0	0	80-100	75-95	55-90	50-70	20-35	5-15
456506: Sweeney-----	0-7	Loam	CL-ML, CL	A-6, A-4	0	0-5	90-100	85-95	70-90	50-70	25-35	5-15
	7-22	Sandy clay loam	SC-SM, SC	A-6, A-4	0	0-5	90-100	85-95	70-90	35-50	25-40	5-20
	22-50	Fine sandy loam	SC-SM, SM, CL-ML, ML	A-4	0	0-5	90-100	85-95	60-80	40-55	20-30	NP-10
	50-54	Weathered bedrock			---	---	---	---	---	---	---	---
456511: Sweeney-----	0-7	Stony clay loam	GC, CL	A-6	5-10	0-5	65-95	60-85	50-80	40-60	30-40	10-20
	7-22	Gravelly sandy clay loam	SC-SM, SC	A-6, A-4	0	0-5	80-95	75-90	65-80	35-50	25-40	5-20
	22-50	Gravelly fine sandy loam	SM, SC-SM	A-4	0	0-5	80-95	75-90	50-65	35-50	20-30	NP-10
	50-54	Weathered bedrock			---	---	---	---	---	---	---	---
456517: Tierra-----	0-17	Loam	CL-ML, CL	A-6, A-4	0	0	95-100	80-100	70-95	50-65	25-35	5-15
	17-37	Clay, sandy clay	CL, CH	A-7	0	0	100	85-100	70-100	50-95	40-55	15-30
	37-60	Sandy clay loam	SC	A-6	0	0	95-100	80-100	70-95	35-50	30-40	10-20
456518: Tierra-----	0-17	Loam	CL-ML, CL	A-6, A-4	0	0	95-100	80-100	70-95	50-65	25-35	5-15
	17-37	Clay, sandy clay	CL, CH	A-7	0	0	100	85-100	70-100	50-95	40-55	15-30
	37-60	Sandy clay loam	SC	A-6	0	0	95-100	80-100	70-95	35-50	30-40	10-20
456519: Tierra-----	0-13	Loam	CL-ML, CL	A-6, A-4	0	0	95-100	80-100	70-95	50-65	25-35	5-15
	13-33	Clay, sandy clay	CL, CH	A-7	0	0	100	85-100	70-100	50-95	40-55	15-30
	33-60	Sandy clay loam	SC	A-6	0	0	95-100	80-100	70-95	35-50	30-40	10-20
456520: Tierra-----	0-17	Loam	CL-ML, CL	A-6, A-4	0	0	95-100	80-100	70-95	50-65	25-35	5-15
	17-37	Clay, sandy clay	CL, CH	A-7	0	0	100	85-100	70-100	50-95	40-55	15-30
	37-60	Sandy clay loam	SC	A-6	0	0	95-100	80-100	70-95	35-50	30-40	10-20

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 in	3-10 in	4	10	40	200		
459393: Ballard-----	0-19	Gravelly loam	SC-SM, GC-GM	A-4	0	0	60-80	55-75	50-65	35-50	20-30	5-10
	19-65	Gravelly clay loam	SC-SM, GC-GM	A-4, A-2	0	0-5	55-80	50-75	40-65	30-50	20-30	5-10
459395: Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459397: Blucher-----	0-7	Silt loam	ML	A-4	0	0	100	100	85-100	50-80	25-35	NP-10
	7-23	Loam, silt loam, fine sandy loam	ML	A-4	0	0	100	100	85-100	50-80	25-35	NP-10
	23-60	Clay loam, silty clay loam	CL	A-7, A-6	0	0	100	100	90-100	70-85	30-45	10-20
Cole-----	0-5	Clay loam	CL	A-6	0	0	100	95-100	90-100	65-85	30-40	10-20
	5-14	Silty clay loam, clay loam, clay	CL	A-7, A-6	0	0	100	100	90-100	70-95	35-50	15-25
	14-60	Silty clay loam, clay loam, silty clay	CL	A-7, A-6	0	0	100	100	90-100	70-95	35-50	15-25
459398: Bonnydoon-----	0-15	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
459399: Bonnydoon-----	0-15	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
459402: Centissima-----	0-15	Loam	ML, CL-ML	A-4	0	0	95-100	75-90	60-80	50-65	20-30	NP-10
	15-22	Loam, gravelly loam	SC-SM, GC-GM, CL-ML	A-4	0	0	70-95	60-90	50-80	40-65	25-30	5-10
	22-33	Very gravelly clay loam, gravelly clay loam, gravelly loam	SC, GC	A-2	0	0	45-80	35-70	20-45	20-35	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459403:												
Centissima-----	0-15	Loam	ML, CL-ML	A-4	0	0	95-100	75-90	60-80	50-65	20-30	NP-10
	15-22	Loam, gravelly loam	SC-SM, GC-GM, CL-ML	A-4	0	0	70-95	60-90	50-80	40-65	25-30	5-10
	22-33	Very gravelly clay loam, gravelly clay loam, gravelly loam	SC, GC	A-2	0	0	45-80	35-70	20-45	20-35	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459404:												
Centissima-----	0-15	Loam	ML, CL-ML	A-4	0	0	95-100	75-90	60-80	50-65	20-30	NP-10
	15-22	Loam, gravelly loam	SC-SM, GC-GM, CL-ML	A-4	0	0	70-95	60-90	50-80	40-65	25-30	5-10
	22-33	Very gravelly clay loam, gravelly clay loam, gravelly loam	SC, GC	A-2	0	0	45-80	35-70	20-45	20-35	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459406:												
Cortina-----	0-10	Gravelly sandy loam	SM, GM	A-4, A-2	0	0-10	55-85	50-75	35-60	25-40	20-30	NP-5
	10-44	Stratified very gravelly loamy sand to very gravelly loam	GM	A-2, A-1	0	0-10	30-60	25-55	15-40	5-35	20-30	NP-5
	44-60	Stratified very gravelly sand to very gravelly loamy sand	GW-GM, GW, SW-SM, SW	A-1	0	0-10	30-60	25-55	15-45	0-10	---	NP
459407:												
Cronkhite-----	0-15	Loam	ML	A-4	0	0	100	95-100	85-95	60-75	25-35	NP-10
	15-26	Clay loam	CL	A-6	0	0	100	95-100	90-100	70-80	30-40	10-20
	26-45	Clay, clay loam	CL, CH	A-7	0	0	100	95-100	90-100	70-95	40-55	15-30
	45-55	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459408:												
Cronkhite-----	0-15	Loam	ML	A-4	0	0	100	95-100	85-95	60-75	25-35	NP-10
	15-26	Clay loam	CL	A-6	0	0	100	95-100	90-100	70-80	30-40	10-20
	26-45	Clay, clay loam	CL, CH	A-7	0	0	100	95-100	90-100	70-95	40-55	15-30
	45-55	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459409:												
Cronkhite-----	0-15	Loam	ML	A-4	0	0	100	95-100	85-95	60-75	25-35	NP-10
	15-26	Clay loam	CL	A-6	0	0	100	95-100	90-100	70-80	30-40	10-20
	26-45	Clay, clay loam	CL, CH	A-7	0	0	100	95-100	90-100	70-95	40-55	15-30
	45-55	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459410:												
Cronkhite-----	0-15	Loam	ML	A-4	0	0	100	95-100	85-95	60-75	25-35	NP-10
	15-26	Clay loam	CL	A-6	0	0	100	95-100	90-100	70-80	30-40	10-20
	26-45	Clay, clay loam	CL, CH	A-7	0	0	100	95-100	90-100	70-95	40-55	15-30
	45-55	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459411:												
Dipsea-----	0-8	Very gravelly loam	GM, GC-GM	A-2	0	0	50-60	30-50	25-50	20-35	25-35	5-10
	8-25	Very gravelly clay loam, very gravelly loam	GC	A-2	0	0	50-60	30-50	25-50	25-35	30-40	10-20
	25-48	Very gravelly loam	GM, GC-GM	A-2	0	0	50-60	30-50	25-50	25-35	25-35	5-10
	48-52	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459412:												
Dipsea-----	0-8	Very gravelly loam	GM, GC-GM	A-2	0	0	50-60	30-50	25-50	20-35	25-35	5-10
	8-25	Very gravelly clay loam, very gravelly loam	GC	A-2	0	0	50-60	30-50	25-50	25-35	30-40	10-20
	25-48	Very gravelly loam	GM, GC-GM	A-2	0	0	50-60	30-50	25-50	25-35	25-35	5-10
	48-52	Weathered bedrock			---	---	---	---	---	---	---	---
Barnabe-----	0-8	Very gravelly loam	GC-GM, GM	A-2	0	0	45-55	35-50	30-45	25-30	25-35	5-10
	8-16	Very gravelly loam			0	0	45-55	35-50	30-45	25-30	25-35	5-10
	16-20	Bedrock			0	0	---	---	---	---	---	---
459415:												
Felton variant--	0-23	Loam	ML, CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	23-34	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-20
	34-47	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	45-55	20-30
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
Soulajule-----	0-17	Clay loam	CL	A-6	0	0	90-100	75-100	70-95	65-80	30-40	10-20
	17-22	Gravelly clay, gravelly clay loam	GC, CL, CH	A-7	0	0	60-75	50-65	50-65	45-60	40-55	20-30
	22-28	Very gravelly clay, very gravelly clay loam	GC	A-7, A-2	0	0	30-60	25-50	25-50	20-40	40-55	20-30
	28-32	Weathered bedrock			---	---	---	---	---	---	---	---
459416:												
Felton variant--	0-23	Loam	ML, CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	23-34	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-20
	34-47	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	45-55	20-30
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
Soulajule-----	0-17	Clay loam	CL	A-6	0	0	90-100	75-100	70-95	65-80	30-40	10-20
	17-22	Gravelly clay, gravelly clay loam	GC, CL, CH	A-7	0	0	60-75	50-65	50-65	45-60	40-55	20-30
	22-28	Very gravelly clay, very gravelly clay loam	GC	A-7, A-2	0	0	30-60	25-50	25-50	20-40	40-55	20-30
	28-32	Weathered bedrock			---	---	---	---	---	---	---	---
459417:												
Felton variant--	0-23	Loam	ML, CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	23-34	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-20
	34-47	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	45-55	20-30
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459417:												
Soulajule-----	0-17	Clay loam	CL	A-6	0	0	90-100	75-100	70-95	65-80	30-40	10-20
	17-22	Gravelly clay, gravelly clay loam	GC, CL, CH	A-7	0	0	60-75	50-65	50-65	45-60	40-55	20-30
	22-28	Very gravelly clay, very gravelly clay loam	GC	A-7, A-2	0	0	30-60	25-50	25-50	20-40	40-55	20-30
	28-32	Weathered bedrock			---	---	---	---	---	---	---	---
459418:												
Felton variant--	0-23	Loam	ML, CL-ML	A-4	0	0	100	100	85-95	60-75	25-35	5-10
	23-34	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-20
	34-47	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	45-55	20-30
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
Soulajule-----	0-17	Clay loam	CL	A-6	0	0	90-100	75-100	70-95	65-80	30-40	10-20
	17-22	Gravelly clay, gravelly clay loam	GC, CL, CH	A-7	0	0	60-75	50-65	50-65	45-60	40-55	20-30
	22-28	Very gravelly clay, very gravelly clay loam	GC	A-7, A-2	0	0	30-60	25-50	25-50	20-40	40-55	20-30
	28-32	Weathered bedrock			---	---	---	---	---	---	---	---
459419:												
Fluvents-----	0-60	Stratified cobbly sand to silt loam	SM, GM		0	0-35	---	---	---	---	---	---
459420:												
Gilroy-----	0-12	Loam	CL-ML, CL	A-6, A-4	0	0	95-100	80-100	70-90	50-85	20-35	5-15
	12-21	Clay loam, loam	CL	A-6	0	0	90-100	80-100	75-90	70-85	30-40	10-20
	21-30	Gravelly clay loam, gravelly loam	SC, CL	A-6	0	0-5	75-90	50-75	45-70	40-55	30-40	10-20
	30-34	Unweathered bedrock			---	---	---	---	---	---	---	---
Gilroy variant--	0-21	Loam	ML	A-4	0	0	80-100	75-95	70-95	50-70	25-35	NP-10
	21-45	Gravelly clay loam	SC, GC	A-6	0	0-10	60-80	55-75	50-70	35-50	30-40	10-20
	45-49	Unweathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon variant-----	0-18	Loam	ML	A-4	0	0	85-100	80-95	75-90	50-70	25-35	NP-10
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
459421:												
Henneke-----	0-3	Stony clay loam	GC	A-2	0	30-70	40-50	35-45	30-40	25-35	40-60	15-35
	3-16	Very cobbly clay, very cobbly clay loam	GC	A-2	0	30-50	55-65	50-60	30-40	25-35	40-60	15-35
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459422: Humaquepts-----	0-5	Peat	PT		0	0	---	---	---	---	---	---
	5-60	Loam, clay loam, clay			0	0	100	100	85-100	60-95	37-74	13-34
459423: Hydraquents-----	0-60	Stratified peat to silt to clay			0	0	100	100	75-100	40-100	---	---
459425: Inverness-----	0-22	Loam	ML	A-4	0	0	100	95-100	60-80	50-60	30-40	5-10
	22-36	Clay loam, loam	ML	A-7, A-5	0	0	100	95-100	85-95	60-75	40-50	5-15
	36-60	Loam, sandy loam	SM, ML	A-4	0	0	100	95-100	50-80	35-60	25-40	NP-10
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
459427: Inverness-----	0-22	Loam	ML	A-4	0	0	100	95-100	60-80	50-60	30-40	5-10
	22-36	Clay loam, loam	ML	A-7, A-5	0	0	100	95-100	85-95	60-75	40-50	5-15
	36-60	Loam, sandy loam	SM, ML	A-4	0	0	100	95-100	50-80	35-60	25-40	NP-10
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
459432: Los Osos-----	0-18	Loam	ML, CL-ML	A-4	0	0	95-100	90-100	70-100	60-95	25-35	5-10
	18-38	Silty clay, clay loam, clay	CL, CH	A-7	0	0	95-100	90-100	75-100	55-90	45-60	20-30
	38-42	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-15	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
459433: Los Osos-----	0-18	Loam	ML, CL-ML	A-4	0	0	95-100	90-100	70-100	60-95	25-35	5-10
	18-38	Silty clay, clay loam, clay	CL, CH	A-7	0	0	95-100	90-100	75-100	55-90	45-60	20-30
	38-42	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-15	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
459434: Los Osos-----	0-15	Loam	ML, CL-ML	A-4	0	0	95-100	90-100	70-100	60-95	25-35	5-10
	15-30	Silty clay, clay loam, clay	CL, CH	A-7	0	0	95-100	90-100	75-100	55-90	45-60	20-30
	30-34	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 in	3-10 in	4	10	40	200		
459434: Bonnydoon-----	0-11	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	11-15	Weathered bedrock			---	---	---	---	---	---	---	---
459436: Los Osos-----	0-15	Loam	ML, CL-ML	A-4	0	0	95-100	90-100	70-100	60-95	25-35	5-10
	15-30	Silty clay, clay loam, clay	CL, CH	A-7	0	0	95-100	90-100	75-100	55-90	45-60	20-30
	30-34	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-11	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	11-15	Weathered bedrock			---	---	---	---	---	---	---	---
459437: Maymen-----	0-12	Gravelly loam	SM, GM	A-4, A-2	0	0-5	60-80	50-75	30-60	25-50	20-35	NP-10
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
Maymen variant--	0-4	Gravelly loam	SM, GM	A-4	0	0-5	55-80	50-75	45-70	35-50	25-35	NP-10
	4-37	Gravelly clay	GC, CH	A-7	0	0	60-80	55-75	45-70	45-60	50-65	25-35
	37-41	Unweathered bedrock			---	---	---	---	---	---	---	---
459438: Montara-----	0-13	Clay loam	CL	A-7, A-6	0	0-5	90-100	75-95	75-90	70-80	30-45	10-20
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
459439: Novato-----	0-15	Clay	MH	A-7	0	0	100	100	90-100	80-95	50-70	20-30
	15-60	Clay, silty clay, silty clay loam	MH	A-7	0	0	100	100	85-100	85-95	50-70	15-30
459440: Olompali-----	0-13	Loam	ML	A-4	0	0	100	100	85-95	60-75	20-35	NP-10
	13-28	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-60	20-35
	28-42	Gravelly clay	GC, CL, CH	A-7	0	0	65-80	55-75	50-70	45-65	40-60	20-35
	42-60	Clay	CL, CH	A-7	0	0	95-100	95-100	90-100	75-95	40-60	20-35
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
459441: Olompali-----	0-13	Loam	ML	A-4	0	0	100	100	85-95	60-75	20-35	NP-10
	13-28	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-60	20-35
	28-42	Gravelly clay	GC, CL, CH	A-7	0	0	65-80	55-75	50-70	45-65	40-60	20-35
	42-60	Clay	CL, CH	A-7	0	0	95-100	95-100	90-100	75-95	40-60	20-35
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---

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Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	In				Pct	Pct					Pct	
459442:												
Olompali-----	0-13	Loam	ML	A-4	0	0	100	100	85-95	60-75	20-35	NP-10
	13-28	Clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-60	20-35
	28-42	Gravelly clay	GC, CL, CH	A-7	0	0	65-80	55-75	50-70	45-65	40-60	20-35
	42-60	Clay	CL, CH	A-7	0	0	95-100	95-100	90-100	75-95	40-60	20-35
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
459448:												
Palomarin-----	0-18	Loam	ML	A-4	0	0	85-100	75-100	70-90	50-70	25-35	NP-10
	18-29	Loam	ML, CL-ML	A-4	0	0	85-100	75-100	70-90	50-70	25-35	5-10
	29-41	Gravelly loam	SC-SM, GC-GM	A-4	0	0-5	65-85	60-75	50-70	35-50	25-35	5-10
	41-45	Unweathered bedrock			---	---	---	---	---	---	---	---
Wittenberg-----	0-26	Very gravelly loam	GM, GC-GM	A-2	0	0	30-60	25-50	20-45	15-35	25-35	5-10
	26-50	Very gravelly loam	GM, GC-GM	A-2	0	0	30-60	25-50	20-45	15-35	25-35	5-10
	50-54	Unweathered bedrock			---	---	---	---	---	---	---	---
459452:												
Rodeo-----	0-20	Clay loam	CL	A-6	0	0	100	100	90-100	75-85	30-40	10-20
	20-75	Clay loam, clay	CL, CH	A-7	0	0	100	80-100	80-100	75-95	40-60	20-35
459453:												
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-15	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
459454:												
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-15	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
459455:												
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-11	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	11-15	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459456:												
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
Bonnydoon-----	0-11	Gravelly loam	SC, SC-SM, GC, GC-GM	A-6, A-4	0	0-5	60-80	55-75	50-65	35-50	25-40	5-15
	11-15	Weathered bedrock			---	---	---	---	---	---	---	---
459463:												
Sirdrak-----	0-16	Sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-25	---	NP
	16-48	Loamy sand, sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-90	5-30	---	NP
	48-73	Sand	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-25	---	NP
459467:												
Tamalpais-----	0-19	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0-5	40-65	35-50	30-50	25-40	25-35	5-10
	19-39	Very gravelly clay loam	GC	A-6, A-2	0	5-10	40-65	40-55	35-50	30-40	30-40	10-20
	39-43	Unweathered bedrock			---	---	---	---	---	---	---	---
Barnabe variant-	0-13	Very gravelly loam	GM, GC-GM	A-4, A-2	0	5-10	40-50	35-50	30-50	25-40	25-35	5-10
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
459468:												
Tamalpais-----	0-19	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0-5	40-65	35-50	30-50	25-40	25-35	5-10
	19-39	Very gravelly clay loam	GC	A-6, A-2	0	5-10	40-65	40-55	35-50	30-40	30-40	10-20
	39-43	Unweathered bedrock			---	---	---	---	---	---	---	---
Barnabe variant-	0-13	Very gravelly loam	GM, GC-GM	A-4, A-2	0	5-10	40-50	35-50	30-50	25-40	25-35	5-10
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
459469:												
Tamalpais-----	0-19	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0-5	40-65	35-50	30-50	25-40	25-35	5-10
	19-39	Very gravelly clay loam	GC	A-6, A-2	0	5-10	40-65	40-55	35-50	30-40	30-40	10-20
	39-43	Unweathered bedrock			---	---	---	---	---	---	---	---
Barnabe variant-	0-13	Very gravelly loam	GM, GC-GM	A-4, A-2	0	5-10	40-50	35-50	30-50	25-40	25-35	5-10
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
459471:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
McMullin-----	0-4	Gravelly loam	SM	A-4, A-2	0	0-25	70-80	65-75	45-65	25-50	20-30	NP-5
	4-18	Gravelly clay loam, gravelly loam	CL	A-6	0	0-25	75-95	65-75	60-75	50-60	30-40	10-15
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459472:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
McMullin-----	0-4	Gravelly loam	SM	A-4, A-2	0	0-25	70-80	65-75	45-65	25-50	20-30	NP-5
	4-18	Gravelly clay loam, gravelly loam	CL	A-6	0	0-25	75-95	65-75	60-75	50-60	30-40	10-15
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
459473:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
McMullin-----	0-4	Gravelly loam	SM	A-4, A-2	0	0-25	70-80	65-75	45-65	25-50	20-30	NP-5
	4-18	Gravelly clay loam, gravelly loam, cobbly clay loam	CL	A-6	0	0-25	75-95	65-75	60-75	50-60	30-40	10-15
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
459474:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
McMullin-----	0-4	Gravelly loam	SM	A-4, A-2	0	0-25	70-80	65-75	45-65	25-50	20-30	NP-5
	4-18	Gravelly clay loam, gravelly loam, cobbly clay loam	CL	A-6	0	0-25	75-95	65-75	60-75	50-60	30-40	10-15
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
459475:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
459476:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459476:												
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
459477:												
Tocaloma-----	0-19	Loam	ML, CL-ML	A-4	0	0	80-100	75-95	65-85	50-70	25-35	5-10
	19-39	Very gravelly loam	GM, GC-GM	A-4, A-2	0	0	45-60	35-50	30-50	25-40	25-35	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
Saurin-----	0-10	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-15
	10-33	Clay loam	CL	A-6	0	0	95-100	75-95	70-90	55-70	30-40	10-20
	33-37	Weathered bedrock			---	---	---	---	---	---	---	---
459481:												
Tomales-----	0-12	Fine sandy loam	SM	A-4	0	0	100	100	60-80	35-50	20-30	NP-5
	12-24	Loam, silt loam	ML, CL-ML	A-4	0	0	100	100	70-95	60-80	25-40	5-10
	24-47	Clay, clay loam	CL, CH	A-7	0	0	100	100	90-100	75-95	40-60	20-35
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
459489:												
Tomales-----	0-12	Fine sandy loam	SM	A-4	0	0	100	100	60-80	35-50	20-30	NP-5
	12-24	Loam, silt loam	ML, CL-ML	A-4	0	0	100	100	70-95	60-80	25-40	5-10
	24-47	Clay, clay loam	CL, CH	A-7	0	0	100	100	90-100	75-95	40-60	20-35
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
Steinbeck-----	0-35	Fine sandy loam	SM	A-4	0	0	100	100	70-85	35-50	20-30	NP-5
	35-48	Loam, clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-20
	48-52	Weathered bedrock			---	---	---	---	---	---	---	---
459490:												
Tomales-----	0-12	Loam	ML, CL-ML	A-4	0	0	100	100	70-95	60-70	25-35	5-10
	12-24	Loam, silt loam	ML, CL-ML	A-4	0	0	100	100	70-95	60-80	25-40	5-10
	24-47	Clay, clay loam	CL, CH	A-7	0	0	100	100	90-100	75-95	40-60	20-35
	47-51	Weathered bedrock			---	---	---	---	---	---	---	---
Steinbeck-----	0-35	Loam	ML	A-4	0	0	100	100	85-95	50-75	25-35	NP-10
	35-48	Loam, clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-40	10-20
	48-52	Weathered bedrock			---	---	---	---	---	---	---	---
459497:												
Yorkville-----	0-14	Clay loam	CL	A-7, A-6	0	0	100	95-100	90-95	70-85	30-45	10-20
	14-51	Clay loam, clay	MH, CH	A-7	0	0	100	100	90-100	75-95	50-60	20-30
	51-55	Weathered bedrock			---	---	---	---	---	---	---	---

Table 14.-Engineering Properties-Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					in	in						
	<u>In</u>				<u>Pct</u>	<u>Pct</u>					<u>Pct</u>	
459498:												
Yorkville-----	0-14	Clay loam	CL	A-7, A-6	0	0	100	95-100	90-95	70-85	30-45	10-20
	14-51	Clay loam, clay	MH, CH	A-7	0	0	100	100	90-100	75-95	50-60	20-30
	51-55	Weathered bedrock			---	---	---	---	---	---	---	---
459499:												
Yorkville-----	0-10	Clay loam	CL	A-7, A-6	0	0	100	95-100	90-95	70-85	30-45	10-20
	10-45	Clay loam, clay	MH, CH	A-7	0	0	100	100	90-100	75-95	50-60	20-30
	45-49	Weathered bedrock			---	---	---	---	---	---	---	---
459500:												
Yorkville-----	0-14	Clay loam	CL	A-7, A-6	0	0	100	95-100	90-95	70-85	30-45	10-20
	14-51	Clay loam, clay	MH, CH	A-7	0	0	100	100	90-100	75-95	50-60	20-30
	51-55	Weathered bedrock			---	---	---	---	---	---	---	---
459501:												
Yorkville-----	0-14	Clay loam	CL	A-7, A-6	0	0	100	95-100	90-95	70-85	30-45	10-20
	14-51	Clay loam, clay	MH, CH	A-7	0	0	100	100	90-100	75-95	50-60	20-30
	51-55	Weathered bedrock			---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties

(Sand, silt, and clay values are shown either as a range or as a representative value. Absence of an entry indicates that data were not estimated)

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
455964: Alambique-----	0-6	66	15	18-20	1.45-1.55	0.6-2.0	0.11-0.13	0.0-2.9	1.0-4.0
	6-30	41	37	18-25	1.45-1.55	0.6-2.0	0.13-0.16	0.0-2.9	0.5-1.0
	30-34	---	---	---	---	---	---	---	---
455965: Alambique-----	0-12	42	38	15-25	1.45-1.55	0.6-2.0	0.09-0.13	0.0-2.9	1.0-4.0
	12-30	41	37	18-25	1.45-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0
	30-34	---	---	---	---	---	---	---	---
McGarvey-----	0-7	42	38	15-25	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	7-14	35	34	27-35	1.40-1.50	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	14-37	29	31	35-45	1.35-1.50	0.1-0.2	0.14-0.16	6.0-8.9	0.5-1.0
	37-41	---	---	---	---	---	---	---	---
455966: Barnabe-----	0-7	65	19	12-20	1.50-1.60	2.0-5.9	0.06-0.08	0.0-2.9	1.0-3.0
	7-12	42	37	15-27	1.50-1.60	0.6-2.0	0.07-0.10	0.0-2.9	1.0-2.0
	12-16	---	---	---	---	---	---	---	---
Candlestick-----	0-2	63	19	15-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	1.0-3.0
	2-20	41	37	18-25	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	20-24	54	17	27-30	1.45-1.55	0.2-0.6	0.14-0.18	3.0-5.9	0.0-0.5
	24-28	---	---	---	---	---	---	---	---
455967: Barnabe-----	0-7	65	19	12-20	1.50-1.60	2.0-5.9	0.06-0.08	0.0-2.9	1.0-3.0
	7-12	42	37	15-27	1.45-1.55	0.6-2.0	0.07-0.10	0.0-2.9	1.0-2.0
	12-16	---	---	---	---	---	---	---	---
455970: Candlestick-----	0-2	63	19	15-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	1.0-3.0
	2-20	41	37	18-25	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	20-24	54	17	27-30	1.45-1.55	0.2-0.6	0.14-0.18	3.0-5.9	0.0-0.5
	24-28	---	---	---	---	---	---	---	---
Barnabe-----	0-7	65	19	12-20	1.50-1.60	2.0-5.9	0.06-0.08	0.0-2.9	1.0-3.0
	7-12	42	37	15-27	1.45-1.55	0.6-2.0	0.07-0.10	0.0-2.9	1.0-2.0
	12-16	---	---	---	---	---	---	---	---
455971: Candlestick-----	0-2	68	14	15-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	1.0-3.0
	2-20	41	37	18-25	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	20-24	54	17	27-30	1.45-1.55	0.2-0.6	0.14-0.18	3.0-5.9	0.0-0.5
	24-28	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
455971: Kron-----	0-3	67	15	15-20	1.50-1.60	2.0-5.9	0.11-0.13	0.0-2.9	1.0-5.0
	3-14	43	40	15-20	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	14-18	---	---	---	---	---	---	---	---
Buriburi-----	0-30	40	38	18-27	1.45-1.55	0.6-2.0	0.10-0.14	0.0-2.9	1.0-3.0
	30-34	---	---	---	---	---	---	---	---
455972: Candlestick variant-----	0-21	40	38	18-27	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	1.0-3.0
	21-65	35	34	27-35	1.40-1.50	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.5
455973: Candlestick variant-----	0-21	40	38	18-27	1.40-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-3.0
	21-65	35	34	27-35	1.40-1.50	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.5
455974: Fagan-----	0-5	39	37	20-27	1.45-1.55	0.6-2.0	0.15-0.17	3.0-5.9	1.0-3.0
	5-26	30	32	35-40	1.40-1.50	0.2-0.6	0.17-0.19	3.0-5.9	0.5-2.0
	26-43	22	28	40-60	1.25-1.45	0.1-0.2	0.14-0.16	6.0-8.9	0.5-2.0
	43-47	---	---	---	---	---	---	---	---
455976: Los Gatos-----	0-22	40	38	20-25	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0
	22-36	34	36	25-35	1.45-1.55	0.2-0.6	0.14-0.20	3.0-5.9	0.0-0.5
	36-40	---	---	---	---	---	---	---	---
455977: Maymen-----	0-12	43	40	10-25	1.45-1.55	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0
	12-16	---	---	---	---	---	---	---	---
455980: Obispo-----	0-12	22	28	40-60	1.25-1.45	0.1-0.2	0.13-0.15	3.0-5.9	1.0-3.0
	12-16	---	---	---	---	---	---	---	---
455981: Obispo-----	0-12	22	28	40-60	1.25-1.45	0.1-0.2	0.13-0.15	3.0-5.9	1.0-3.0
	12-16	---	---	---	---	---	---	---	---
455982: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455983: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
455984: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455985: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455988: Orthents-----	0-5	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455989: Scarper-----	0-16	68	19	8-18	1.55-1.60	2.0-5.9	0.07-0.09	0.0-2.9	1.0-3.0
	16-25	68	19	8-18	1.55-1.60	2.0-5.9	0.07-0.09	0.0-2.9	0.5-1.0
	25-29	---	---	---	---	---	---	---	---
Miramar-----	0-15	42	37	15-27	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	1.0-3.0
	15-24	35	34	27-35	1.40-1.50	0.2-0.6	0.15-0.18	3.0-5.9	0.5-1.0
	24-29	42	37	15-27	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	0.0-0.5
	29-33	---	---	---	---	---	---	---	---
455990: Sirdrak-----	0-17	96	2	0-5	1.60-1.70	5.9-20.0	0.05-0.07	0.0-2.9	1.0-5.0
	17-60	96	2	0-5	1.60-1.70	5.9-20.0	0.05-0.07	0.0-2.9	0.0-0.5
455991: Typic Argiustolls----	0-11	66	19	10-20	1.45-1.55	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	11-37	56	14	25-35	1.35-1.55	0.1-0.2	0.09-0.11	3.0-5.9	0.5-1.0
	37-60	56	14	25-35	1.45-1.55	0.1-0.2	0.09-0.11	3.0-5.9	0.0-0.0
455993: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455994: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455995: Orthents-----	0-40	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
	40-60	5	45	40-60	---	0.1-0.2	0.06-0.12	6.0-8.9	0.0-0.0
455996: Orthents-----	0-60	---	---	---	1.45-1.55	---	0.00-0.00	---	0.0-0.5
455997: Sirdrak-----	0-17	96	2	0-5	1.60-1.70	5.9-20.0	0.05-0.07	0.0-2.9	1.0-5.0
	17-60	96	2	0-5	1.60-1.70	5.9-20.0	0.05-0.07	0.0-2.9	0.0-0.5

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
455998:									
Zeni-----	0-9	42	37	15-27	1.45-1.55	0.6-2.0	0.10-0.15	0.0-2.9	1.0-4.0
	9-26	36	39	15-35	1.40-1.50	0.6-2.0	0.11-0.15	3.0-5.9	0.0-1.0
	26-30	---	---	---	---	---	---	---	---
Zeni variant----	0-13	42	38	15-25	1.45-1.55	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	13-31	35	33	30-35	1.40-1.50	0.2-0.6	0.06-0.12	3.0-5.9	1.0-2.0
	31-39	35	33	30-35	1.40-1.50	0.2-0.6	0.12-0.15	3.0-5.9	0.0-0.5
	39-43	---	---	---	---	---	---	---	---
456330:									
Botella-----	0-28	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.16	3.0-5.9	2.0-6.0
	28-60	20	48	30-35	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5
456331:									
Butano-----	0-23	41	37	18-25	1.35-1.45	0.6-2.0	0.12-0.14	0.0-2.9	2.0-4.0
	23-28	35	34	27-35	1.30-1.40	0.6-2.0	0.13-0.15	3.0-5.9	0.0-0.5
	28-36	20	49	27-35	1.30-1.40	0.6-2.0	0.13-0.15	3.0-5.9	0.0-0.5
	36-40	---	---	---	---	0.0-0.2	---	---	---
456364:									
Denison-----	0-10	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	1.0-4.0
	10-45	22	28	40-60	1.30-1.40	0.1-0.2	0.14-0.16	6.0-8.9	0.5-0.7
	45-61	34	32	27-40	1.30-1.45	0.1-0.2	0.17-0.19	3.0-5.9	0.0-0.5
	61-70	39	37	20-27	1.45-1.55	0.2-0.6	0.15-0.17	3.0-5.9	0.0-0.5
456365:									
Denison-----	0-10	66	18	10-20	1.50-1.60	2.0-5.9	0.11-0.13	0.0-2.9	1.0-4.0
	10-20	35	34	27-35	1.35-1.45	0.2-0.6	0.17-0.19	3.0-5.9	0.5-0.7
	20-55	22	28	40-60	1.30-1.40	0.1-0.2	0.14-0.16	6.0-8.9	0.0-0.5
	55-71	34	32	27-40	1.30-1.45	0.1-0.2	0.17-0.19	3.0-5.9	0.0-0.5
456367:									
Denison-----	0-15	39	37	20-27	1.35-1.45	0.6-2.0	0.15-0.17	0.0-2.9	1.0-4.0
	15-45	22	28	40-60	1.30-1.40	0.1-0.2	0.14-0.16	6.0-8.9	0.5-0.7
	45-60	34	32	27-40	1.30-1.45	0.1-0.2	0.17-0.19	3.0-5.9	0.0-0.5
	60-70	39	37	20-27	1.45-1.55	0.2-0.6	0.15-0.17	3.0-5.9	0.0-0.5
456368:									
Denison-----	0-15	39	37	20-27	1.35-1.45	0.6-2.0	0.15-0.17	0.0-2.9	1.0-4.0
	15-45	22	28	40-60	1.30-1.40	0.1-0.2	0.14-0.16	6.0-8.9	0.5-0.7
	45-60	34	32	27-40	1.30-1.45	0.1-0.2	0.17-0.19	3.0-5.9	0.0-0.5
	60-70	39	37	20-27	1.45-1.55	0.2-0.6	0.15-0.17	3.0-5.9	0.0-0.5
456376:									
Elkhorn-----	0-25	66	19	10-20	1.45-1.55	2.0-5.9	0.12-0.14	0.0-2.9	2.0-6.0
	25-60	55	17	20-35	1.40-1.50	0.2-0.6	0.14-0.16	3.0-5.9	0.0-0.5

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
456377: Elkhorn-----	0-25	66	19	10-20	1.45-1.55	2.0-5.9	0.12-0.14	0.0-2.9	2.0-6.0
	25-60	55	17	20-35	1.40-1.50	0.2-0.6	0.14-0.16	3.0-5.9	0.0-0.5
456379: Elkhorn-----	0-20	66	19	10-20	1.45-1.55	2.0-5.9	0.12-0.14	0.0-2.9	2.0-6.0
	20-60	55	17	20-35	1.40-1.50	0.2-0.6	0.14-0.16	3.0-5.9	0.0-0.5
456382: Farallone-----	0-20	44	40	15-18	1.40-1.50	2.0-5.9	0.14-0.16	0.0-2.9	1.0-3.0
	20-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
456383: Farallone-----	0-20	44	40	15-18	1.40-1.50	2.0-5.9	0.14-0.16	0.0-2.9	1.0-3.0
	20-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
456384: Farallone-----	0-20	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	20-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
456385: Farallone-----	0-20	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	20-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
456386: Farallone-----	0-15	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	15-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
456387: Farallone-----	0-15	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	15-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
456388: Farallone-----	0-20	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	20-30	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	30-60	91	6	0-5	1.60-1.70	2.0-5.9	0.05-0.07	0.0-2.9	0.0-0.5
456390: Farallone-----	0-15	82	11	5-10	1.50-1.65	2.0-5.9	0.06-0.08	0.0-2.9	1.0-2.0
	15-48	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5
	48-60	67	19	10-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.0-0.5

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
456394: Gazos-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-25	24	51	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	25-29				---	0.2-0.6	---	---	---
456397: Gazos-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-25	24	51	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	25-29				---	0.2-0.6	---	---	---
456398: Gazos-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-25	24	51	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	25-29				---	0.2-0.6	---	---	---
456399: Gazos (dark phase)-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-24	20	54	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	24-28				---	0.2-0.6	---	---	---
Calera-----	0-10	39	37	20-27	1.40-1.50	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	10-30	34	37	27-30	1.30-1.40	0.6-2.0	0.15-0.18	3.0-5.9	0.7-1.0
	30-34				---	0.2-2.0	---	---	---
456400: Gazos (dark phase)-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-24	20	54	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	24-28				---	0.2-0.6	---	---	---
Calera-----	0-10	39	37	20-27	1.40-1.50	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	10-30	34	37	27-30	1.30-1.40	0.6-2.0	0.15-0.18	3.0-5.9	0.7-1.0
	30-34				---	0.2-2.0	---	---	---
456401: Gazos (dark phase)-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-24	20	54	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	24-28				---	0.2-0.6	---	---	---
Calera-----	0-10	39	37	20-27	1.40-1.50	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	10-30	34	37	27-30	1.30-1.40	0.6-2.0	0.15-0.18	3.0-5.9	0.7-1.0
	30-34				---	0.2-2.0	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
456403: Gazos (dark phase)-----	0-12	40	38	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-24	20	54	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	24-28				---	0.2-0.6	---	---	---
Sweeney-----	0-7	39	37	20-27	1.45-1.55	0.6-2.0	0.14-0.16	3.0-5.9	1.0-4.0
	7-22	35	38	24-30	1.40-1.50	0.6-2.0	0.14-0.19	3.0-5.9	0.7-1.0
	22-50	65	20	10-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	0.0-0.5
	50-54				---	0.0-0.1	---	---	---
456404: Gazos-----	0-16	25	53	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	16-28	24	51	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	28-32				---	0.2-0.6	---	---	---
Lobitos-----	0-22	26	53	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	22-33	35	34	27-35	1.35-1.45	0.2-0.6	0.12-0.15	3.0-5.9	0.7-1.0
	33-38	42	38	15-25	1.40-1.50	0.2-0.6	0.10-0.13	0.0-2.9	0.0-0.5
	38-42				---	0.2-2.0	---	---	---
456405: Gazos-----	0-12	25	53	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-24	24	51	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	24-28				---	0.2-0.6	---	---	---
Lobitos-----	0-18	26	53	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	18-29	35	34	27-35	1.35-1.45	0.2-0.6	0.12-0.15	3.0-5.9	0.7-1.0
	29-34	42	38	15-25	1.40-1.50	0.2-0.6	0.10-0.13	0.0-2.9	0.0-0.5
	34-38				---	0.2-2.0	---	---	---
456406: Gazos-----	0-12	25	53	18-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-5.0
	12-24	24	51	20-30	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.7-1.0
	24-28				---	0.2-0.6	---	---	---
Lobitos-----	0-18	26	53	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	18-29	35	34	27-35	1.35-1.45	0.2-0.6	0.12-0.15	3.0-5.9	0.7-1.0
	29-34	42	38	15-25	1.40-1.50	0.2-0.6	0.10-0.13	0.0-2.9	0.0-0.5
	34-38				---	0.2-2.0	---	---	---
456416: Hugo-----	0-8	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0
	8-45	39	37	20-27	1.30-1.50	0.6-2.0	0.12-0.14	0.0-2.9	0.5-0.7
	45-49				---	0.2-0.6	---	---	---
Josephine-----	0-12	42	37	15-27	1.20-1.30	0.6-2.0	0.14-0.18	0.0-2.9	1.0-4.0
	12-47	35	34	27-35	1.20-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	47-51				---	0.2-0.6	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
456418:									
Hugo-----	0-8	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0
	8-45	39	37	20-27	1.30-1.50	0.6-2.0	0.12-0.14	0.0-2.9	0.5-0.7
	45-49				---	0.2-0.6	---	---	---
Josephine-----	0-12	42	37	15-27	1.20-1.30	0.6-2.0	0.14-0.18	0.0-2.9	1.0-4.0
	12-47	35	34	27-35	1.20-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	47-51				---	0.2-0.6	---	---	---
456420:									
Hugo-----	0-8	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0
	8-45	39	37	20-27	1.30-1.50	0.6-2.0	0.12-0.14	0.0-2.9	0.5-0.7
	45-49				---	0.2-0.6	---	---	---
Josephine-----	0-12	42	37	15-27	1.20-1.30	0.6-2.0	0.14-0.18	0.0-2.9	1.0-4.0
	12-47	35	34	27-35	1.20-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	47-51				---	0.2-0.6	---	---	---
456423:									
Hugo-----	0-4	66	19	10-20	1.40-1.50	2.0-5.9	0.13-0.15	0.0-2.9	1.0-4.0
	4-41	66	19	10-20	1.30-1.50	2.0-5.9	0.10-0.13	0.0-2.9	0.5-0.7
	41-45				---	0.2-0.6	---	---	---
Josephine-----	0-8	66	19	10-20	1.20-1.30	0.6-2.0	0.12-0.15	0.0-2.9	1.0-4.0
	8-43	36	39	20-30	1.20-1.40	0.6-2.0	0.14-0.18	3.0-5.9	0.5-1.0
	43-47				---	0.2-0.6	---	---	---
456444:									
Lobitos-----	0-18	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	18-29	35	34	27-35	1.35-1.45	0.2-0.6	0.12-0.15	3.0-5.9	0.7-1.0
	29-34	42	38	15-25	1.40-1.50	0.2-0.6	0.10-0.13	0.0-2.9	0.0-0.5
	34-38				---	0.2-0.6	---	---	---
456445:									
Lobitos-----	0-18	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	18-29	35	34	27-35	1.35-1.45	0.2-0.6	0.12-0.15	3.0-5.9	0.7-1.0
	29-34	42	38	15-25	1.40-1.50	0.2-0.6	0.10-0.13	0.0-2.9	0.0-0.5
	34-38				---	0.2-0.6	---	---	---
456446:									
Lobitos-----	0-18	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0
	18-29	35	34	27-35	1.35-1.45	0.2-0.6	0.12-0.15	3.0-5.9	0.7-1.0
	29-34	42	38	15-25	1.40-1.50	0.2-0.6	0.10-0.13	0.0-2.9	0.0-0.5
	34-38				---	0.2-0.6	---	---	---
456464:									
Miramar-----	0-22	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	22-37	55	14	27-35	1.30-1.45	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.7
	37-41				---	0.0-0.1	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
456465: Miramar-----	0-22	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	22-37	57	18	20-30	1.30-1.45	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.7
	37-41				---	0.0-0.1	---	---	---
456466: Miramar-----	0-22	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	22-37	57	18	20-30	1.30-1.45	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.7
	37-41				---	0.0-0.1	---	---	---
456467: Miramar-----	0-18	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	18-33	57	18	20-30	1.30-1.45	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.7
	33-37				---	0.0-0.1	---	---	---
456468: Miramar-----	0-22	68	18	10-18	1.45-1.55	2.0-5.9	0.09-0.12	0.0-2.9	1.0-3.0
	22-37	57	18	20-30	1.30-1.45	0.2-0.6	0.15-0.18	3.0-5.9	0.0-0.7
	37-41				---	0.0-0.1	---	---	---
456469: Montara-----	0-6	40	38	18-27	1.40-1.50	0.2-0.6	0.09-0.14	0.0-2.9	1.0-3.0
	6-15	35	34	27-35	1.40-1.50	0.2-0.6	0.11-0.15	3.0-5.9	0.0-0.7
	15-19				---	0.2-0.6	---	---	---
456486: Sheridan-----	0-5	68	19	8-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	1.0-5.0
	5-38	68	19	8-18	1.50-1.50	2.0-5.9	0.09-0.13	0.0-2.9	0.5-0.7
	38-42				---	0.0-0.1	---	---	---
456487: Sheridan-----	0-5	68	19	8-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	1.0-5.0
	5-38	68	19	8-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.5-0.7
	38-42				---	0.0-0.1	---	---	---
456488: Sheridan-----	0-5	68	19	8-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	1.0-5.0
	5-38	68	19	8-18	1.50-1.60	2.0-5.9	0.09-0.13	0.0-2.9	0.5-0.7
	38-42				---	0.0-0.1	---	---	---
456494: Soquel-----	0-30	42	37	15-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	30-60	25	53	18-27	1.45-1.55	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	60-70	39	37	20-27	1.45-1.55	0.2-0.6	0.13-0.17	0.0-2.9	0.0-0.5

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
456506: Sweeney-----	0-7	39	37	20-27	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0
	7-22	55	18	24-30	1.40-1.50	0.6-2.0	0.14-0.19	3.0-5.9	0.7-1.0
	22-50	65	20	10-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	0.0-0.5
	50-54				---	0.0-0.1	---	---	---
456511: Sweeney-----	0-7	34	37	27-30	1.35-1.45	0.6-2.0	0.15-0.18	3.0-5.9	1.0-4.0
	7-22	55	18	24-30	1.40-1.50	0.6-2.0	0.13-0.19	3.0-5.9	0.7-1.0
	22-50	65	20	10-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	0.0-0.5
	50-54				---	0.0-0.1	---	---	---
456517: Tierra-----	0-17	42	37	15-27	1.45-1.55	0.6-2.0	0.13-0.16	0.0-2.9	1.0-5.0
	17-37	28	30	35-50	1.35-1.55	0.0-0.1	0.04-0.06	6.0-8.9	0.0-0.5
	37-60	56	14	25-35	1.35-1.50	0.1-0.2	0.15-0.18	3.0-5.9	0.0-0.5
456518: Tierra-----	0-17	42	37	15-27	1.45-1.55	0.6-2.0	0.13-0.16	0.0-2.9	1.0-5.0
	17-37	28	30	35-50	1.35-1.55	0.0-0.1	0.04-0.06	6.0-8.9	0.0-0.5
	37-60	56	14	25-35	1.35-1.50	0.1-0.2	0.15-0.18	3.0-5.9	0.0-0.5
456519: Tierra-----	0-13	42	37	15-27	1.45-1.55	0.6-2.0	0.13-0.16	0.0-2.9	1.0-5.0
	13-33	28	30	35-50	1.35-1.55	0.0-0.1	0.04-0.06	6.0-8.9	0.0-0.5
	33-60	56	14	25-35	1.35-1.50	0.1-0.2	0.15-0.18	3.0-5.9	0.0-0.5
456520: Tierra-----	0-17	42	37	15-27	1.45-1.55	0.6-2.0	0.13-0.16	0.0-2.9	1.0-5.0
	17-37	28	30	35-50	1.35-1.55	0.0-0.1	0.04-0.06	6.0-8.9	0.0-0.5
	37-60	56	14	25-35	1.35-1.50	0.1-0.2	0.15-0.18	3.0-5.9	0.0-0.5
459393: Ballard-----	0-19	44	41	10-20	1.40-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-3.0
	19-65	29	40	27-35	1.40-1.50	0.6-2.0	0.12-0.15	0.0-2.9	0.5-1.0
459395: Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459397: Blucher-----	0-7	26	54	15-25	1.35-1.50	0.6-2.0	0.15-0.18	0.0-2.9	2.0-4.0
	7-23	29	51	15-25	1.40-1.50	0.6-2.0	0.14-0.18	0.0-2.9	0.5-2.0
	23-60	34	32	27-40	1.30-1.45	0.1-0.2	0.17-0.19	3.0-5.9	0.5-1.0
Cole-----	0-5	35	34	27-35	1.35-1.45	0.2-0.6	0.15-0.18	3.0-5.9	1.0-4.0
	5-14	18	44	35-45	1.30-1.40	0.1-0.2	0.12-0.17	6.0-8.9	1.0-2.0
	14-60	18	42	35-45	1.35-1.45	0.1-0.2	0.12-0.17	6.0-8.9	1.0-2.0

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459398: Bonnydoon-----	0-15	39	37	18-30	1.40-1.50	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	15-19	---	---	---	---	---	---	---	---
459399: Bonnydoon-----	0-15	39	37	18-30	1.40-1.50	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	15-19	---	---	---	---	---	---	---	---
459402: Centissima-----	0-15	42	38	15-25	1.35-1.45	0.6-2.0	0.10-0.15	0.0-2.9	2.0-4.0
	15-22	42	38	15-25	1.40-1.50	0.6-2.0	0.09-0.15	0.0-2.9	0.5-1.0
	22-33	35	38	20-35	1.40-1.50	0.6-2.0	0.09-0.11	3.0-5.9	0.0-0.5
	33-37	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459403: Centissima-----	0-15	42	38	15-25	1.35-1.45	0.6-2.0	0.10-0.15	0.0-2.9	2.0-4.0
	15-22	42	38	15-25	1.40-1.50	0.6-2.0	0.09-0.15	0.0-2.9	0.5-1.0
	22-33	35	38	20-35	1.40-1.50	0.6-2.0	0.09-0.11	3.0-5.9	0.0-0.5
	33-37	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459404: Centissima-----	0-15	42	38	15-25	1.35-1.45	0.6-2.0	0.10-0.15	0.0-2.9	2.0-4.0
	15-22	42	38	15-25	1.40-1.50	0.6-2.0	0.09-0.15	0.0-2.9	0.5-1.0
	22-33	35	38	20-35	1.40-1.50	0.6-2.0	0.09-0.11	3.0-5.9	0.0-0.5
	33-37	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459406: Cortina-----	0-10	67	15	10-25	1.45-1.60	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	10-44	44	41	5-25	1.50-1.70	2.0-5.9	0.06-0.08	0.0-2.9	0.0-0.5
	44-60	78	16	0-10	1.60-1.70	5.9-20.0	0.03-0.05	0.0-2.9	0.0-0.5
459407: Cronkhite-----	0-15	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	15-26	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	1.0-2.0
	26-45	32	30	35-50	1.25-1.40	0.1-0.2	0.15-0.18	6.0-8.9	0.5-1.0
	45-55	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459407:									
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459408:									
Cronkhite-----	0-15	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	15-26	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	1.0-2.0
	26-45	32	30	35-50	1.25-1.40	0.1-0.2	0.15-0.18	6.0-8.9	0.5-1.0
	45-55	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459409:									
Cronkhite-----	0-15	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	15-26	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	1.0-2.0
	26-45	32	30	35-50	1.25-1.40	0.1-0.2	0.15-0.18	6.0-8.9	0.5-1.0
	45-55	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459410:									
Cronkhite-----	0-15	39	37	20-27	1.35-1.45	0.6-2.0	0.14-0.16	0.0-2.9	1.0-3.0
	15-26	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	1.0-2.0
	26-45	32	30	35-50	1.25-1.40	0.1-0.2	0.15-0.18	6.0-8.9	0.5-1.0
	45-55	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459411:									
Dipsea-----	0-8	42	37	15-27	1.25-1.35	0.6-2.0	0.08-0.10	0.0-2.9	3.0-12
	8-25	34	36	25-35	1.35-1.45	0.6-2.0	0.09-0.11	0.0-2.9	1.0-3.0
	25-48	42	37	15-27	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0
	48-52	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459412:									
Dipsea-----	0-8	42	37	15-27	1.25-1.35	0.6-2.0	0.08-0.10	0.0-2.9	3.0-12
	8-25	34	36	25-35	1.35-1.45	0.6-2.0	0.09-0.11	0.0-2.9	1.0-3.0
	25-48	42	37	15-27	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0
	48-52	---	---	---	---	---	---	---	---
Barnabe-----	0-8	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	1.0-3.0
	8-16	42	37	15-27	1.40-1.50	0.6-2.0	0.07-0.10	0.0-2.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459415:									
Felton variant--	0-23	40	38	18-27	1.40-1.50	0.6-2.0	0.13-0.17	0.0-2.9	1.0-3.0
	23-34	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	34-47	26	29	40-50	1.25-1.35	0.1-0.2	0.14-0.16	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---
Soulajule-----	0-17	35	34	27-35	1.25-1.40	0.1-2.0	0.15-0.18	3.0-5.9	1.0-2.0
	17-22	28	29	35-50	1.35-1.45	0.1-0.2	0.08-0.13	6.0-8.9	0.5-1.0
	22-28	28	29	35-50	1.35-1.45	0.1-0.2	0.05-0.10	3.0-5.9	0.5-1.0
	28-32	---	---	---	---	---	---	---	---
459416:									
Felton variant--	0-23	40	38	18-27	1.40-1.50	0.6-2.0	0.13-0.17	0.0-2.9	1.0-3.0
	23-34	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	34-47	26	29	40-50	1.25-1.35	0.1-0.2	0.14-0.16	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---
Soulajule-----	0-17	35	34	27-35	1.25-1.40	0.1-2.0	0.15-0.18	3.0-5.9	1.0-2.0
	17-22	28	29	35-50	1.30-1.40	0.1-0.2	0.08-0.13	6.0-8.9	0.5-1.0
	22-28	28	29	35-50	1.30-1.40	0.1-0.2	0.05-0.10	3.0-5.9	0.5-1.0
	28-32	---	---	---	---	---	---	---	---
459417:									
Felton variant--	0-23	40	38	18-27	1.40-1.50	0.6-2.0	0.13-0.17	0.0-2.9	1.0-3.0
	23-34	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	34-47	26	29	40-50	1.25-1.35	0.1-0.2	0.14-0.16	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---
Soulajule-----	0-17	35	34	27-35	1.25-1.40	0.1-2.0	0.15-0.18	3.0-5.9	1.0-2.0
	17-22	28	29	35-50	1.35-1.45	0.1-0.2	0.08-0.13	6.0-8.9	0.5-1.0
	22-28	28	29	35-50	1.35-1.45	0.1-0.2	0.05-0.10	3.0-5.9	0.5-1.0
	28-32	---	---	---	---	---	---	---	---
459418:									
Felton variant--	0-23	40	38	18-27	1.40-1.50	0.6-2.0	0.13-0.17	0.0-2.9	1.0-3.0
	23-34	35	34	27-35	1.30-1.40	0.2-0.6	0.17-0.19	3.0-5.9	0.5-1.0
	34-47	26	29	40-50	1.25-1.35	0.1-0.2	0.14-0.16	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459418:									
Soulajule-----	0-17	35	34	27-35	1.25-1.40	0.1-2.0	0.15-0.18	3.0-5.9	1.0-2.0
	17-22	28	29	35-50	1.35-1.45	0.1-0.2	0.08-0.13	6.0-8.9	0.5-1.0
	22-28	28	29	35-50	1.35-1.45	0.1-0.2	0.05-0.10	3.0-5.9	0.5-1.0
	28-32	---	---	---	---	---	---	---	---
459420:									
Gilroy-----	0-12	38	36	20-30	1.45-1.55	0.6-2.0	0.14-0.18	3.0-5.9	2.0-6.0
	12-21	34	36	25-35	1.40-1.50	0.2-0.6	0.16-0.18	3.0-5.9	0.5-1.0
	21-30	34	36	25-35	1.40-1.50	0.2-0.6	0.10-0.15	3.0-5.9	0.0-0.5
	30-34	---	---	---	---	---	---	---	---
Gilroy variant--	0-21	41	37	18-25	1.45-1.55	0.6-2.0	0.15-0.17	0.0-2.9	1.0-4.0
	21-45	35	34	27-35	1.35-1.45	0.2-0.6	0.11-0.14	3.0-5.9	0.0-0.5
	45-49	---	---	---	---	---	---	---	---
Bonnydoon variant-----	0-18	41	37	18-25	1.40-1.50	0.6-2.0	0.15-0.17	0.0-2.9	1.0-4.0
	18-22	---	---	---	---	---	---	---	---
459421:									
Henneke-----	0-3	35	34	27-35	1.35-1.45	0.2-0.6	0.05-0.07	3.0-5.9	2.0-7.0
	3-16	28	29	35-50	1.30-1.40	0.2-0.6	0.05-0.07	3.0-5.9	0.5-1.0
	16-20	---	---	---	---	---	---	---	---
459422:									
Humaquepts-----	0-5	---	---	---	---	---	---	---	---
	5-60	33	32	20-50	---	0.1-0.3	0.14-0.21	---	4.0-10
459423:									
Hydraquents-----	0-60	30	25	0-50	---	0.0-0.3	0.08-0.12	---	---
459425:									
Inverness-----	0-22	42	38	15-25	1.40-1.50	0.6-2.0	0.14-0.16	0.0-2.9	2.0-4.0
	22-36	34	36	25-35	1.40-1.50	0.6-2.0	0.14-0.18	3.0-5.9	1.0-2.0
	36-60	43	40	10-25	1.45-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0
	60-64	---	---	---	---	---	---	---	---
459427:									
Inverness-----	0-22	42	38	15-25	1.40-1.50	0.6-2.0	0.14-0.16	0.0-2.9	2.0-4.0
	22-36	34	36	25-35	1.40-1.50	0.6-2.0	0.14-0.18	3.0-5.9	1.0-2.0
	36-60	43	40	10-25	1.45-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0
	60-64	---	---	---	---	---	---	---	---
459432:									
Los Osos-----	0-18	39	37	20-27	1.40-1.50	0.6-2.0	0.14-0.17	3.0-5.9	2.0-4.0
	18-38	20	38	35-50	1.30-1.50	0.1-0.2	0.12-0.16	6.0-8.9	0.5-1.0
	38-42	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459432: Bonnydoon-----	0-15 15-19	39 ---	37 ---	18-30 ---	1.40-1.50 ---	0.6-2.0 ---	0.11-0.14 ---	0.0-2.9 ---	1.0-3.0 ---
459433: Los Osos-----	0-18 18-38 38-42	39 20 ---	37 38 ---	20-27 35-50 ---	1.40-1.50 1.30-1.50 ---	0.6-2.0 0.1-0.2 ---	0.14-0.17 0.12-0.16 ---	3.0-5.9 6.0-8.9 ---	2.0-4.0 0.5-1.0 ---
Bonnydoon-----	0-15 15-19	39 ---	37 ---	18-30 ---	1.40-1.50 ---	0.6-2.0 ---	0.11-0.14 ---	0.0-2.9 ---	1.0-3.0 ---
459434: Los Osos-----	0-15 15-30 30-34	39 20 ---	37 38 ---	20-27 35-50 ---	1.40-1.50 1.30-1.50 ---	0.6-2.0 0.1-0.2 ---	0.14-0.17 0.12-0.16 ---	3.0-5.9 6.0-8.9 ---	2.0-4.0 0.5-1.0 ---
Bonnydoon-----	0-11 11-15	39 ---	37 ---	18-30 ---	1.40-1.50 ---	0.6-2.0 ---	0.11-0.14 ---	0.0-2.9 ---	1.0-3.0 ---
459436: Los Osos-----	0-15 15-30 30-34	39 20 ---	37 38 ---	20-27 35-50 ---	1.40-1.50 1.30-1.50 ---	0.6-2.0 0.1-0.2 ---	0.14-0.17 0.12-0.16 ---	0.0-2.9 6.0-8.9 ---	2.0-4.0 0.5-1.0 ---
Bonnydoon-----	0-11 11-15	39 ---	37 ---	18-30 ---	1.40-1.50 ---	0.6-2.0 ---	0.11-0.14 ---	0.0-2.9 ---	1.0-3.0 ---
459437: Maymen-----	0-12 12-16	43 ---	40 ---	10-25 ---	1.45-1.55 ---	0.6-2.0 ---	0.08-0.14 ---	0.0-2.9 ---	0.5-1.0 ---
Maymen variant--	0-4 4-37 37-41	42 22 ---	38 28 ---	15-25 40-60 ---	1.45-1.55 1.30-1.50 ---	0.6-2.0 0.1-0.2 ---	0.10-0.13 0.10-0.13 ---	0.0-2.9 6.0-8.9 ---	1.0-2.0 0.5-1.0 ---
459438: Montara-----	0-13 13-17	35 ---	34 ---	27-35 ---	1.40-1.50 ---	0.2-0.6 ---	0.14-0.19 ---	3.0-5.9 ---	1.0-3.0 ---
459439: Novato-----	0-15 15-60	22 23	28 29	40-60 35-60	1.25-1.35 1.30-1.50	0.1-0.2 0.1-0.2	0.06-0.10 0.03-0.05	6.0-8.9 6.0-8.9	4.0-10 0.5-2.0

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459440:									
Olompali-----	0-13	41	37	18-25	1.30-1.40	0.6-2.0	0.15-0.17	0.0-2.9	1.0-3.0
	13-28	22	28	40-60	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.5-1.0
	28-42	22	28	40-60	1.30-1.50	0.0-0.1	0.10-0.12	6.0-8.9	0.5-1.0
	42-60	22	28	40-60	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.0-0.5
	60-64	---	---	---	---	---	---	---	---
459441:									
Olompali-----	0-13	41	37	18-25	1.30-1.40	0.6-2.0	0.15-0.17	0.0-2.9	1.0-3.0
	13-28	22	28	40-60	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.5-1.0
	28-42	22	28	40-60	1.30-1.50	0.0-0.1	0.10-0.12	6.0-8.9	0.5-1.0
	42-60	22	28	40-60	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.0-0.5
	60-64	---	---	---	---	---	---	---	---
459442:									
Olompali-----	0-13	41	37	18-25	1.30-1.40	0.6-2.0	0.15-0.17	0.0-2.9	1.0-3.0
	13-28	22	28	40-60	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.5-1.0
	28-42	22	28	40-60	1.30-1.50	0.0-0.1	0.10-0.12	6.0-8.9	0.5-1.0
	42-60	22	28	40-60	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.0-0.5
	60-64	---	---	---	---	---	---	---	---
459448:									
Palomarin-----	0-18	39	37	20-27	1.40-1.50	0.6-2.0	0.15-0.17	0.0-2.9	2.0-6.0
	18-29	39	37	20-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	29-41	39	37	20-27	1.40-1.50	0.6-2.0	0.11-0.15	0.0-2.9	0.5-1.0
	41-45	---	---	---	---	---	---	---	---
Wittenberg-----	0-26	39	37	20-27	1.40-1.50	2.0-5.9	0.06-0.10	0.0-2.9	1.0-4.0
	26-50	39	37	20-27	1.40-1.50	2.0-5.9	0.06-0.10	0.0-2.9	0.5-1.0
	50-54	---	---	---	---	---	---	---	---
459452:									
Rodeo-----	0-20	35	34	27-35	1.40-1.50	0.2-0.6	0.17-0.19	3.0-5.9	1.0-3.0
	20-75	28	30	35-50	1.40-1.50	0.1-0.2	0.13-0.16	6.0-8.9	0.5-1.0
459453:									
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---
Bonnydoon-----	0-15	39	37	18-30	1.40-1.50	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	15-19	---	---	---	---	---	---	---	---
459454:									
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---
Bonnydoon-----	0-15	39	37	18-30	1.40-1.50	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	15-19	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459455:									
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---
Bonnydoon-----	0-11	39	37	18-30	1.40-1.50	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	11-15	---	---	---	---	---	---	---	---
459456:									
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---
Bonnydoon-----	0-11	39	37	18-30	1.40-1.50	0.6-2.0	0.11-0.14	0.0-2.9	1.0-3.0
	11-15	---	---	---	---	---	---	---	---
459463:									
Sirdrak-----	0-16	96	2	0-5	1.60-1.70	5.9-20.0	0.05-0.07	0.0-2.9	1.0-5.0
	16-48	95	2	0-5	1.60-1.70	5.9-20.0	0.07-0.10	0.0-2.9	0.5-1.0
	48-73	96	2	0-5	1.60-1.70	5.9-20.0	0.05-0.07	0.0-2.9	0.0-0.5
459467:									
Tamalpais-----	0-19	40	38	20-25	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	1.0-3.0
	19-39	35	34	27-35	1.40-1.50	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
Barnabe variant-	0-13	42	37	15-27	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	1.0-3.0
	13-17	---	---	---	---	---	---	---	---
459468:									
Tamalpais-----	0-19	40	38	20-25	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	1.0-3.0
	19-39	35	34	27-35	1.40-1.50	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
Barnabe variant-	0-13	42	37	15-27	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	1.0-3.0
	13-17	---	---	---	---	---	---	---	---
459469:									
Tamalpais-----	0-19	40	38	20-25	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	1.0-3.0
	19-39	35	34	27-35	1.40-1.50	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
Barnabe variant-	0-13	42	37	15-27	1.40-1.50	0.6-2.0	0.08-0.10	0.0-2.9	1.0-3.0
	13-17	---	---	---	---	---	---	---	---
459471:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459471:									
McMullin-----	0-4	42	38	15-25	1.35-1.55	0.6-2.0	0.10-0.15	0.0-2.9	1.0-3.0
	4-18	37	38	20-35	1.30-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	18-22	---	---	---	---	---	---	---	---
459472:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
McMullin-----	0-4	42	37	15-27	1.35-1.55	0.6-2.0	0.10-0.15	0.0-2.9	1.0-3.0
	4-18	37	38	20-35	1.30-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	18-22	---	---	---	---	---	---	---	---
459473:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
McMullin-----	0-4	42	37	15-27	1.35-1.55	0.6-2.0	0.10-0.15	0.0-2.9	1.0-3.0
	4-18	37	38	20-35	1.30-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	18-22	---	---	---	---	---	---	---	---
459474:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
McMullin-----	0-4	42	37	15-27	1.35-1.55	0.6-2.0	0.10-0.15	0.0-2.9	1.0-3.0
	4-18	37	38	20-35	1.30-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	18-22	---	---	---	---	---	---	---	---
459475:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---
459476:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459477:									
Tocaloma-----	0-19	41	37	18-25	1.40-1.50	2.0-5.9	0.10-0.15	0.0-2.9	1.0-2.0
	19-39	39	37	20-27	1.40-1.50	2.0-5.9	0.07-0.10	0.0-2.9	0.5-1.0
	39-43	---	---	---	---	---	---	---	---
Saurin-----	0-10	34	36	27-33	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	1.0-3.0
	10-33	35	33	30-35	1.40-1.50	0.6-2.0	0.16-0.19	3.0-5.9	0.5-1.0
	33-37	---	---	---	---	---	---	---	---
459481:									
Tomales-----	0-12	68	14	15-20	1.50-1.60	0.6-2.0	0.10-0.12	0.0-2.9	1.0-6.0
	12-24	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	24-47	28	29	35-50	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---
459489:									
Tomales-----	0-12	68	14	15-20	1.50-1.60	0.6-2.0	0.10-0.12	0.0-2.9	1.0-6.0
	12-24	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	24-47	28	29	35-50	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---
Steinbeck-----	0-35	68	14	15-20	1.50-1.60	0.6-2.0	0.12-0.14	0.0-2.9	2.0-4.0
	35-48	36	34	25-35	1.40-1.50	0.6-2.0	0.15-0.19	3.0-5.9	0.5-1.0
	48-52	---	---	---	---	---	---	---	---
459490:									
Tomales-----	0-12	39	37	20-27	1.40-1.50	0.6-2.0	0.14-0.16	0.0-2.9	1.0-6.0
	12-24	42	37	15-27	1.40-1.50	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0
	24-47	28	29	35-50	1.30-1.50	0.0-0.1	0.12-0.15	6.0-8.9	0.0-0.5
	47-51	---	---	---	---	---	---	---	---
Steinbeck-----	0-35	42	38	15-25	1.40-1.50	0.6-2.0	0.13-0.17	0.0-2.9	2.0-4.0
	35-48	36	34	25-35	1.40-1.50	0.6-2.0	0.15-0.19	3.0-5.9	0.5-1.0
	48-52	---	---	---	---	---	---	---	---
459497:									
Yorkville-----	0-14	34	37	27-32	1.40-1.50	0.2-0.6	0.17-0.18	3.0-5.9	1.0-2.0
	14-51	28	30	35-50	1.30-1.50	0.0-0.1	0.15-0.28	6.0-8.9	0.5-1.0
	51-55	---	---	---	---	---	---	---	---
459498:									
Yorkville-----	0-14	34	37	27-32	1.40-1.50	0.2-0.6	0.17-0.18	3.0-5.9	1.0-2.0
	14-51	28	30	35-50	1.30-1.50	0.0-0.1	0.15-0.28	6.0-8.9	0.5-1.0
	51-55	---	---	---	---	---	---	---	---
459499:									
Yorkville-----	0-10	34	37	27-32	1.40-1.50	0.2-0.6	0.17-0.18	3.0-5.9	1.0-2.0
	10-45	28	30	35-50	1.30-1.50	0.0-0.1	0.15-0.28	6.0-8.9	0.5-1.0
	45-49	---	---	---	---	---	---	---	---

Table 15.—Physical Soil Properties—Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
459500:									
Yorkville-----	0-14	34	37	27-32	1.40-1.50	0.2-0.6	0.17-0.18	3.0-5.9	1.0-2.0
	14-51	28	30	35-50	1.30-1.50	0.0-0.1	0.15-0.28	6.0-8.9	0.5-1.0
	51-55	---	---	---	---	---	---	---	---
459501:									
Yorkville-----	0-14	34	37	27-32	1.40-1.50	0.2-0.6	0.17-0.18	3.0-5.9	1.0-2.0
	14-51	28	30	35-50	1.30-1.50	0.0-0.1	0.15-0.28	6.0-8.9	0.5-1.0
	51-55	---	---	---	---	---	---	---	---

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Table 16.-Erosion Properties

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
455964:						
Alambique-----	0-6	.24	.28	3	6	48
	6-30	.24	.32			
	30-34	---	---			
455965:						
Alambique-----	0-12	.15	.28	3	6	48
	12-30	.17	.32			
	30-34	---	---			
McGarvey-----	0-7	.24	.32	3	5	56
	7-14	.28	.28			
	14-37	.28	.28			
	37-41	---	---			
455966:						
Barnabe-----	0-7	.10	.28	1	5	56
	7-12	.15	.32			
	12-16	---	---			
Candlestick-----	0-2	.24	.28	2	3	86
	2-20	.24	.28			
	20-24	.20	.24			
	24-28	---	---			
455967:						
Barnabe-----	0-7	.10	.28	1	5	56
	7-12	.15	.32			
	12-16	---	---			
Rock outcrop.						
455970:						
Candlestick-----	0-2	.24	.28	2	3	86
	2-20	.24	.28			
	20-24	.20	.24			
	24-28	---	---			
Barnabe-----	0-7	.10	.28	1	5	56
	7-12	.15	.32			
	12-16	---	---			
455971:						
Candlestick-----	0-2	.24	.28	2	3	86
	2-20	.24	.28			
	20-24	.20	.24			
	24-28	---	---			
Kron-----	0-3	.24	.28	1	3	86
	3-14	.49	.55			
	14-18	---	---			
Buriburi-----	0-30	.15	.28	2	7	38
	30-34	---	---			
455972:						
Candlestick variant----	0-21	.28	.32	5	6	48
	21-65	.24	.28			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
455973: Candlestick variant-----	0-21 21-65	.28 .24	.32 .28	5	6	48
455974: Fagan-----	0-5 5-26 26-43 43-47	.28 .24 .24 ---	.32 .28 .28 ---	4	6	48
455976: Los Gatos-----	0-22 22-36 36-40	.28 .32 ---	.32 .37 ---	2	6	48
455977: Maymen-----	0-12 12-16	.17 ---	.32 ---	1	6	48
455980: Obispo-----	0-12 12-16	.15 ---	.20 ---	1	4	86
455981: Obispo-----	0-12 12-16	.15 ---	.20 ---	1	4	86
455982: Orthents-----	0-60	---	---	5	3	86
455983: Orthents-----	0-60	---	---	5	3	86
455984: Orthents-----	0-60	---	---	5	3	86
Urban land.						
455985: Orthents-----	0-60	---	---	5	3	86
Urban land.						
455986. Pits and dumps						
455988: Orthents-----	0-5	---	---	1	3	86
Rock outcrop.						
455989: Scarper-----	0-16 16-25 25-29	.17 .20 ---	.28 .32 ---	3	4	86
Miramar-----	0-15 15-24 24-29 29-33	.28 .24 .32 ---	.32 .28 .37 ---	3	5	56

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
455990: Sirdrak-----	0-17 17-60	.15 .24	.15 .24	5	1	180
455991 Typic Argiustolls-----	0-11 11-37 37-60	.32 .32 .24	.32 .37 .28	5	5	56
Urban land.						
455992: Urban land.						
455993: Urban land.						
Orthents-----	0-60	---	---	5	3	86
455994: Urban land.						
Orthents-----	0-60	---	---	5	3	86
455995: Urban land.						
Orthents-----	0-40 40-60	---	---	5	3	86
455996: Urban land.						
Orthents-----	0-60	---	---	5	3	86
455997: Urban land.						
Sirdrak-----	0-17 17-60	.15 .24	.15 .24	5	1	180
455998: Zeni-----	0-9 9-26 26-30	.17 .15 ---	.28 .24 ---	2	6	48
Zeni variant-----	0-13 13-31 31-39 39-43	.15 .10 .20 ---	.24 .24 .28 ---	2	6	48
456000. Beaches						
456001. Water						
456330: Botella-----	0-28 28-60	.17 .32	.24 .37	5	6	48

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
456331: Butano-----	0-23	.15	.24	2	7	48
	23-28	.15	.24			
	28-36	.20	.37			
	36-40	---	---			
456344: Coastal beaches-----	0-6	.15	.17	5	1	250
	6-60	.15	.17			
456364: Denison-----	0-10	.17	.20	5	6	48
	10-45	.17	.20			
	45-61	.37	.43			
	61-70	.32	.37			
456365: Denison-----	0-10	.28	.28	5	3	86
	10-20	.24	.24			
	20-55	.17	.20			
	55-71	.32	.37			
456367: Denison-----	0-15	.24	.28	5	6	48
	15-45	.17	.20			
	45-60	.37	.43			
	60-70	.32	.37			
456368: Denison-----	0-15	.24	.28	5	6	48
	15-45	.17	.20			
	45-60	.37	.43			
	60-70	.32	.37			
456376: Elkhorn-----	0-25	.20	.24	5	3	86
	25-60	.17	.20			
456377: Elkhorn-----	0-25	.20	.24	5	3	86
	25-60	.17	.20			
456379: Elkhorn-----	0-20	.20	.24	4	3	86
	20-60	.17	.20			
456382: Farallone-----	0-20	.20	.24	5	5	56
	20-48	.28	.32			
	48-60	.28	.32			
456383: Farallone-----	0-20	.20	.24	5	5	56
	20-48	.28	.32			
	48-60	.28	.32			
456384: Farallone-----	0-20	.20	.24	5	3	56
	20-48	.28	.32			
	48-60	.28	.32			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
456385: Farallone-----	0-20	.20	.24	5	3	86
	20-48	.28	.32			
	48-60	.28	.32			
456386: Farallone-----	0-15	.20	.24	5	3	86
	15-48	.28	.32			
	48-60	.28	.32			
456387: Farallone-----	0-15	.20	.24	5	3	86
	15-48	.28	.32			
	48-60	.28	.32			
456388: Farallone-----	0-20	.20	.24	5	3	86
	20-30	.28	.32			
	30-60	.10	.20			
456390: Farallone-----	0-15	.15	.17	5	2	134
	15-48	.28	.32			
	48-60	.28	.32			
456394: Gazos-----	0-12	.20	.24	2	6	48
	12-25	.49	.55			
	25-29	---	---			
456397: Gazos-----	0-12	.20	.24	2	6	48
	12-25	.49	.55			
	25-29	---	---			
456398: Gazos-----	0-12	.20	.24	2	6	48
	12-25	.49	.55			
	25-29	---	---			
456399: Gazos (dark phase)-----	0-12	.20	.24	2	6	48
	12-24	.49	.55			
	24-28	---	---			
Calera-----	0-10	.20	.24	2	6	48
	10-30	.15	.20			
	30-34	---	---			
456400: Gazos (dark phase)-----	0-12	.20	.24	2	6	48
	12-24	.49	.55			
	24-28	---	---			
Calera-----	0-10	.20	.24	2	6	48
	10-30	.15	.20			
	30-34	---	---			
456401: Gazos (dark phase)-----	0-12	.20	.24	2	6	48
	12-24	.49	.55			
	24-28	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
456401:						
Calera-----	0-10	.20	.24	2	6	48
	10-30	.15	.20			
	30-34	---	---			
456403:						
Gazos (dark phase)-----	0-12	.20	.24	2	6	48
	12-24	.49	.55			
	24-28	---	---			
Sweeney-----	0-7	.20	.24	4	6	48
	7-22	.28	.32			
	22-50	.28	.32			
	50-54	---	---			
456404:						
Gazos-----	0-16	.37	.43	2	6	48
	16-28	.49	.55			
	28-32	---	---			
Lobitos-----	0-22	.37	.49	2	6	48
	22-33	.20	.37			
	33-38	.20	.37			
	38-42	---	---			
456405:						
Gazos-----	0-12	.37	.43	2	6	48
	12-24	.49	.55			
	24-28	---	---			
Lobitos-----	0-18	.37	.49	2	6	48
	18-29	.20	.37			
	29-34	.20	.37			
	34-38	---	---			
456406:						
Gazos-----	0-12	.37	.43	2	6	48
	12-24	.49	.55			
	24-28	---	---			
Lobitos-----	0-18	.37	.49	2	6	48
	18-29	.20	.37			
	29-34	.20	.37			
	34-38	---	---			
456412.						
Gullied land (alluvial soil material)						
456414.						
Gullied land (Tierra and Watsonville soil materials)						
456416:						
Hugo-----	0-8	.17	.20	4	6	48
	8-45	.17	.32			
	45-49	---	---			
Josephine-----	0-12	.20	.24	4	6	48
	12-47	.24	.28			
	47-51	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
456418:						
Hugo-----	0-8	.17	.20	4	6	48
	8-45	.17	.32			
	45-49	---	---			
Josephine-----	0-12	.20	.24	4	6	48
	12-47	.24	.28			
	47-51	---	---			
456420:						
Hugo-----	0-8	.17	.20	4	6	48
	8-45	.17	.32			
	45-49	---	---			
Josephine-----	0-12	.20	.24	4	6	48
	12-47	.24	.28			
	47-51	---	---			
456423:						
Hugo-----	0-4	.17	.20	4	3	86
	4-41	.17	.32			
	41-45	---	---			
Josephine-----	0-8	.17	.20	4	3	86
	8-43	.20	.24			
	43-47	---	---			
456444:						
Lobitos-----	0-18	.28	.32	2	6	48
	18-29	.20	.37			
	29-34	.20	.37			
	34-38	---	---			
456445:						
Lobitos-----	0-18	.37	.43	2	6	48
	18-29	.20	.37			
	29-34	.20	.37			
	34-38	---	---			
456446:						
Lobitos-----	0-18	.28	.32	2	6	48
	18-29	.20	.37			
	29-34	.20	.37			
	34-38	---	---			
456460:						
Mixed alluvial land-----	0-10	.10	.15	5	1	180
	10-30	.24	.28			
	30-60	.17	.32			
456464:						
Miramar-----	0-22	.28	.32	3	3	86
	22-37	.17	.20			
	37-41	---	---			
456465:						
Miramar-----	0-22	.28	.32	3	3	86
	22-37	.17	.20			
	37-41	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
456466: Miramar-----	0-22	.32	.28	3	3	86
	22-37	.17	.20			
	37-41	---	---			
456467: Miramar-----	0-18	.28	.32	2	3	86
	18-33	.17	.20			
	33-37	---	---			
456468: Miramar-----	0-22	.28	.32	3	3	86
	22-37	.17	.20			
	37-41	---	---			
456469: Montara-----	0-6	.15	.32	1	7	38
	6-15	.15	.28			
	15-19	---	---			
456475: Rough broken land.						
Lithic Xerorthents-----	0-4	---	---	1	8	0
456485: Stabilized dune land----	0-6	.17	.17	5	1	250
	6-60	.17	.17			
456486: Sheridan-----	0-5	.17	.24	3	3	86
	5-38	.24	.32			
	38-42	---	---			
456487: Sheridan-----	0-5	.17	.24	3	3	86
	5-38	.24	.32			
	38-42	---	---			
456488: Sheridan-----	0-5	.17	.24	3	3	86
	5-38	.24	.32			
	38-42	---	---			
456494: Soquel-----	0-30	.20	.24	5	6	48
	30-60	.43	.55			
	60-70	.24	.32			
456506: Sweeney-----	0-7	.20	.24	4	6	48
	7-22	.17	.20			
	22-50	.28	.32			
	50-54	---	---			
456511: Sweeney-----	0-7	.15	.20	4	7	38
	7-22	.15	.20			
	22-50	.24	.32			
	50-54	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
456517: Tierra-----	0-17	.28	.32	3	6	48
	17-37	.28	.32			
	37-60	.20	.24			
456518: Tierra-----	0-17	.28	.32	3	6	48
	17-37	.28	.32			
	37-60	.20	.24			
456519: Tierra-----	0-13	.28	.32	2	6	48
	13-33	.28	.32			
	33-60	.20	.24			
456520: Tierra-----	0-17	.28	.32	3	6	48
	17-37	.28	.32			
	37-60	.20	.24			
459393: Ballard-----	0-19	.20	.32	5	6	48
	19-65	.20	.37			
459395: Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459396. Beaches						
459397: Blucher-----	0-7	.37	.37	5	5	56
	7-23	.43	.43			
	23-60	.32	.32			
Cole-----	0-5	.37	.37	5	6	48
	5-14	.32	.32			
	14-60	.32	.32			
459398: Bonnydoon-----	0-15	.20	.37	2	7	38
	15-19	---	---			
459399: Bonnydoon-----	0-15	.20	.37	2	7	38
	15-19	---	---			
459402: Centissima-----	0-15	.32	.32	3	5	56
	15-22	.20	.37			
	22-33	.15	.37			
	33-37	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459403:						
Centissima-----	0-15	.32	.32	3	5	56
	15-22	.20	.37			
	22-33	.15	.37			
	33-37	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459404:						
Centissima-----	0-15	.32	.32	3	5	56
	15-22	.20	.37			
	22-33	.15	.37			
	33-37	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459406:						
Cortina-----	0-10	.20	.24	4	5	56
	10-44	.15	.20			
	44-60	.10	.17			
459407:						
Cronkhite-----	0-15	.37	.37	4	6	48
	15-26	.32	.32			
	26-45	.17	.17			
	45-55	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459408:						
Cronkhite-----	0-15	.37	.37	4	6	48
	15-26	.32	.32			
	26-45	.17	.17			
	45-55	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459409:						
Cronkhite-----	0-15	.37	.37	4	6	48
	15-26	.32	.32			
	26-45	.17	.17			
	45-55	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459410:						
Cronkhite-----	0-15	.37	.37	4	6	48
	15-26	.32	.32			
	26-45	.17	.17			
	45-55	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459410: Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459411: Dipsea-----	0-8	.10	.37	4	7	38
	8-25	.10	.37			
	25-48	.10	.37			
	48-52	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459412: Dipsea-----	0-8	.10	.37	4	7	38
	8-25	.10	.37			
	25-48	.10	.37			
	48-52	---	---			
Barnabe-----	0-8	.15	.37	1	7	38
	8-16	.15	.32			
	16-20	---	---			
459414. Dune land						
459415: Felton variant-----	0-23	.37	.37	4	6	48
	23-34	.32	.32			
	34-47	.32	.32			
	47-51	---	---			
Soulajule-----	0-17	.37	.37	3	6	48
	17-22	.17	.37			
	22-28	.10	.37			
	28-32	---	---			
459416: Felton variant-----	0-23	.37	.37	4	6	48
	23-34	.32	.32			
	34-47	.32	.32			
	47-51	---	---			
Soulajule-----	0-17	.37	.37	3	6	48
	17-22	.17	.37			
	22-28	.10	.37			
	28-32	---	---			
459417: Felton variant-----	0-23	.37	.37	4	6	48
	23-34	.32	.32			
	34-47	.32	.32			
	47-51	---	---			
Soulajule-----	0-17	.37	.37	3	6	48
	17-22	.17	.37			
	22-28	.10	.37			
	28-32	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459418: Felton variant-----	0-23	.37	.37	4	6	48
	23-34	.32	.32			
	34-47	.32	.32			
	47-51	---	---			
Soulajule-----	0-17	.37	.37	3	6	48
	17-22	.17	.37			
	22-28	.10	.37			
	28-32	---	---			
459419. Fluvents						
459420: Gilroy-----	0-12	.37	.37	2	6	48
	12-21	.32	.37			
	21-30	.24	.37			
	30-34	---	---			
Gilroy variant-----	0-21	.32	.37	3	6	48
	21-45	.24	.32			
	45-49	---	---			
Bonnydoon variant-----	0-18	.32	.37	1	6	48
	18-22	---	---			
459421: Henneke-----	0-3	.10	.32	1	7	48
	3-16	.15	.37			
	16-20	---	---			
459422: Humaquepts-----	0-5	---	---	5	8	0
	5-60	.24	.24			
459423. Hydraquents						
459425: Inverness-----	0-22	.28	.28	4	5	56
	22-36	.32	.32			
	36-60	.32	.32			
	60-64	---	---			
459427: Inverness-----	0-22	.28	.28	4	5	56
	22-36	.32	.32			
	36-60	.32	.32			
	60-64	---	---			
459432: Los Osos-----	0-18	.37	.37	3	6	48
	18-38	.28	.28			
	38-42	---	---			
Bonnydoon-----	0-15	.20	.37	2	7	38
	15-19	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459433:						
Los Osos-----	0-18	.37	.37	3	6	48
	18-38	.28	.28			
	38-42	---	---			
Bonnydoon-----	0-15	.20	.37	2	8	0
	15-19	---	---			
459434:						
Los Osos-----	0-15	.37	.37	3	6	48
	15-30	.28	.28			
	30-34	---	---			
Bonnydoon-----	0-11	.20	.37	2	7	38
	11-15	---	---			
459436:						
Los Osos-----	0-15	.37	.37	3	6	48
	15-30	.28	.28			
	30-34	---	---			
Urban land.						
Bonnydoon-----	0-11	.20	.37	2	7	38
	11-15	---	---			
459437:						
Maymen-----	0-12	.20	.24	1	6	48
	12-16	---	---			
Maymen variant-----	0-4	.20	.37	2	6	48
	4-37	.20	.37			
	37-41	---	---			
459438:						
Montara-----	0-13	.32	.43	1	6	48
	13-17	---	---			
459439:						
Novato-----	0-15	.20	.20	5	8	0
	15-60	.32	.32			
459440:						
Olompali-----	0-13	.37	.37	3	6	48
	13-28	.24	.24			
	28-42	.17	.37			
	42-60	.24	.24			
	60-64	---	---			
459441:						
Olompali-----	0-13	.37	.37	3	6	48
	13-28	.24	.24			
	28-42	.17	.37			
	42-60	.24	.24			
	60-64	---	---			
459442:						
Olompali-----	0-13	.37	.37	3	6	48
	13-28	.24	.24			
	28-42	.17	.37			
	42-60	.24	.24			
	60-64	---	---			

Soil Survey of Golden Gate National Recreation Area, California

Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459448:						
Palomarin-----	0-18	.32	.37	3	6	48
	18-29	.37	.37			
	29-41	.20	.37			
	41-45	---	---			
Wittenberg-----	0-26	.10	.37	3	8	0
	26-50	.10	.37			
	50-54	---	---			
459451.						
Rock outcrop-Xerorthents						
459452:						
Rodeo-----	0-20	.32	.32	5	6	48
	20-75	.20	.37			
459453:						
Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
Bonnydoon-----	0-15	.20	.37	2	7	38
	15-19	---	---			
459454:						
Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
Bonnydoon-----	0-15	.20	.37	2	7	38
	15-19	---	---			
459455:						
Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
Bonnydoon-----	0-11	.20	.37	2	7	38
	11-15	---	---			
459456:						
Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
Bonnydoon-----	0-11	.20	.37	2	7	38
	11-15	---	---			
459463:						
Sirdrak-----	0-16	.15	.15	5	1	180
	16-48	.15	.15			
	48-73	.15	.15			
459467:						
Tamalpais-----	0-19	.15	.37	2	8	0
	19-39	.15	.32			
	39-43	---	---			
Barnabe variant-----	0-13	.15	.37	1	8	0
	13-17	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459468:						
Tamalpais-----	0-19	.15	.37	2	8	0
	19-39	.15	.32			
	39-43	---	---			
Barnabe variant-----	0-13	.15	.37	1	8	0
	13-17	---	---			
459469:						
Tamalpais-----	0-19	.15	.37	2	8	0
	19-39	.15	.32			
	39-43	---	---			
Barnabe variant-----	0-13	.15	.37	1	8	0
	13-17	---	---			
459471:						
Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			
McMullin-----	0-4	.17	.32	1	7	38
	4-18	.20	.37			
	18-22	---	---			
459472:						
Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			
McMullin-----	0-4	.17	.32	1	7	38
	4-18	.20	.37			
	18-22	---	---			
459473:						
Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			
McMullin-----	0-4	.17	.32	1	7	38
	4-18	.20	.37			
	18-22	---	---			
Urban land.						
459474:						
Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			
McMullin-----	0-4	.17	.32	1	7	38
	4-18	.20	.37			
	18-22	---	---			
Urban land.						
459475:						
Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459475: Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
459476: Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			
Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
459477: Tocaloma-----	0-19	.32	.37	3	6	48
	19-39	.10	.37			
	39-43	---	---			
Saurin-----	0-10	.32	.37	3	6	48
	10-33	.37	.37			
	33-37	---	---			
459481: Tomaes-----	0-12	.32	.32	4	3	86
	12-24	.37	.37			
	24-47	.28	.28			
	47-51	---	---			
459489: Tomaes-----	0-12	.32	.32	4	3	86
	12-24	.37	.37			
	24-47	.28	.28			
	47-51	---	---			
Steinbeck-----	0-35	.28	.28	4	3	86
	35-48	.32	.32			
	48-52	---	---			
459490: Tomaes-----	0-12	.32	.32	4	6	48
	12-24	.37	.37			
	24-47	.28	.28			
	47-51	---	---			
Steinbeck-----	0-35	.28	.28	4	6	48
	35-48	.32	.32			
	48-52	---	---			
459494. Urban land-Xerorthents						
459495. Xerorthents						
459497: Yorkville-----	0-14	.32	.32	4	6	48
	14-51	.24	.24			
	51-55	---	---			

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Table 16.—Erosion Properties—Continued

Map unit symbol and soil name	Depth (inches)	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
459498: Yorkville-----	0-14	.32	.32	4	6	48
	14-51	.24	.24			
	51-55	---	---			
459499: Yorkville-----	0-10	.32	.32	4	6	48
	10-45	.24	.24			
	45-49	---	---			
459500: Yorkville-----	0-14	.32	.32	4	6	48
	14-51	.24	.24			
	51-55	---	---			
Rock outcrop.						
459501: Yorkville-----	0-14	.32	.32	4	6	48
	14-51	.24	.24			
	51-55	---	---			
Rock outcrop.						
459502. Water						
1412772. Water						
1611084. No digital data available						

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Table 17.—Total Soil Carbon

(This table displays soil organic carbon (SOC) and soil inorganic carbon (SIC) in kilograms per square meter to a depth of 2 meters or to the representative top depth of any kind of bedrock or any cemented soil horizon. SOC and SIC are reported on a volumetric whole soil basis, corrected for representative rock fragments indicated in the database. SOC is converted from horizon soil organic matter of the fraction of the soil less than 2 mm in diameter. If soil organic matter indicated in the database is NULL, SOC is assumed to be zero. SIC is converted from horizon calcium carbonate content fraction of the soil less than 2 mm in diameter. If horizon calcium carbonate indicated in the database is NULL, SIC is assumed to be zero. A weighted average of all horizons is used in the calculations. Only major components of a map unit are displayed in this table)

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
455964: Alambique (85%)-----	7	0
455965: Alambique (45%)----- McGarvey (35%)-----	7	0
455966: Barnabe (45%)----- Candlestick (35%)-----	3	0
455967: Barnabe (40%)----- Rock outcrop (40%)-----	3	0
455970: Candlestick (45%)----- Barnabe (25%)-----	7	0
455971: Candlestick (40%)----- Kron (25%)----- Buriburi (20%)-----	3	0
455972: Candlestick variant (85%)-----	7	0
455973: Candlestick variant (85%)-----	11	0
455974: Fagan (85%)-----	11	0
455976: Los Gatos (85%)-----	11	0
455977: Maymen (85%)-----	12	0
	1	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
455980: Obispo (85%)-----	4	0
455981: Obispo (85%)-----	4	0
455982: Orthents (85%)-----	3	0
455983: Orthents (85%)-----	3	0
455984: Orthents (55%)-----	3	0
Urban land (35%)-----	0	0
455985: Orthents (50%)-----	3	0
Urban land (35%)-----	0	0
455986: Pits (50%)-----	0	0
Dumps (50%)-----	0	0
455988: Rock outcrop (45%)-----	0	0
Orthents (45%)-----	0	0
455989: Scarper (40%)-----	7	0
Miramar (35%)-----	8	0
455990: Sirdrak (85%)-----	15	0
455991: Typic Argiustolls (50%)-----	9	0
Urban land (30%)-----	0	0
455992: Urban land (85%)-----	0	0
455993: Urban land (50%)-----	0	0
Orthents (45%)-----	3	0
455994: Urban land (50%)-----	0	0
Orthents (40%)-----	3	0
455995: Urban land (65%)-----	0	0
Orthents (30%)-----	2	0

Soil Survey of Golden Gate National Recreation Area, California

Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
455996:		
Urban land (65%)-----	0	0
Orthents (25%)-----	3	0
455997:		
Urban land (45%)-----	0	0
Sirdrak (35%)-----	15	0
455998:		
Zeni (40%)-----	5	0
Zeni variant (35%)-----	8	0
456000:		
Beaches (100%)-----	0	0
456001:		
Water (100%)-----	0	0
456330:		
Botella (85%)-----	24	0
456331:		
Butano (85%)-----	11	0
456344:		
Coastal beaches (85%)-----	1	0
456364:		
Denison (85%)-----	10	0
456365:		
Denison (85%)-----	9	0
456367:		
Denison (85%)-----	12	0
456368:		
Denison (85%)-----	12	0
456376:		
Elkhorn (85%)-----	22	0
456377:		
Elkhorn (85%)-----	22	0
456379:		
Elkhorn (85%)-----	18	0
456382:		
Farallone (85%)-----	10	0
456383:		
Farallone (85%)-----	10	0
456384:		
Farallone (85%)-----	10	0
456385:		
Farallone (85%)-----	10	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
456386: Farallone (85%)-----	8	0
456387: Farallone (85%)-----	8	0
456388: Farallone (85%)-----	10	0
456390: Farallone (85%)-----	7	0
456394: Gazos (85%)-----	9	0
456397: Gazos (85%)-----	9	0
456398: Gazos (85%)-----	9	0
456399: Gazos (dark phase) (60%)----- Calera (20%)-----	9 7	0 0
456400: Gazos (dark phase) (40%)----- Calera (40%)-----	9 7	0 0
456401: Gazos (dark phase) (40%)----- Calera (40%)-----	9 7	0 0
456403: Gazos (dark phase) (40%)----- Sweeney (40%)-----	9 8	0 0
456404: Gazos (40%)----- Lobitos (40%)-----	12 10	0 0
456405: Gazos (40%)----- Lobitos (40%)-----	9 9	0 0
456406: Gazos (40%)----- Lobitos (40%)-----	9 9	0 0
456412: Gullied land (alluvial soil material) (85%)-----	0	0
456414: Gullied land (Tierra and Watsonville soil materials) (85%)-----	0	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC		SIC	
	kg/m ²		kg/m ²	
456416:				
Hugo (40%)-----	7		0	
Josephine (40%)-----	10		0	
456418:				
Hugo (40%)-----	7		0	
Josephine (40%)-----	10		0	
456420:				
Hugo (40%)-----	7		0	
Josephine (40%)-----	10		0	
456423:				
Hugo (40%)-----	5		0	
Josephine (40%)-----	8		0	
456444:				
Lobitos (85%)-----	9		0	
456445:				
Lobitos (85%)-----	9		0	
456446:				
Lobitos (85%)-----	9		0	
456460:				
Mixed alluvial land (90%)-----	3		0	
456464:				
Miramar (85%)-----	10		0	
456465:				
Miramar (85%)-----	10		0	
456466:				
Miramar (85%)-----	10		0	
456467:				
Miramar (85%)-----	9		0	
456468:				
Miramar (85%)-----	10		0	
456469:				
Montara (85%)-----	2		0	
456475:				
Rough broken land (50%)-----	0		0	
Lithic Xerorthents (35%)-----	0		0	
456485:				
Stabilized dune land (90%)-----	0		0	
456486:				
Sheridan (85%)-----	7		0	

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
456487: Sheridan (85%)-----	7	0
456488: Sheridan (85%)-----	7	0
456494: Soquel (85%)-----	17	0
456506: Sweeney (85%)-----	8	0
456511: Sweeney (75%)-----	7	0
456517: Tierra (85%)-----	13	0
456518: Tierra (85%)-----	13	0
456519: Tierra (85%)-----	10	0
456520: Tierra (85%)-----	13	0
459393: Ballard (85%)-----	12	0
459395: Barnabe (85%)-----	4	0
459396: Beaches (100%)-----	0	0
459397: Blucher (40%)-----	14	0
Cole (30%)-----	19	0
459398: Bonnydoon (85%)-----	5	0
459399: Bonnydoon (85%)-----	5	0
459402: Centissima (50%)-----	10	0
Barnabe (20%)-----	4	0
459403: Centissima (50%)-----	10	0
Barnabe (20%)-----	4	0
459404: Centissima (40%)-----	10	0
Barnabe (20%)-----	4	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
459406: Cortina (85%)-----	3	0
459407: Cronkhite (50%)-----	12	0
Barnabe (30%)-----	4	0
459408: Cronkhite (50%)-----	12	0
Barnabe (30%)-----	4	0
459409: Cronkhite (40%)-----	12	0
Barnabe (30%)-----	4	0
459410: Cronkhite (40%)-----	12	0
Barnabe (30%)-----	4	0
459411: Dipsea (50%)-----	13	0
Barnabe (20%)-----	4	0
459412: Dipsea (50%)-----	13	0
Barnabe (20%)-----	4	0
459414: Dune land (95%)-----	0	0
459415: Felton variant (40%)-----	12	0
Soulajule (40%)-----	6	0
459416: Felton variant (40%)-----	12	0
Soulajule (40%)-----	6	0
459417: Felton variant (50%)-----	12	0
Soulajule (40%)-----	6	0
459418: Felton variant (50%)-----	12	0
Soulajule (40%)-----	6	0
459419: Fluents (100%)-----	0	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
459420:		
Gilroy (35%)-----	12	0
Gilroy variant (25%)-----	11	0
Bonnydoon variant (20%)-----	9	0
459421:		
Henneke (85%)-----	2	0
459422:		
Humaquepts (90%)-----	10	0
459423:		
Hydraquents (90%)-----	0	0
459425:		
Inverness (85%)-----	22	0
459427:		
Inverness (85%)-----	22	0
459432:		
Los Osos (60%)-----	14	0
Bonnydoon (25%)-----	5	0
459433:		
Los Osos (60%)-----	14	0
Bonnydoon (20%)-----	5	0
459434:		
Los Osos (60%)-----	12	0
Bonnydoon (20%)-----	4	0
459436:		
Los Osos (40%)-----	12	0
Urban land (30%)-----	0	0
Bonnydoon (20%)-----	4	0
459437:		
Maymen (50%)-----	1	0
Maymen variant (20%)-----	5	0
459438:		
Montara (85%)-----	5	0
459439:		
Novato (90%)-----	32	0
459440:		
Olmopali (85%)-----	10	0
459441:		
Olmopali (85%)-----	10	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
459442: Olompali (85%)-----	10	0
459448: Palomarin (40%)-----	17	0
Wittenberg (30%)-----	9	0
459451: Rock outcrop (50%)-----	0	0
Xerorthents (30%)-----	0	0
459452: Rodeo (90%)-----	17	0
459453: Saurin (50%)-----	7	0
Bonnydoon (30%)-----	5	0
459454: Saurin (40%)-----	7	0
Bonnydoon (30%)-----	5	0
459455: Saurin (50%)-----	7	0
Bonnydoon (40%)-----	4	0
459456: Saurin (50%)-----	7	0
Bonnydoon (40%)-----	4	0
459463: Sirdrak (90%)-----	19	0
459467: Tamalpais (60%)-----	6	0
Barnabe variant (30%)-----	3	0
459468: Tamalpais (50%)-----	6	0
Barnabe variant (30%)-----	3	0
459469: Tamalpais (50%)-----	6	0
Barnabe variant (40%)-----	3	0
459471: Tocaloma (40%)-----	7	0
McMullin (35%)-----	3	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m ²	kg/m ²
459472:		
Tocaloma (40%)-----	7	0
McMullin (35%)-----	3	0
459473:		
Tocaloma (30%)-----	7	0
McMullin (25%)-----	3	0
Urban land (25%)-----	0	0
459474:		
Tocaloma (40%)-----	7	0
McMullin (20%)-----	3	0
Urban land (20%)-----	0	0
459475:		
Tocaloma (35%)-----	7	0
Saurin (30%)-----	7	0
459476:		
Tocaloma (40%)-----	7	0
Saurin (30%)-----	7	0
459477:		
Tocaloma (40%)-----	7	0
Saurin (30%)-----	7	0
459481:		
Tomales (85%)-----	13	0
459489:		
Tomales (50%)-----	13	0
Steinbeck (30%)-----	26	0
459490:		
Tomales (50%)-----	12	0
Steinbeck (30%)-----	25	0
459494:		
Urban land (70%)-----	0	0
Xerorthents (20%)-----	0	0
459495:		
Xerorthents (100%)-----	0	0
459497:		
Yorkville (85%)-----	10	0
459498:		
Yorkville (85%)-----	10	0

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Table 17.—Total Soil Carbon—Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<u>kg/m²</u>	<u>kg/m²</u>
459499: Yorkville (85%)-----	9	0
459500: Yorkville (60%)-----	10	0
Rock outcrop (20%)-----	0	0
459501: Yorkville (60%)-----	10	0
Rock outcrop (20%)-----	0	0
459502: Water (100%)-----	0	0
1412772: Water (100%)-----	0	0
1611084: No digital data available (100%)-----	0	0

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Table 18.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
455964:					
Alambique-----	0-6	5.0-15.0	---	5.1-6.0	0.0-2.0
	6-30	10.0-15.0	---	5.1-6.0	0.0-2.0
	30-34	---	---	---	---
455965:					
Alambique-----	0-12	10.0-20.0	---	5.1-6.0	0.0-2.0
	12-30	10.0-15.0	---	5.1-6.0	0.0-2.0
	30-34	---	---	---	---
McGarvey-----	0-7	10.0-20.0	---	6.1-6.5	0.0-2.0
	7-14	10.0-20.0	---	6.6-7.3	0.0-2.0
	14-37	15.0-25.0	---	6.1-7.3	0.0-2.0
	37-41	---	---	---	---
455966:					
Barnabe-----	0-7	10.0-15.0	---	5.6-6.5	0.0-2.0
	7-12	10.0-15.0	---	5.6-6.5	0.0-2.0
	12-16	---	---	---	---
Candlestick-----	0-2	10.0-15.0	---	5.6-6.5	0.0-2.0
	2-20	10.0-15.0	---	5.6-6.5	0.0-2.0
	20-24	10.0-20.0	---	6.1-7.3	0.0-2.0
	24-28	---	---	---	---
455967:					
Barnabe-----	0-7	10.0-15.0	---	5.6-6.5	0.0-2.0
	7-12	10.0-15.0	---	5.6-6.5	0.0-2.0
	12-16	---	---	---	---
455970:					
Candlestick-----	0-2	10.0-15.0	---	5.6-6.5	0.0-2.0
	2-20	10.0-15.0	---	5.6-6.5	0.0-2.0
	20-24	10.0-20.0	---	6.1-7.3	0.0-2.0
	24-28	---	---	---	---
Barnabe-----	0-7	10.0-15.0	---	5.6-6.5	0.0-2.0
	7-12	10.0-15.0	---	5.6-6.5	0.0-2.0
	12-16	---	---	---	---
455971:					
Candlestick-----	0-2	10.0-15.0	---	5.6-6.5	2
	2-20	10.0-15.0	---	5.6-6.5	2
	20-24	10.0-20.0	---	6.1-7.3	2
	24-28	---	---	---	---
Kron-----	0-3	10.0-20.0	---	5.6-6.5	0.0-2.0
	3-14	10.0-15.0	---	5.6-6.5	0.0-2.0
	14-18	---	---	---	---
Buriburi-----	0-30	10.0-20.0	---	5.6-6.5	2
	30-34	---	---	---	---
455972:					
Candlestick variant--	0-21	10.0-20.0	---	5.6-6.0	0.0-2.0
	21-65	10.0-20.0	---	6.1-7.8	0.0-2.0

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
455973: Candlestick variant--	0-21	10.0-20.0	---	5.6-6.0	0.0-2.0
	21-65	10.0-20.0	---	6.1-8.4	0.0-2.0
455974: Fagan-----	0-5	15.0-25.0	---	5.6-7.3	0.0-2.0
	5-26	25.0-35.0	---	5.6-7.3	0.0-2.0
	26-43	35.0-45.0	---	5.6-7.3	0.0-2.0
	43-47	---	---	---	---
455976: Los Gatos-----	0-22	15.0-20.0	---	5.6-7.3	0.0-2.0
	22-36	10.0-20.0	---	5.6-7.3	0.0-2.0
	36-40	---	---	---	---
455977: Maymen-----	0-12	8.0-12.0	---	5.1-6.5	0.0-2.0
	12-16	---	---	---	---
455980: Obispo-----	0-12	25.0-35.0	---	6.6-8.4	0.0-2.0
	12-16	---	---	---	---
455981: Obispo-----	0-12	25.0-35.0	---	6.6-8.4	0.0-2.0
	12-16	---	---	---	---
455989: Scarper-----	0-16	10.0-15.0	---	5.6-6.5	0.0-2.0
	16-25	5.0-10.0	---	6.1-6.5	0.0-2.0
	25-29	---	---	---	---
Miramar-----	0-15	10.0-20.0	---	6.1-7.3	0.0-2.0
	15-24	15.0-20.0	---	6.1-6.5	0.0-2.0
	24-29	5.0-15.0	---	6.1-6.5	0.0-2.0
	29-33	---	---	---	---
455990: Sirdrak-----	0-17	7.0-10.0	---	5.1-6.5	0
	17-60	1.0-2.0	---	5.1-6.5	0
455991: Typic Argiustolls----	0-11	0.0-0.0	---	5.6-7.3	0
	11-37	0.0-0.0	---	5.6-6.5	0
	37-60	0.0-0.0	---	5.1-6.0	0
455997: Sirdrak-----	0-17	7.0-10.0	---	5.1-6.5	0.0-2.0
	17-60	1.0-2.0	---	5.1-6.5	0.0-2.0
455998: Zeni-----	0-9	5.0-15.0	---	5.1-6.5	2
	9-26	10.0-15.0	10.0-15.0	5.1-5.5	2
	26-30	---	---	---	---
Zeni variant-----	0-13	10.0-15.0	---	5.6-6.5	2
	13-31	15.0-25.0	---	5.1-6.0	2
	31-39	10.0-20.0	---	5.1-6.0	2
	39-43	---	---	---	---

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
456330: Botella-----	0-28	10.0-25.0	---	6.1-7.3	0
	28-60	15.0-20.0	---	6.1-7.3	0
456331: Butano-----	0-23	10.0-25.0	---	5.6-6.0	0
	23-28	---	---	4.5-5.5	0
	28-36	---	---	4.5-5.5	0
	36-40	---	---	---	---
456364: Denison-----	0-10	35.0-45.0	---	5.6-6.5	0
	10-45	40.0-50.0	---	6.1-7.3	0
	45-61	25.0-35.0	---	6.6-7.8	0
	61-70	20.0-30.0	---	6.6-7.8	0
456365: Denison-----	0-10	10.0-20.0	---	5.6-6.5	0
	10-20	30.0-40.0	---	5.6-6.5	0
	20-55	40.0-50.0	---	6.1-7.3	0
	55-71	30.0-40.0	---	6.6-7.8	0
456367: Denison-----	0-15	25.0-35.0	---	5.6-6.5	0
	15-45	40.0-50.0	---	6.1-7.3	0
	45-60	30.0-40.0	---	6.6-7.8	0
	60-70	15.0-20.0	---	6.6-7.8	0
456368: Denison-----	0-15	25.0-35.0	---	5.6-6.5	0
	15-45	40.0-50.0	---	6.1-7.3	0
	45-60	30.0-40.0	---	6.6-7.8	0
	60-70	15.0-20.0	---	6.6-7.8	0
456376: Elkhorn-----	0-25	10.0-20.0	---	5.6-6.5	0
	25-60	10.0-20.0	---	5.6-6.5	0
456377: Elkhorn-----	0-25	10.0-20.0	---	5.6-6.5	0
	25-60	10.0-20.0	---	5.6-6.5	0
456379: Elkhorn-----	0-20	10.0-20.0	---	5.6-6.5	0
	20-60	10.0-20.0	---	5.6-6.5	0
456382: Farallone-----	0-20	10.0-15.0	---	6.1-6.5	0
	20-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0
456383: Farallone-----	0-20	10.0-15.0	---	6.1-6.5	0
	20-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0
456384: Farallone-----	0-20	10.0-15.0	---	6.1-6.5	0
	20-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
456385:					
Farallone-----	0-20	10.0-15.0	---	6.1-6.5	0
	20-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0
456386:					
Farallone-----	0-15	10.0-15.0	---	6.1-6.5	0
	15-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0
456387:					
Farallone-----	0-15	10.0-15.0	---	6.1-6.5	0
	15-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0
456388:					
Farallone-----	0-20	10.0-15.0	---	6.1-6.5	0
	20-30	5.0-10.0	---	6.1-6.5	0
	30-60	1.0-5.0	---	6.1-6.5	0
456390:					
Farallone-----	0-15	5.0-10.0	---	6.1-6.5	0
	15-48	5.0-10.0	---	6.1-6.5	0
	48-60	5.0-10.0	---	6.1-6.5	0
456394:					
Gazos-----	0-12	10.0-25.0	---	6.1-7.3	0
	12-25	10.0-20.0	---	6.1-7.3	0
	25-29	---	---	---	---
456397:					
Gazos-----	0-12	10.0-25.0	---	6.1-7.3	0
	12-25	10.0-20.0	---	6.1-7.3	0
	25-29	---	---	---	---
456398:					
Gazos-----	0-12	10.0-25.0	---	6.1-7.3	0
	12-25	10.0-20.0	---	6.1-7.3	0
	25-29	---	---	---	---
456399:					
Gazos (dark phase)---	0-12	10.0-25.0	---	6.1-7.3	0
	12-24	10.0-20.0	---	6.1-7.3	0
	24-28	---	---	---	---
Calera-----	0-10	15.0-25.0	---	6.6-7.8	0
	10-30	15.0-20.0	---	7.4-7.8	0
	30-34	---	---	---	---
456400:					
Gazos (dark phase)---	0-12	10.0-25.0	---	6.1-7.3	0
	12-24	10.0-20.0	---	6.1-7.3	0
	24-28	---	---	---	---
Calera-----	0-10	10.0-25.0	---	6.6-7.8	0
	10-30	15.0-20.0	---	7.4-7.8	0
	30-34	---	---	---	---

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
456401:					
Gazos (dark phase)---	0-12	10.0-25.0	---	6.1-7.3	0
	12-24	10.0-20.0	---	6.1-7.3	0
	24-28	---	---	---	---
Calera-----	0-10	15.0-25.0	---	6.6-7.8	0
	10-30	15.0-20.0	---	7.4-7.8	0
	30-34	---	---	---	---
456403:					
Gazos (dark phase)---	0-12	10.0-25.0	---	6.1-7.3	0
	12-24	10.0-20.0	---	6.1-7.3	0
	24-28	---	---	---	---
Sweeney-----	0-7	15.0-25.0	---	6.1-6.5	0
	7-22	15.0-20.0	---	6.1-7.3	0
	22-50	5.0-10.0	---	6.6-7.3	0
	50-54	---	---	---	---
456404:					
Gazos-----	0-16	10.0-25.0	---	6.1-7.3	0
	16-28	10.0-20.0	---	6.1-7.3	0
	28-32	---	---	---	---
Lobitos-----	0-22	20.0-30.0	---	5.6-6.5	0
	22-33	20.0-30.0	---	5.6-6.0	0
	33-38	15.0-20.0	---	5.6-6.0	0
	38-42	---	---	---	---
456405:					
Gazos-----	0-12	10.0-25.0	---	6.1-7.3	0
	12-24	10.0-20.0	---	6.1-7.3	0
	24-28	---	---	---	---
Lobitos-----	0-18	20.0-30.0	---	5.6-6.5	0
	18-29	20.0-30.0	---	5.6-6.0	0
	29-34	15.0-20.0	---	5.6-6.0	0
	34-38	---	---	---	---
456406:					
Gazos-----	0-12	10.0-25.0	---	6.1-7.3	0
	12-24	10.0-20.0	---	6.1-7.3	0
	24-28	---	---	---	---
Lobitos-----	0-18	20.0-30.0	---	5.6-6.5	0
	18-29	20.0-30.0	---	5.6-6.0	0
	29-34	15.0-20.0	---	5.6-6.0	0
	34-38	---	---	---	---
456416:					
Hugo-----	0-8	10.0-20.0	---	5.6-6.5	0
	8-45	10.0-20.0	---	5.6-6.0	0
	45-49	---	---	---	---
Josephine-----	0-12	10.0-20.0	---	5.6-6.5	0
	12-47	15.0-20.0	---	5.6-6.0	0
	47-51	---	---	---	---

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
456418:					
Hugo-----	0-8	10.0-20.0	---	5.6-6.5	0
	8-45	10.0-20.0	---	5.6-6.0	0
	45-49	---	---	---	---
Josephine-----	0-12	10.0-20.0	---	5.6-6.5	0
	12-47	15.0-20.0	---	5.6-6.0	0
	47-51	---	---	---	---
456420:					
Hugo-----	0-8	10.0-20.0	---	5.6-6.5	0
	8-45	10.0-20.0	---	5.6-6.0	0
	45-49	---	---	---	---
Josephine-----	0-12	10.0-20.0	---	5.6-6.5	0
	12-47	15.0-20.0	---	5.6-6.0	0
	47-51	---	---	---	---
456423:					
Hugo-----	0-4	5.0-15.0	---	5.6-6.5	0
	4-41	5.0-15.0	---	5.6-6.0	0
	41-45	---	---	---	---
Josephine-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-43	15.0-20.0	---	5.6-6.0	0
	43-47	---	---	---	---
456444:					
Lobitos-----	0-18	20.0-30.0	---	5.6-6.5	0
	18-29	20.0-30.0	---	5.6-6.0	0
	29-34	15.0-20.0	---	5.6-6.0	0
	34-38	---	---	---	---
456445:					
Lobitos-----	0-18	20.0-30.0	---	5.6-6.5	0
	18-29	20.0-30.0	---	5.6-6.0	0
	29-34	15.0-20.0	---	5.6-6.0	0
	34-38	---	---	---	---
456446:					
Lobitos-----	0-18	20.0-30.0	---	5.6-6.5	0
	18-29	20.0-30.0	---	5.6-6.0	0
	29-34	15.0-20.0	---	5.6-6.0	0
	34-38	---	---	---	---
456464:					
Miramar-----	0-22	10.0-20.0	---	6.1-7.3	0
	22-37	10.0-20.0	---	6.1-6.5	0
	37-41	---	---	---	---
456465:					
Miramar-----	0-22	10.0-20.0	---	6.1-7.3	0
	22-37	10.0-20.0	---	6.1-6.5	0
	37-41	---	---	---	---
456466:					
Miramar-----	0-22	10.0-20.0	---	6.1-7.3	0
	22-37	10.0-20.0	---	6.1-6.5	0
	37-41	---	---	---	---

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
456467: Miramar-----	0-18	10.0-20.0	---	6.1-7.3	0
	18-33	10.0-20.0	---	6.1-6.5	0
	33-37	---	---	---	---
456468: Miramar-----	0-22	10.0-20.0	---	6.1-7.3	0
	22-37	10.0-20.0	---	6.1-6.5	0
	37-41	---	---	---	---
456469: Montara-----	0-6	15.0-25.0	---	6.6-7.3	0
	6-15	15.0-20.0	---	6.6-7.3	0
	15-19	---	---	---	---
456486: Sheridan-----	0-5	10.0-20.0	---	6.1-7.3	0
	5-38	10.0-20.0	---	6.1-7.3	0
	38-42	---	---	---	---
456487: Sheridan-----	0-5	10.0-20.0	---	6.1-7.3	0
	5-38	10.0-20.0	---	6.1-7.3	0
	38-42	---	---	---	---
456488: Sheridan-----	0-5	10.0-20.0	---	6.1-7.3	0
	5-38	10.0-20.0	---	6.1-7.3	0
	38-42	---	---	---	---
456494: Soquel-----	0-30	10.0-25.0	---	6.6-7.3	0
	30-60	10.0-20.0	---	6.6-7.3	0
	60-70	10.0-20.0	---	6.6-7.3	0
456506: Sweeney-----	0-7	15.0-25.0	---	6.1-6.5	0
	7-22	15.0-20.0	---	6.1-7.3	0
	22-50	5.0-10.0	---	6.6-7.3	0
	50-54	---	---	---	---
456511: Sweeney-----	0-7	20.0-30.0	---	6.1-6.5	0
	7-22	15.0-20.0	---	6.1-7.3	0
	22-50	5.0-10.0	---	6.1-7.3	0
	50-54	---	---	---	---
456517: Tierra-----	0-17	---	8.8-16.6	5.1-5.5	0
	17-37	25.0-40.0	---	6.1-6.5	0
	37-60	15.0-20.0	---	6.1-7.3	0
456518: Tierra-----	0-17	---	8.8-16.6	5.1-5.5	0
	17-37	25.0-40.0	---	6.1-6.5	0
	37-60	15.0-20.0	---	6.1-7.3	0
456519: Tierra-----	0-13	---	8.8-16.6	5.1-5.5	0
	13-33	25.0-40.0	---	6.1-6.5	0
	33-60	15.0-20.0	---	6.1-7.3	0

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
456520:					
Tierra-----	0-17	---	8.8-16.6	5.1-5.5	0
	17-37	25.0-40.0	---	6.1-6.5	0
	37-60	15.0-20.0	---	6.1-7.3	0
459393:					
Ballard-----	0-19	5.0-15.0	---	5.6-6.5	0
	19-65	5.0-15.0	---	5.6-6.5	0
459395:					
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459397:					
Blucher-----	0-7	10.0-20.0	---	5.6-6.5	0
	7-23	5.0-15.0	---	6.1-8.4	0.0-2.0
	23-60	10.0-25.0	---	7.4-8.4	0.0-2.0
Cole-----	0-5	15.0-25.0	---	5.6-7.3	0
	5-14	15.0-30.0	---	6.1-8.4	0
	14-60	15.0-30.0	---	6.6-8.4	0.0-2.0
459398:					
Bonnydoon-----	0-15	10.0-20.0	---	5.6-7.3	0
	15-19	---	---	---	0
459399:					
Bonnydoon-----	0-15	10.0-20.0	---	5.6-7.3	0
	15-19	---	---	---	0
459402:					
Centissima-----	0-15	5.0-20.0	---	5.6-6.5	0
	15-22	5.0-15.0	---	5.6-6.5	0
	22-33	10.0-20.0	---	5.6-6.5	0
	33-37	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459403:					
Centissima-----	0-15	5.0-20.0	---	5.6-6.5	0
	15-22	5.0-15.0	---	5.6-6.5	0
	22-33	10.0-20.0	---	5.6-6.5	0
	33-37	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459404:					
Centissima-----	0-15	5.0-20.0	---	5.6-6.5	0
	15-22	5.0-15.0	---	5.6-6.5	0
	22-33	10.0-20.0	---	5.6-6.5	0
	33-37	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459406:					
Cortina-----	0-10	5.0-15.0	---	5.6-8.4	0
	10-44	5.0-15.0	---	5.6-8.4	0
	44-60	5.0-10.0	---	5.6-8.4	0
459407:					
Cronkhite-----	0-15	10.0-20.0	---	6.1-7.3	0
	15-26	10.0-25.0	---	6.1-7.3	0
	26-45	15.0-30.0	---	6.1-7.3	0
	45-55	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459408:					
Cronkhite-----	0-15	10.0-20.0	---	6.1-7.3	0
	15-26	10.0-25.0	---	6.1-7.3	0
	26-45	15.0-30.0	---	6.1-7.3	0
	45-55	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459409:					
Cronkhite-----	0-15	10.0-20.0	---	6.1-7.3	0
	15-26	10.0-25.0	---	6.1-7.3	0
	26-45	15.0-30.0	---	6.1-7.3	0
	45-55	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459410:					
Cronkhite-----	0-15	10.0-20.0	---	6.1-7.3	0
	15-26	10.0-25.0	---	6.1-7.3	0
	26-45	15.0-30.0	---	6.1-7.3	0
	45-55	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459411:					
Dipsea-----	0-8	15.0-40.0	---	5.6-6.5	0
	8-25	10.0-25.0	---	5.6-6.5	0
	25-48	5.0-15.0	---	5.1-6.0	0
	48-52	---	---	---	0
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459412:					
Dipsea-----	0-8	15.0-40.0	---	5.6-6.5	0
	8-25	10.0-25.0	---	5.6-6.5	0
	25-48	5.0-15.0	---	5.1-6.0	0
	48-52	---	---	---	0

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459412:					
Barnabe-----	0-8	5.0-15.0	---	5.6-6.5	0
	8-16	5.0-15.0	---	5.6-6.5	0
	16-20	---	---	---	---
459415:					
Felton variant-----	0-23	10.0-20.0	---	6.1-6.5	0
	23-34	10.0-20.0	---	6.1-7.3	0
	34-47	15.0-30.0	---	6.6-7.3	0
	47-51	---	---	---	0
Soulajule-----	0-17	10.0-25.0	---	5.1-6.5	0
	17-22	15.0-30.0	---	4.5-6.5	0
	22-28	15.0-30.0	---	4.5-6.5	0
	28-32	---	---	---	0
459416:					
Felton variant-----	0-23	10.0-20.0	---	6.1-6.5	0
	23-34	10.0-20.0	---	6.1-7.3	0
	34-47	15.0-30.0	---	6.6-7.3	0
	47-51	---	---	---	0
Soulajule-----	0-17	10.0-25.0	---	5.1-6.5	0
	17-22	15.0-30.0	---	4.5-6.5	0
	22-28	15.0-30.0	---	4.5-6.5	0
	28-32	---	---	---	0
459417:					
Felton variant-----	0-23	10.0-20.0	---	6.1-6.5	0
	23-34	10.0-20.0	---	6.1-7.3	0
	34-47	15.0-30.0	---	6.6-7.3	0
	47-51	---	---	---	0
Soulajule-----	0-17	10.0-25.0	---	5.1-6.5	0
	17-22	15.0-30.0	---	4.5-6.5	0
	22-28	15.0-30.0	---	4.5-6.5	0
	28-32	---	---	---	0
459418:					
Felton variant-----	0-23	10.0-20.0	---	6.1-6.5	0
	23-34	10.0-20.0	---	6.1-7.3	0
	34-47	15.0-30.0	---	6.6-7.3	0
	47-51	---	---	---	0
Soulajule-----	0-17	10.0-25.0	---	5.1-6.5	0
	17-22	15.0-30.0	---	4.5-6.5	0
	22-28	15.0-30.0	---	4.5-6.5	0
	28-32	---	---	---	0
459420:					
Gilroy-----	0-12	15.0-40.0	---	5.6-7.3	0
	12-21	10.0-25.0	---	6.6-8.4	0.0-2.0
	21-30	10.0-25.0	---	6.6-8.4	0.0-2.0
	30-34	---	---	---	0
Gilroy variant-----	0-21	10.0-25.0	---	6.1-7.3	0
	21-45	10.0-25.0	---	6.6-7.3	0
	45-49	---	---	---	0
Bonnydoon variant----	0-18	10.0-20.0	---	6.1-7.3	0
	18-22	---	---	---	0

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459421: Henneke-----	0-3	15.0-35.0	---	5.6-8.4	0.0-2.0
	3-16	15.0-30.0	---	5.6-8.4	0.0-2.0
	16-20	---	---	---	0
459422: Humaquepts-----	0-5	---	---	---	---
	5-60	10.0-35.0	---	---	0.0-2.0
459423: Hydraquents-----	0-60	0.0-25.0	---	---	16.0-32.0
459425: Inverness-----	0-22	10.0-20.0	---	5.1-6.0	0
	22-36	10.0-20.0	---	5.1-6.0	0
	36-60	5.0-15.0	---	5.6-6.0	0
	60-64	---	---	---	0
459427: Inverness-----	0-22	10.0-20.0	---	5.1-6.0	0
	22-36	10.0-20.0	---	5.1-6.0	0
	36-60	5.0-15.0	---	5.6-6.0	0
	60-64	---	---	---	0
459432: Los Osos-----	0-18	10.0-25.0	---	5.6-7.3	0
	18-38	15.0-30.0	---	5.6-7.3	0
	38-42	---	---	---	0
Bonnydoon-----	0-15	10.0-25.0	---	5.6-7.3	0
	15-19	---	---	---	0
459433: Los Osos-----	0-18	10.0-25.0	---	5.6-7.3	0
	18-38	15.0-30.0	---	5.6-7.3	0
	38-42	---	---	---	0
Bonnydoon-----	0-15	10.0-25.0	---	5.6-7.3	0
	15-19	---	---	---	0
459434: Los Osos-----	0-15	10.0-25.0	---	5.6-7.3	0
	15-30	15.0-30.0	---	5.6-7.3	0
	30-34	---	---	---	0
Bonnydoon-----	0-11	10.0-25.0	---	5.6-7.3	0
	11-15	---	---	---	0
459436: Los Osos-----	0-15	10.0-25.0	---	5.6-7.3	0
	15-30	15.0-30.0	---	5.6-7.3	0
	30-34	---	---	---	0
Bonnydoon-----	0-11	10.0-25.0	---	5.6-7.3	0
	11-15	---	---	---	0
459437: Maymen-----	0-12	5.0-15.0	---	4.5-6.5	0
	12-16	---	---	---	0

Soil Survey of Golden Gate National Recreation Area, California

Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459437: Maymen variant-----	0-4	10.0-20.0	---	5.6-6.0	0
	4-37	15.0-35.0	---	5.6-6.5	0
	37-41	---	---	---	0
459438: Montara-----	0-13	10.0-25.0	---	6.6-8.4	0.0-2.0
	13-17	---	---	---	0
459439: Novato-----	0-15	25.0-45.0	---	7.9-9.0	8.0-16.0
	15-60	15.0-40.0	---	7.9-9.0	16
459440: Olompali-----	0-13	10.0-20.0	---	5.6-6.5	0
	13-28	25.0-50.0	---	6.1-6.5	0
	28-42	25.0-50.0	---	6.6-7.3	0
	42-60	25.0-50.0	---	6.6-7.3	0
	60-64	---	---	---	0
459441: Olompali-----	0-13	10.0-20.0	---	5.6-6.5	0
	13-28	25.0-50.0	---	6.1-6.5	0
	28-42	25.0-50.0	---	6.6-7.3	0
	42-60	25.0-50.0	---	6.6-7.3	0
	60-64	---	---	---	0
459442: Olompali-----	0-13	10.0-20.0	---	5.6-6.5	0
	13-28	25.0-50.0	---	6.1-6.5	0
	28-42	25.0-50.0	---	6.6-7.3	0
	42-60	25.0-50.0	---	6.6-7.3	0
	60-64	---	---	---	0
459448: Palomarin-----	0-18	15.0-25.0	10.0-25.0	4.5-5.5	0
	18-29	10.0-20.0	10.0-20.0	4.5-5.5	0
	29-41	10.0-20.0	10.0-20.0	4.5-5.5	0
	41-45	10.0-15.0	---	---	0
Wittenberg-----	0-26	15.0-20.0	10.0-20.0	4.5-6.0	0
	26-50	10.0-20.0	10.0-20.0	4.5-6.0	0
	50-54	10.0-15.0	---	---	0
459452: Rodeo-----	0-20	10.0-25.0	---	5.1-6.0	0
	20-75	---	15.0-30.0	4.5-6.0	0
459453: Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0
Bonnydoon-----	0-15	10.0-20.0	---	5.6-7.3	0
	15-19	---	---	---	0
459454: Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459454:					
Bonnydoon-----	0-15	10.0-25.0	---	5.6-7.3	0
	15-19	---	---	---	0
459455:					
Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0
Bonnydoon-----	0-11	10.0-25.0	---	5.6-7.3	0
	11-15	---	---	---	0
459456:					
Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0
Bonnydoon-----	0-11	10.0-25.0	---	5.6-7.3	0
	11-15	---	---	---	0
459463:					
Sirdrak-----	0-16	5.0-10.0	---	5.1-6.5	0
	16-48	0.0-5.0	---	5.1-6.5	0
	48-73	0.0-5.0	---	5.1-6.5	0
459467:					
Tamalpais-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-7.3	0
	39-43	---	---	---	0
Barnabe variant-----	0-13	10.0-20.0	---	6.1-7.3	0
	13-17	---	---	---	0
459468:					
Tamalpais-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-7.3	0
	39-43	---	---	---	0
Barnabe variant-----	0-13	10.0-20.0	---	6.1-7.3	0
	13-17	---	---	---	0
459469:					
Tamalpais-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-7.3	0
	39-43	---	---	---	0
Barnabe variant-----	0-13	10.0-20.0	---	6.1-7.3	0
	13-17	---	---	---	0
459471:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
McMullin-----	0-4	10.0-20.0	---	5.6-6.5	0
	4-18	10.0-20.0	---	5.6-6.5	0
	18-22	---	---	---	0

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459472:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
McMullin-----	0-4	10.0-20.0	---	5.6-6.5	0
	4-18	10.0-20.0	---	5.6-6.5	0
	18-22	---	---	---	0
459473:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
McMullin-----	0-4	10.0-20.0	---	5.6-6.5	0
	4-18	10.0-20.0	---	5.6-6.5	0
	18-22	---	---	---	0
459474:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
McMullin-----	0-4	10.0-20.0	---	5.6-6.5	0
	4-18	10.0-20.0	---	5.6-6.5	0
	18-22	---	---	---	0
459475:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0
459476:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0
459477:					
Tocaloma-----	0-19	10.0-20.0	---	5.6-6.5	0
	19-39	10.0-20.0	---	5.6-6.5	0
	39-43	---	---	---	0
Saurin-----	0-10	10.0-25.0	---	5.6-6.5	0
	10-33	15.0-25.0	---	5.6-6.5	0
	33-37	---	---	---	0
459481:					
Tomales-----	0-12	15.0-20.0	---	5.6-6.5	0
	12-24	10.0-20.0	---	5.1-6.5	0
	24-47	15.0-30.0	15.0-30.0	4.5-5.5	0
	47-51	---	---	---	0

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Table 18.—Chemical Soil Properties—Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Salinity
	In	meq/100 g	meq/100 g	pH	mmhos/cm
459489:					
Tomales-----	0-12	15.0-20.0	---	5.6-6.5	0
	12-24	10.0-20.0	---	5.1-6.5	0
	24-47	15.0-30.0	15.0-30.0	4.5-5.5	0
	47-51	---	---	---	0
Steinbeck-----	0-35	10.0-20.0	---	5.6-6.5	0
	35-48	10.0-25.0	---	5.6-7.3	0
	48-52	---	---	---	0
459490:					
Tomales-----	0-12	15.0-20.0	---	5.6-6.5	0
	12-24	10.0-20.0	---	5.1-6.5	0
	24-47	15.0-30.0	15.0-30.0	4.5-5.5	0
	47-51	---	---	---	0
Steinbeck-----	0-35	10.0-20.0	---	5.6-6.5	0
	35-48	10.0-25.0	---	5.6-7.3	0
	48-52	---	---	---	0
459497:					
Yorkville-----	0-14	10.0-25.0	---	5.6-7.8	0
	14-51	15.0-30.0	---	6.6-8.4	0.0-2.0
	51-55	---	---	---	0
459498:					
Yorkville-----	0-14	10.0-25.0	---	5.6-7.8	0
	14-51	15.0-30.0	---	6.6-8.4	0.0-2.0
	51-55	---	---	---	0
459499:					
Yorkville-----	0-10	10.0-25.0	---	5.6-7.8	0
	10-45	15.0-30.0	---	6.6-8.4	0.0-2.0
	45-49	---	---	---	0
459500:					
Yorkville-----	0-14	10.0-25.0	---	5.6-7.8	0
	14-51	15.0-30.0	---	6.6-8.4	0.0-2.0
	51-55	---	---	---	0
459501:					
Yorkville-----	0-14	10.0-25.0	---	5.6-7.8	0
	14-51	15.0-30.0	---	6.6-8.4	0.0-2.0
	51-55	---	---	---	0

Table 19.-Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
455964: Alambique-----	B	Jan-Dec	---	---	---	---	None	---	None
455965: Alambique-----	B	Jan-Dec	---	---	---	---	None	---	None
McGarvey-----	C	Jan-Dec	---	---	---	---	None	---	None
455966: Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
Candlestick-----	C	Jan-Dec	---	---	---	---	None	---	None
455967: Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
455970: Candlestick-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
455971: Candlestick-----	C	Jan-Dec	---	---	---	---	None	---	None
Kron-----	D	Jan-Dec	---	---	---	---	None	---	None
Buriburi-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			<u>Ft</u>	<u>Ft</u>	<u>Ft</u>				
455972: Candlestick variant-----	B	Jan-Dec	---	---	---	---	None	---	None
455973: Candlestick variant-----	B	Jan-Dec	---	---	---	---	None	---	None
455974: Fagan-----	C	Jan-Dec	---	---	---	---	None	---	None
455976: Los Gatos-----	C	Jan-Dec	---	---	---	---	None	---	None
455977: Maymen-----	D	Jan-Dec	---	---	---	---	None	---	None
455980: Obispo-----	D	Jan-Dec	---	---	---	---	None	---	None
455981: Obispo-----	D	Jan-Dec	---	---	---	---	None	---	None
455982: Orthents-----	B	Jan-Dec	---	---	---	---	None	---	None
455983: Orthents-----	D	Jan-Dec	---	---	---	---	None	---	None
455984: Orthents-----	A	Jan-Dec	---	---	---	---	None	---	None
Urban land.									
455985: Orthents-----	D	Jan-Dec	---	---	---	---	None	---	None
Urban land.									

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
455986. Pits and dumps									
455988: Rock outcrop.									
Orthents-----	D	Jan-Dec	---	---	---	---	None	---	None
455989: Scarper-----	C	Jan-Dec	---	---	---	---	None	---	None
Miramar-----	B	Jan-Dec	---	---	---	---	None	---	None
455990: Sirdrak-----	A	Jan-Dec	---	---	---	---	None	---	None
455991: Typic Argiustolls-----	D	Jan-Dec	---	---	---	---	None	---	None
Urban land.									
455992. Urban land									
455993: Urban land.									
Orthents-----	B	Jan-Dec	---	---	---	---	None	---	None
455994: Urban land.									
Orthents-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
455995: Urban land.									
Orthents-----	D	January	0.0	3.7	---	---	None	---	None
		February	3.7	>6.0	---	---	None	---	None
		March	3.7	>6.0	---	---	None	---	None
		April	3.7	>6.0	---	---	None	---	None
		May	3.7	>6.0	---	---	None	---	None
		June	3.7	>6.0	---	---	None	---	None
		July	3.7	>6.0	---	---	None	---	None
		August	3.7	>6.0	---	---	None	---	None
		September	3.7	>6.0	---	---	None	---	None
		October	3.7	>6.0	---	---	None	---	None
		November	3.7	>6.0	---	---	None	---	None
		December	3.7	>6.0	---	---	None	---	None
455996: Urban land.									
Orthents-----	D	Jan-Dec	---	---	---	---	None	---	None
455997: Urban land.									
Sirdrak-----	A	Jan-Dec	---	---	---	---	None	---	None
455998: Zeni-----	C	Jan-Dec	---	---	---	---	None	---	None
Zeni variant-----	C	Jan-Dec	---	---	---	---	None	---	None
456000. Beaches									
456001. Water									
456330: Botella-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
456331: Butano-----	C	Jan-Dec	---	---	---	---	None	---	None
456344: Coastal beaches-----	D	January	3.0	>6.0	---	---	None	Long	Frequent
		February	3.0	>6.0	---	---	None	Long	Frequent
		March	3.0	>6.0	---	---	None	Long	Frequent
		April	3.0	>6.0	---	---	None	Long	Frequent
		May	3.0	>6.0	---	---	None	Long	Frequent
		June	0.0	3.0	---	---	None	Long	Frequent
		July	0.0	3.0	---	---	None	Long	Frequent
		August	3.0	>6.0	---	---	None	Long	Frequent
		September	3.0	>6.0	---	---	None	Long	Frequent
		October	3.0	>6.0	---	---	None	Long	Frequent
		November	0.0	3.0	---	---	None	Long	Frequent
		December	0.0	3.0	---	---	None	Long	Frequent
456364: Denison-----	C	January	0.0	4.0	---	---	None	---	None
		February	0.0	4.0	---	---	None	---	None
		March	4.0	>6.0	---	---	None	---	None
		April	4.0	>6.0	---	---	None	---	None
		May-Oct	---	---	---	---	None	---	None
		November	4.0	>6.0	---	---	None	---	None
		December	0.0	4.0	---	---	None	---	None
456365: Denison-----	C	Jan-Dec	---	---	---	---	None	---	None
456367: Denison-----	C	Jan-Dec	---	---	---	---	None	---	None
456368: Denison-----	C	Jan-Dec	---	---	---	---	None	---	None
456376: Elkhorn-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			<u>Ft</u>	<u>Ft</u>	<u>Ft</u>				
456377: Elkhorn-----	B	Jan-Dec	---	---	---	---	None	---	None
456379: Elkhorn-----	B	Jan-Dec	---	---	---	---	None	---	None
456382: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456383: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456384: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456385: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456386: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456387: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456388: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456390: Farallone-----	B	Jan-Dec	---	---	---	---	None	---	None
456394: Gazos-----	C	Jan-Dec	---	---	---	---	None	---	None
456397: Gazos-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
456398: Gazos-----	C	Jan-Dec	---	---	---	---	None	---	None
456399: Gazos (dark phase)-----	C	Jan-Dec	---	---	---	---	None	---	None
Calera-----	C	Jan-Dec	---	---	---	---	None	---	None
456400: Gazos (dark phase)-----	C	Jan-Dec	---	---	---	---	None	---	None
Calera-----	C	Jan-Dec	---	---	---	---	None	---	None
456401: Gazos (dark phase)-----	C	Jan-Dec	---	---	---	---	None	---	None
Calera-----	C	Jan-Dec	---	---	---	---	None	---	None
456403: Gazos (dark phase)-----	C	Jan-Dec	---	---	---	---	None	---	None
Sweeney-----	B	Jan-Dec	---	---	---	---	None	---	None
456404: Gazos-----	C	Jan-Dec	---	---	---	---	None	---	None
Lobitos-----	C	Jan-Dec	---	---	---	---	None	---	None
456405: Gazos-----	C	Jan-Dec	---	---	---	---	None	---	None
Lobitos-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			<u>Ft</u>	<u>Ft</u>	<u>Ft</u>				
456406: Gazos-----	C	Jan-Dec	---	---	---	---	None	---	None
Lobitos-----	C	Jan-Dec	---	---	---	---	None	---	None
456412. Gullied land (alluvial soil material)									
456414. Gullied land (Tierra and Watsonville soil materials)									
456416: Hugo-----	B	Jan-Dec	---	---	---	---	None	---	None
Josephine-----	B	Jan-Dec	---	---	---	---	None	---	None
456418: Hugo-----	B	Jan-Dec	---	---	---	---	None	---	None
Josephine-----	B	Jan-Dec	---	---	---	---	None	---	None
456420: Hugo-----	B	Jan-Dec	---	---	---	---	None	---	None
Josephine-----	B	Jan-Dec	---	---	---	---	None	---	None
456423: Hugo-----	B	Jan-Dec	---	---	---	---	None	---	None
Josephine-----	B	Jan-Dec	---	---	---	---	None	---	None
456444: Lobitos-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
456445: Lobitos-----	C	Jan-Dec	---	---	---	---	None	---	None
456446: Lobitos-----	C	Jan-Dec	---	---	---	---	None	---	None
456460: Mixed alluvial land-----	B	January	---	---	---	---	None	Brief	Occasional
		February	---	---	---	---	None	Brief	Occasional
		March	---	---	---	---	None	Brief	Occasional
		April	---	---	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun-Nov	---	---	---	---	None	---	None
		December	---	---	---	---	None	Brief	Occasional
456464: Miramar-----	B	Jan-Dec	---	---	---	---	None	---	None
456465: Miramar-----	B	Jan-Dec	---	---	---	---	None	---	None
456466: Miramar-----	B	Jan-Dec	---	---	---	---	None	---	None
456467: Miramar-----	B	Jan-Dec	---	---	---	---	None	---	None
456468: Miramar-----	B	Jan-Dec	---	---	---	---	None	---	None
456469: Montara-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
456475: Rough broken land-----	D	Jan-Dec	---	---	---	---	None	---	None
Lithic Xerorthents-----	D	Jan-Dec	---	---	---	---	None	---	None
456485: Stabilized dune land-----	A	Jan-Dec	---	---	---	---	None	---	None
456486: Sheridan-----	B	Jan-Dec	---	---	---	---	None	---	None
456487: Sheridan-----	B	Jan-Dec	---	---	---	---	None	---	None
456488: Sheridan-----	B	Jan-Dec	---	---	---	---	None	---	None
456494: Soquel-----	D	January	0.0	3.5	---	---	None	---	None
		February	0.0	3.5	---	---	None	---	None
		March	3.5	>6.0	---	---	None	---	None
		April	3.5	>6.0	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		December	0.0	3.5	---	---	None	---	None
456506: Sweeney-----	B	Jan-Dec	---	---	---	---	None	---	None
456511: Sweeney-----	B	Jan-Dec	---	---	---	---	None	---	None
456517: Tierra-----	D	Jan-Dec	---	---	---	---	None	---	None
456518: Tierra-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
456519: Tierra-----	D	Jan-Dec	---	---	---	---	None	---	None
456520: Tierra-----	D	Jan-Dec	---	---	---	---	None	---	None
459393: Ballard-----	B	Jan-Dec	---	---	---	---	None	---	None
459395: Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459396: Beaches									
459397: Blucher-----	C	January	0.0	4.3	---	---	None	Very brief	Occasional
		February	0.0	4.3	---	---	None	Very brief	Occasional
		March	0.0	4.3	---	---	None	Very brief	Occasional
		April	0.0	4.3	---	---	None	Very brief	Occasional
		May-Nov	---	---	---	---	None	---	None
		December	0.0	4.3	---	---	None	Very brief	Occasional
Cole-----	C	January	0.0	2.3	---	---	None	Brief	Occasional
		February	0.0	2.3	---	---	None	Brief	Occasional
		March	0.0	2.3	---	---	None	Brief	Occasional
		Apr-Oct	---	---	---	---	None	---	None
		November	0.0	2.3	---	---	None	Brief	Occasional
		December	0.0	2.3	---	---	None	Brief	Occasional
459398: Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459399: Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459402: Centissima-----	B	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459403: Centissima-----	B	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459404: Centissima-----	B	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459406: Cortina-----	B	January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		June	---	---	---	---	None	Very brief	Rare
		July	---	---	---	---	None	Very brief	Rare
		August	---	---	---	---	None	Very brief	Rare
		September	---	---	---	---	None	Very brief	Rare
		October	---	---	---	---	None	Very brief	Rare
		November	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
459407: Cronkhite-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459408: Cronkhite-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459409: Cronkhite-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459410: Cronkhite-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459411: Dipsea-----	B	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459412: Dipsea-----	B	Jan-Dec	---	---	---	---	None	---	None
Barnabe-----	D	Jan-Dec	---	---	---	---	None	---	None
459414. Dune land									
459415: Felton variant-----	C	Jan-Dec	---	---	---	---	None	---	None
Soulajule-----	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459416: Felton variant-----	C	Jan-Dec	---	---	---	---	None	---	None
Soulajule-----	C	Jan-Dec	---	---	---	---	None	---	None
459417: Felton variant-----	C	Jan-Dec	---	---	---	---	None	---	None
Soulajule-----	C	Jan-Dec	---	---	---	---	None	---	None
459418: Felton variant-----	C	Jan-Dec	---	---	---	---	None	---	None
Soulajule-----	C	Jan-Dec	---	---	---	---	None	---	None
459419. Fluents									
459420: Gilroy-----	C	Jan-Dec	---	---	---	---	None	---	None
Gilroy variant-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon variant-----	D	Jan-Dec	---	---	---	---	None	---	None
459421: Henneke-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459422: Humaquepts-----	D	January	1.0	>6.0	---	---	None	---	None
		February	1.0	>6.0	---	---	None	---	None
		March	0.0	1.0	---	---	None	---	None
		April	0.0	1.0	---	---	None	---	None
		May	0.0	1.0	---	---	None	---	None
		June	0.0	3.5	---	---	None	---	None
		July	0.0	3.5	---	---	None	---	None
		August	0.0	3.5	---	---	None	---	None
		September	0.0	3.5	---	---	None	---	None
		October	0.0	3.5	---	---	None	---	None
		November	0.0	3.5	---	---	None	---	None
		December	1.0	>6.0	---	---	None	---	None
459423: Hydraquents-----	D	January	0.0	>6.0	0.0-2.0	Brief	None	---	None
		February	0.0	>6.0	0.0-2.0	Brief	None	---	None
		March	0.0	>6.0	0.0-2.0	Brief	None	---	None
		April	0.0	>6.0	0.0-2.0	Brief	None	---	None
		May	0.0	>6.0	0.0-2.0	Brief	None	---	None
		June	0.0	>6.0	0.0-2.0	Brief	None	---	None
		July	0.0	>6.0	0.0-2.0	Brief	None	---	None
		August	0.0	>6.0	0.0-2.0	Brief	None	---	None
		September	0.0	>6.0	0.0-2.0	Brief	None	---	None
		October	0.0	>6.0	0.0-2.0	Brief	None	---	None
		November	0.0	>6.0	0.0-2.0	Brief	None	---	None
		December	0.0	>6.0	0.0-2.0	Brief	None	---	None
459425: Inverness-----	B	Jan-Dec	---	---	---	---	None	---	None
459427: Inverness-----	B	Jan-Dec	---	---	---	---	None	---	None
459432: Los Osos-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			<u>Ft</u>	<u>Ft</u>	<u>Ft</u>				
459433: Los Osos-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459434: Los Osos-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459436: Los Osos-----	C	Jan-Dec	---	---	---	---	None	---	None
Urban land.									
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459437: Maymen-----	D	Jan-Dec	---	---	---	---	None	---	None
Maymen variant-----	D	Jan-Dec	---	---	---	---	None	---	None
459438: Montara-----	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459439: Novato-----	D	January	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		February	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		March	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		April	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		May	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		June	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		July	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		August	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		September	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		October	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		November	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
		December	0.0	>6.0	0.0-2.0	Brief	None	Very brief	Frequent
459440: Olmopali-----	D	January	0.0	1.5	---	---	None	---	None
		February	0.0	1.5	---	---	None	---	None
		March	0.0	1.5	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		December	0.0	1.5	---	---	None	---	None
459441: Olmopali-----	D	January	0.0	1.5	---	---	None	---	None
		February	0.0	1.5	---	---	None	---	None
		March	0.0	1.5	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		December	0.0	1.5	---	---	None	---	None
459442: Olmopali-----	D	January	0.0	1.5	---	---	None	---	None
		February	0.0	1.5	---	---	None	---	None
		March	0.0	1.5	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		December	0.0	1.5	---	---	None	---	None
459448: Palomarin-----	B	Jan-Dec	---	---	---	---	None	---	None
Wittenberg-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459451. Rock outcrop-Xerorthents									
459452: Rodeo-----	D	January	0.0	4.0	---	---	None	---	None
		February	0.0	4.0	---	---	None	---	None
		March	0.0	4.0	---	---	None	---	None
		April	0.0	4.0	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		December	0.0	4.0	---	---	None	---	None
459453: Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459454: Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459455: Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459456: Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
Bonnydoon-----	D	Jan-Dec	---	---	---	---	None	---	None
459463: Sirdrak-----	A	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459467: Tamalpais-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe variant-----	C	Jan-Dec	---	---	---	---	None	---	None
459468: Tamalpais-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe variant-----	C	Jan-Dec	---	---	---	---	None	---	None
459469: Tamalpais-----	C	Jan-Dec	---	---	---	---	None	---	None
Barnabe variant-----	C	Jan-Dec	---	---	---	---	None	---	None
459471: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
McMullin-----	D	Jan-Dec	---	---	---	---	None	---	None
459472: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
McMullin-----	D	Jan-Dec	---	---	---	---	None	---	None
459473: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
McMullin-----	D	Jan-Dec	---	---	---	---	None	---	None
Urban land.									

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			<u>Ft</u>	<u>Ft</u>	<u>Ft</u>				
459474: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
McMullin-----	D	Jan-Dec	---	---	---	---	None	---	None
Urban land.									
459475: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
459476: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
459477: Tocaloma-----	C	Jan-Dec	---	---	---	---	None	---	None
Saurin-----	C	Jan-Dec	---	---	---	---	None	---	None
459481: Tomales-----	D	Jan-Dec	---	---	---	---	None	---	None
459489: Tomales-----	D	Jan-Dec	---	---	---	---	None	---	None
Steinbeck-----	B	Jan-Dec	---	---	---	---	None	---	None
459490: Tomales-----	D	Jan-Dec	---	---	---	---	None	---	None
Steinbeck-----	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.-Water Features-Continued

Map unit symbol and soil name	Hydro- logic group	Months	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
459494. Urban land-Xerorthents									
459495. Xerorthents									
459497: Yorkville-----	D	Jan-Dec	---	---	---	---	None	---	None
459498: Yorkville-----	D	Jan-Dec	---	---	---	---	None	---	None
459499: Yorkville-----	D	Jan-Dec	---	---	---	---	None	---	None
459500: Yorkville-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
459501: Yorkville-----	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
459502. Water									
1412772. Water									
1611084. No digital data available									

Table 20.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that data were not estimated)

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
455964: Alambique-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Moderate
455965: Alambique-----	Paralithic bedrock	20-40	Weakly cemented	---	Moderate	Moderate
McGarvey-----	Paralithic bedrock	20-40	Very weakly cemented	---	Moderate	Low
455966: Barnabe-----	Lithic bedrock	8-20	Strongly cemented	None	Moderate	Moderate
Candlestick-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
455967: Barnabe-----	Lithic bedrock	8-20	Strongly cemented	None	Moderate	Moderate
Rock outcrop-----	Lithic bedrock	0-0	Indurated	None	---	---
455970: Candlestick-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
Barnabe-----	Lithic bedrock	8-20	Strongly cemented	None	Moderate	Moderate
455971: Candlestick-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
Kron-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Moderate
Buriburi-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
455972: Candlestick variant-----	No restriction	---	---	None	Moderate	Moderate
455973: Candlestick variant-----	No restriction	---	---	None	Moderate	Moderate
455974: Fagan-----	Paralithic bedrock	40-60	Very weakly cemented	None	Moderate	Moderate
455976: Los Gatos-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
455977: Maymen-----	Lithic bedrock	10-20	Strongly cemented	None	High	High
455980: Obispo-----	Lithic bedrock	8-20	Strongly cemented	None	Moderate	Low
455981: Obispo-----	Lithic bedrock	8-20	Strongly cemented	None	Moderate	Low
455982: Orthents-----	No restriction	---	---	None	---	---
455983: Orthents-----	No restriction	---	---	None	---	---
455984: Orthents-----	No restriction	---	---	None	---	---
Urban land.						
455985: Orthents-----	No restriction	---	---	None	---	---
Urban land.						
455986. Pits and dumps						
455988: Rock outcrop.						
Orthents-----	Lithic bedrock	0-10	Strongly cemented	None	---	---
455989: Scarper-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Moderate
Miramar-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
455990: Sirdrak-----	No restriction	---	---	None	Moderate	Moderate
455991: Typic Argiustolls-----	No restriction	---	---	None	High	Moderate
Urban land.						

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
455992. Urban land						
455993: Urban land.						
Orthents-----	No restriction	---	---	None	---	---
455994: Urban land.						
Orthents-----	No restriction	---	---	None	---	---
455995: Urban land.						
Orthents-----	No restriction	---	---	None	High	High
455996: Urban land.						
Orthents-----	No restriction	---	---	None	---	---
455997: Urban land.						
Sirdrak-----	No restriction	---	---	None	Moderate	Moderate
455998: Zeni-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
Zeni variant-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
456000. Beaches						
456001. Water						
456330: Botella-----	No restriction	---	---	None	Moderate	Moderate
456331: Butano-----	Lithic bedrock	36-40	Strongly cemented	None	High	High
456344. Coastal beaches						

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
456364: Denison-----	No restriction	---	---	None	Moderate	Moderate
456365: Denison-----	No restriction	---	---	None	Moderate	Moderate
456367: Denison-----	No restriction	---	---	None	Moderate	Moderate
456368: Denison-----	No restriction	---	---	None	Moderate	Moderate
456376: Elkhorn-----	No restriction	---	---	None	Moderate	Moderate
456377: Elkhorn-----	No restriction	---	---	None	Moderate	Moderate
456379: Elkhorn-----	No restriction	---	---	None	Moderate	Moderate
456382: Farallone-----	No restriction	---	---	None	High	Low
456383: Farallone-----	No restriction	---	---	None	High	Low
456384: Farallone-----	No restriction	---	---	None	High	Low
456385: Farallone-----	No restriction	---	---	None	High	Low
456386: Farallone-----	No restriction	---	---	None	High	Low
456387: Farallone-----	No restriction	---	---	None	High	Low
456388: Farallone-----	No restriction	---	---	None	High	Low
456390: Farallone-----	No restriction	---	---	None	High	Low
456394: Gazos-----	Lithic bedrock	25-29	Strongly cemented	None	Moderate	Moderate

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
456397: Gazos-----	Lithic bedrock	25-29	Strongly cemented	None	Moderate	Moderate
456398: Gazos-----	Lithic bedrock	25-29	Strongly cemented	None	Moderate	Moderate
456399: Gazos (dark phase)-----	Lithic bedrock	24-28	Strongly cemented	None	Moderate	Moderate
Calera-----	Lithic bedrock	30-34	Strongly cemented	None	Moderate	Low
456400: Gazos (dark phase)-----	Lithic bedrock	24-28	Strongly cemented	None	Moderate	Moderate
Calera-----	Lithic bedrock	30-34	Strongly cemented	None	Moderate	Low
456401: Gazos (dark phase)-----	Lithic bedrock	24-28	Strongly cemented	None	Moderate	Moderate
Calera-----	Lithic bedrock	30-34	Strongly cemented	None	Moderate	Low
456403: Gazos (dark phase)-----	Lithic bedrock	24-28	Strongly cemented	None	Moderate	Moderate
Sweeney-----	Paralithic bedrock	50-54	Very weakly cemented	None	Moderate	Low
456404: Gazos-----	Lithic bedrock	28-32	Strongly cemented	None	Moderate	Moderate
Lobitos-----	Lithic bedrock	38-42	Strongly cemented	None	Moderate	Moderate
456405: Gazos-----	Lithic bedrock	24-28	Strongly cemented	None	Moderate	Moderate
Lobitos-----	Lithic bedrock	34-38	Strongly cemented	None	Moderate	Moderate
456406: Gazos-----	Lithic bedrock	24-28	Strongly cemented	None	Moderate	Moderate
Lobitos-----	Lithic bedrock	34-38	Strongly cemented	None	Moderate	Moderate
456412. Gullied land (alluvial soil materials)						
456414. Gullied land (Tierra and Watsonville soil materials)						

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
456416: Hugo-----	Paralithic bedrock	45-49	Very weakly cemented	None	Moderate	Moderate
Josephine-----	Paralithic bedrock	47-51	Very weakly cemented	None	Moderate	Moderate
456418: Hugo-----	Paralithic bedrock	45-49	Very weakly cemented	None	Moderate	Moderate
Josephine-----	Paralithic bedrock	47-51	Very weakly cemented	None	Moderate	Moderate
456420: Hugo-----	Paralithic bedrock	45-49	Very weakly cemented	None	Moderate	Moderate
Josephine-----	Paralithic bedrock	47-51	Very weakly cemented	None	Moderate	Moderate
456423: Hugo-----	Paralithic bedrock	41-45	Very weakly cemented	None	Moderate	Moderate
Josephine-----	Paralithic bedrock	43-47	Very weakly cemented	None	Moderate	Moderate
456444: Lobitos-----	Lithic bedrock	34-38	Strongly cemented	None	Moderate	Moderate
456445: Lobitos-----	Lithic bedrock	34-38	Strongly cemented	None	Moderate	Moderate
456446: Lobitos-----	Lithic bedrock	34-38	Strongly cemented	None	Moderate	Moderate
456460. Mixed alluvial land						
456464: Miramar-----	Paralithic bedrock	37-41	Weakly cemented	None	Moderate	Low
456465: Miramar-----	Paralithic bedrock	37-41	Weakly cemented	None	Moderate	Low

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
456466: Miramar-----	Paralithic bedrock	37-41	Weakly cemented	None	Moderate	Low
456467: Miramar-----	Paralithic bedrock	33-37	Weakly cemented	None	Moderate	Low
456468: Miramar-----	Paralithic bedrock	37-41	Weakly cemented	None	Moderate	Low
456469: Montara-----	Lithic bedrock	15-19	Very strongly cemented	None	Moderate	Low
456475: Rough broken land-----	Paralithic bedrock	0-10	Moderately cemented	None	---	---
Lithic Xerorthents-----	Lithic bedrock	0-4	Strongly cemented	None	---	---
456485. Stabilized dune land						
456486: Sheridan-----	Paralithic bedrock	38-42	Moderately cemented	None	Moderate	Moderate
456487: Sheridan-----	Paralithic bedrock	38-42	Moderately cemented	None	Moderate	Moderate
456488: Sheridan-----	Paralithic bedrock	38-42	Moderately cemented	None	Moderate	Moderate
456494: Soquel-----	No restriction	---	---	None	High	Moderate
456506: Sweeney-----	Paralithic bedrock	50-54	Very weakly cemented	None	Moderate	Low
456511: Sweeney-----	Paralithic bedrock	50-54	Very weakly cemented	None	Moderate	Low

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
456517: Tierra-----	No restriction	---	---	None	High	Moderate
456518: Tierra-----	No restriction	---	---	None	High	Moderate
456519: Tierra-----	No restriction	---	---	None	High	Moderate
456520: Tierra-----	No restriction	---	---	None	High	Moderate
459393: Ballard-----	No restriction	---	---	None	Moderate	Moderate
459395: Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459396: Beaches-----	No restriction	---	---	None	---	---
459397: Blucher-----	No restriction	---	---	None	High	Moderate
Cole-----	No restriction	---	---	None	High	Moderate
459398: Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459399: Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459402: Centissima-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459403: Centissima-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
459404: Centissima-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459406: Cortina-----	No restriction	---	---	None	Low	Low
459407: Cronkhite-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459408: Cronkhite-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459409: Cronkhite-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459410: Cronkhite-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459411: Dipsea-----	Paralithic bedrock	40-60	Moderately cemented	None	Moderate	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459412: Dipsea-----	Paralithic bedrock	40-60	Moderately cemented	None	Moderate	Moderate
Barnabe-----	Lithic bedrock	10-20	Strongly cemented	None	Moderate	Low
459414. Dune land						

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
459415: Felton variant-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Low
Soulajule-----	Paralithic bedrock	20-40	Moderately cemented	None	High	Moderate
459416: Felton variant-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Low
Soulajule-----	Paralithic bedrock	20-40	Moderately cemented	None	High	Moderate
459417: Felton variant-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Low
Soulajule-----	Paralithic bedrock	20-40	Moderately cemented	None	High	Moderate
459418: Felton variant-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Low
Soulajule-----	Paralithic bedrock	20-40	Moderately cemented	None	High	Moderate
459419: Fluvents-----	No restriction	---	---	None	---	---
459420: Gilroy-----	Lithic bedrock	20-40	Indurated	None	High	Low
Gilroy variant-----	Lithic bedrock	40-60	Indurated	None	Moderate	Low
Bonnydoon variant-----	Lithic bedrock	10-20	Indurated	None	Low	Low
459421: Henneke-----	Lithic bedrock	10-20	Indurated	None	High	Moderate
459422: Humaquepts-----	No restriction	---	---	None	---	---
459423: Hydraquents-----	No restriction	---	---	None	---	---

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
459425: Inverness-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
459427: Inverness-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
459432: Los Osos-----	Paralithic bedrock	20-40	Weakly cemented	None	High	Moderate
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459433: Los Osos-----	Paralithic bedrock	20-40	Weakly cemented	None	High	Moderate
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459434: Los Osos-----	Paralithic bedrock	20-40	Weakly cemented	None	High	Moderate
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459436: Los Osos-----	Paralithic bedrock	20-40	Weakly cemented	None	High	Moderate
Urban land. Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459437: Maymen-----	Lithic bedrock	10-20	Strongly cemented	None	High	High
Maymen variant-----	Lithic bedrock	20-40	Strongly cemented	None	Moderate	Moderate
459438: Montara-----	Lithic bedrock	10-15	Very strongly cemented	None	High	Low

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
459439: Novato-----	No restriction	---	---	None	High	High
459440: Olympali-----	No restriction	---	---	None	High	Moderate
459441: Olympali-----	No restriction	---	---	None	High	Moderate
459442: Olympali-----	No restriction	---	---	None	High	Moderate
459448: Palomarin-----	Lithic bedrock	40-60	Strongly cemented	None	High	Moderate
Wittenberg-----	Lithic bedrock	40-60	Strongly cemented	None	High	Moderate
459451: Rock outcrop.						
Xerorthents-----	No restriction	---	---	None	---	---
459452: Rodeo-----	No restriction	---	---	None	High	High
459453: Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459454: Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459455: Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
459456: Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
Bonnydoon-----	Paralithic bedrock	10-20	Moderately cemented	None	Moderate	Low
459463: Sirdrak-----	No restriction	---	---	None	Moderate	Moderate
459467: Tamalpais-----	Lithic bedrock	20-40	Indurated	None	Moderate	Moderate
Barnabe variant-----	Lithic bedrock	10-20	Indurated	None	Low	Low
459468: Tamalpais-----	Lithic bedrock	20-40	Indurated	None	Moderate	Moderate
Barnabe variant-----	Lithic bedrock	10-20	Indurated	None	Low	Low
459469: Tamalpais-----	Lithic bedrock	20-40	Indurated	None	Moderate	Moderate
Barnabe variant-----	Lithic bedrock	10-20	Indurated	None	Low	Low
459471: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
McMullin-----	Lithic bedrock	12-20	Strongly cemented	None	Moderate	Moderate
459472: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
McMullin-----	Lithic bedrock	12-20	Strongly cemented	None	Moderate	Moderate
459473: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
McMullin-----	Lithic bedrock	12-20	Strongly cemented	None	Moderate	Moderate
Urban land.						

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top In	Hardness		Uncoated steel	Concrete
459474: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
McMullin----- Urban land.	Lithic bedrock	12-20	Strongly cemented	None	Moderate	Moderate
459475: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
459476: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
459477: Tocaloma-----	Paralithic bedrock	20-40	Moderately cemented	None	Moderate	Moderate
Saurin-----	Paralithic bedrock	20-40	Weakly cemented	None	Moderate	Low
459481: Tomales-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Moderate
459489: Tomales-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Moderate
Steinbeck-----	Paralithic bedrock	40-60	Weakly cemented	None	Moderate	Low
459490: Tomales-----	Paralithic bedrock	40-60	Weakly cemented	None	High	Moderate
Steinbeck-----	Paralithic bedrock	40-60	Weakly cemented	None	Moderate	Low

Table 20.—Soil Features—Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top <u>In</u>	Hardness		Uncoated steel	Concrete
459494: Urban land.						
Xerorthents-----	No restriction	---	---	None	---	---
459495: Xerorthents-----	No restriction	---	---	None	---	---
459497: Yorkville-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
459498: Yorkville-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
459499: Yorkville-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
459500: Yorkville-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
Rock outcrop.						
459501: Yorkville-----	Paralithic bedrock	40-60	Moderately cemented	None	High	Low
Rock outcrop.						
459502. Water						
1412772. Water						
1611084. No digital data available						

Soil Survey of Golden Gate National Recreation Area, California

Table 21.—Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Alambique taxadjunct-----	Fine-loamy, mixed, isomesic Ustic Dystropepts
Ballard taxadjunct-----	Fine-loamy, mixed, thermic Typic Argixerolls
Barnabe-----	Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls
Barnabe variant-----	Loamy-skeletal, mixed, isomesic Lithic Haplustolls
Blucher-----	Fine-loamy, mixed, thermic Fluvaquentic Haploxerolls
Bonnydoon-----	Loamy, mixed, thermic, shallow Entic Haploxerolls
Bonnydoon variant-----	Loamy, mixed, thermic Lithic Haploxerolls
Botella-----	Fine-loamy, mixed, thermic Pachic Argixerolls
Buriburi-----	Fine-loamy, mixed, isomesic Pachic Haplustolls
Butano-----	Fine-loamy, mixed, mesic Typic Hapludults
Calera-----	Fine-loamy, mixed, isomesic Pachic Haploxerolls
Candlestick-----	Fine-loamy, mixed, isomesic Pachic Argiustolls
Candlestick variant-----	Fine-loamy, mixed, isomesic Pachic Argiustolls
Centissima-----	Fine-loamy, mixed, active, isomesic Humic Dystrustepts
Cole-----	Fine, mixed, thermic Pachic Argixerolls
Cortina-----	Loamy-skeletal, mixed, nonacid, thermic Typic Xerofluvents
Cronkhite-----	Fine, smectitic, isomesic Pachic Argiustolls
Denison-----	Fine, smectitic, isomesic Pachic Argixerolls
Dipsea-----	Loamy-skeletal, mixed, isomesic Typic Tropudalfs
Elkhorn-----	Fine-loamy, mixed, thermic Pachic Argixerolls
Fagan-----	Fine, smectitic, thermic Typic Argixerolls
Farallone-----	Coarse-loamy, mixed, thermic Fluventic Haploxerolls
Felton variant-----	Fine, mixed, mesic Pachic Ultic Argixerolls
Fluvents-----	Fluvents
Gazos-----	Fine-loamy, mixed, thermic Pachic Haploxerolls
Gazos (dark phase)-----	Fine-loamy, mixed, thermic Pachic Haploxerolls
Gilroy-----	Fine-loamy, mixed, thermic Typic Argixerolls
Gilroy variant-----	Fine-loamy, mixed, thermic Typic Argixerolls
Henneke-----	Clayey-skeletal, magnesian, thermic Lithic Argixerolls
Hugo-----	Fine-loamy, mixed, mesic Dystric Xerochrepts
Humaquepts-----	Humaquepts
Hydraquents-----	Hydraquents
Inverness-----	Fine-loamy, mixed, active, isomesic Ultic Haplustalfs
Josephine-----	Fine-loamy, mixed, mesic Typic Haploxerults
Kron-----	Loamy, mixed, isomesic Lithic Haplustolls
Lithic Xerorthents-----	Lithic Xerorthents
Lobitos-----	Fine-loamy, mixed, mesic Typic Argixerolls
Los Gatos-----	Fine-loamy, mixed, mesic Typic Argixerolls
Los Osos-----	Fine, smectitic, thermic Typic Argixerolls
Maymen-----	Loamy, mixed, mesic Dystric Lithic Xerochrepts
Maymen variant-----	Fine, mixed, mesic Typic Haploxerults
McGarvey-----	Fine, mixed, isomesic Ultic Tropudalfs
McMullin-----	Loamy, mixed, mesic Lithic Ultic Haploxerolls
Miramar-----	Fine-loamy, mixed, isomesic Pachic Argiustolls
Mixed alluvial land-----	Xerofluvents
Montara-----	Loamy, magnesian, thermic Lithic Haploxerolls
Novato-----	Fine, mixed, nonacid, isomesic Typic Hydraquents
Obispo-----	Clayey, magnesian, thermic Lithic Haploxerolls
Olompali-----	Fine, smectitic, mesic Ultic Palexeralfs
Orthents-----	Lithic Xerorthents
Orthents-----	Xerorthents
Palomarin-----	Fine-loamy, mixed, superactive, isomesic Humic Dystrustepts
Rodeo-----	Fine, smectitic, isomesic Aquic Paleustolls
Saurin-----	Fine-loamy, mixed, thermic Typic Haploxerolls
Scarper-----	Coarse-loamy, mixed, isomesic Typic Haplustolls
Sheridan-----	Coarse-loamy, mixed, thermic Pachic Haploxerolls
Sirdrak-----	Sandy, mixed, isomesic Humic Dystrustepts
Soquel-----	Fine-loamy, mixed, mesic Cumulic Haploxerolls
Soulajule-----	Clayey-skeletal, mixed, mesic Ultic Haploxeralfs
Steinbeck-----	Fine-loamy, mixed, mesic Ultic Haplustalfs
Sweeney-----	Fine-loamy, mixed, mesic Pachic Haploxerolls
Tamalpais-----	Loamy-skeletal, mixed, active, isomesic Typic Argiustolls
Tierra-----	Fine, smectitic, thermic Mollic Palexeralfs
Tocaloma-----	Fine-loamy, mixed, mesic Typic Haploxerolls

Soil Survey of Golden Gate National Recreation Area, California

Table 21.—Taxonomic Classification of the Soils—Continued

Soil name	Family or higher taxonomic class
Tomales-----	Fine, mixed, mesic Ultic Paleustalfs
Typic Argiustolls-----	Fine-loamy, mixed, thermic Typic Argiustolls
Wittenberg-----	Loamy-skeletal, mixed, superactive, isomesic Humic Pachic Dystrudepts
Xerorthents-----	Xerorthents
Yorkville-----	Fine, mixed, superactive, thermic Typic Argixerolls
Zeni taxadjunct-----	Fine-loamy, mixed, isomesic Ultic Haplustalfs
Zeni variant-----	Loamy-skeletal, mixed, isomesic Typic Argiustolls

Soil Survey of Golden Gate National Recreation Area, California

Table 22.—Soil Classification Key

(An asterisk in the first column indicates a taxadjunct to the series)

ORDER

 Suborder

 Great Group

 Subgroup

 Series or Higher Category

ALFISOLS

 Udalfs

 Tropudalfs

 Typic Tropudalfs

 Dipsea-----Loamy-skeletal, mixed, isomesic Typic Tropudalfs

 Ultic Tropudalfs

 McGarvey-----Fine, mixed, isomesic Ultic Tropudalfs

 Ustalfs

 Haplustalfs

 Ultic Haplustalfs

 Inverness-----Fine-loamy, mixed, active, isomesic Ultic Haplustalfs

 *Zeni-----Fine-loamy, mixed, isomesic Ultic Haplustalfs

 Steinbeck-----Fine-loamy, mixed, mesic Ultic Haplustalfs

 Paleustalfs

 Ultic Paleustalfs

 Tomales-----Fine, mixed, mesic Ultic Paleustalfs

 Keralfs

 Haploxeralfs

 Ultic Haploxeralfs

 Soulajule-----Clayey-skeletal, mixed, mesic Ultic Haploxeralfs

 Palexeralfs

 Mollic Palexeralfs

 Tierra-----Fine, smectitic, thermic Mollic Palexeralfs

 Ultic Palexeralfs

 Olompali-----Fine, smectitic, mesic Ultic Palexeralfs

ENTISOLS

 Aquepts

 Hydraquepts

 Hydraquepts-----Hydraquepts

 Typic Hydraquepts

 Novato-----Fine, mixed, nonacid, isomesic Typic Hydraquepts

 Fluents

 Fluents-----Fluents

 Xerofluents

 Mixed alluvial land-----Xerofluents

 Typic Xerofluents

 Cortina-----Loamy-skeletal, mixed, nonacid, thermic Typic Xerofluents

 Orthents

 Xerorthents

 Orthents-----Xerorthents

 Xerorthents-----Xerorthents

 Lithic Xerorthents

 Lithic Xerorthents-----Lithic Xerorthents

 Orthents-----Lithic Xerorthents

Soil Survey of Golden Gate National Recreation Area, California

Table 22.—Soil Classification Key—Continued

ORDER	Suborder	Great Group	Subgroup	Series or Higher Category
INCEPTISOLS				
	Aquepts			
	Humaquepts			
		Humaquepts-----	Humaquepts	
	Ochrepts			
	Xerochrepts			
		Dystric Xerochrepts		
		Hugo-----	Fine-loamy, mixed, mesic Dystric Xerochrepts	
		Dystric Lithic Xerochrepts		
		Maymen-----	Loamy, mixed, mesic Dystric Lithic Xerochrepts	
	Tropepts			
	Dystropepts			
		Typic Dystropepts		
		Centissima-----	Fine-loamy, mixed, active, isomesic Humic Dystrustepts	
		Palomarin-----	Fine-loamy, mixed, superactive, isomesic Humic Dystrustepts	
		Wittenberg-----	Loamy-skeletal, mixed, superactive, isomesic Humic Pachic Dystrustepts	
		Ustic Dystropepts		
		*Alambique-----	Fine-loamy, mixed, isomesic Ustic Dystropepts	
		Sirdrak-----	Sandy, mixed, isomesic Humic Dystrustepts	
MOLLISOLS				
	Ustolls			
	Argiustolls			
		Typic Argiustolls		
		Tamalpais-----	Loamy-skeletal, mixed, active, isomesic Typic Argiustolls	
		Typic Argiustolls-----	Fine-loamy, mixed, thermic Typic Argiustolls	
		Zeni variant-----	Loamy-skeletal, mixed, isomesic Typic Argiustolls	
		Pachic Argiustolls		
		Cronkhite-----	Fine, smectitic, isomesic Pachic Argiustolls	
		Candlestick-----	Fine-loamy, mixed, isomesic Pachic Argiustolls	
		Candlestick variant-----	Fine-loamy, mixed, isomesic Pachic Argiustolls	
		Miramar-----	Fine-loamy, mixed, isomesic Pachic Argiustolls	
	Haplustolls			
		Typic Haplustolls		
		Scarper-----	Coarse-loamy, mixed, isomesic Typic Haplustolls	
		Lithic Haplustolls		
		Kron-----	Loamy, mixed, isomesic Lithic Haplustolls	
		Barnabe-----	Loamy-skeletal, mixed, active, isomesic Lithic Haplustolls	
		Barnabe variant-----	Loamy-skeletal, mixed, isomesic Lithic Haplustolls	
		Pachic Haplustolls		
		Buriburi-----	Fine-loamy, mixed, isomesic Pachic Haplustolls	
	Paleustolls			
		Aquic Paleustolls		
		Rodeo-----	Fine, smectitic, isomesic Aquic Paleustolls	

Soil Survey of Golden Gate National Recreation Area, California

Table 22.—Soil Classification Key—Continued

ORDER	
Suborder	
Great Group	
Subgroup	
Series or Higher Category	

MOLLISOLS, Continued

Xerolls

 Argixerolls

 Typic Argixerolls

 Yorkville-----Fine, mixed, superactive, thermic Typic Argixerolls

 Fagan-----Fine, smectitic, thermic Typic Argixerolls

 Los Osos-----Fine, smectitic, thermic Typic Argixerolls

 Los Gatos-----Fine-loamy, mixed, mesic Typic Argixerolls

 *Ballard-----Fine-loamy, mixed, thermic Typic Argixerolls

 Gilroy-----Fine-loamy, mixed, thermic Typic Argixerolls

 Gilroy variant-----Fine-loamy, mixed, thermic Typic Argixerolls

 Lobitos-----Fine-loamy, mixed, mesic Typic Argixerolls

 Lithic Argixerolls

 Henneke-----Clayey-skeletal, magnesian, thermic Lithic Argixerolls

 Pachic Ultic Argixerolls

 Felton variant-----Fine, mixed, mesic Pachic Ultic Argixerolls

 Pachic Argixerolls

 Cole-----Fine, mixed, thermic Pachic Argixerolls

 Denison-----Fine, smectitic, isomesic Pachic Argixerolls

 Botella-----Fine-loamy, mixed, thermic Pachic Argixerolls

 Elkhorn-----Fine-loamy, mixed, thermic Pachic Argixerolls

 Haploxerolls

 Typic Haploxerolls

 Tocaloma-----Fine-loamy, mixed, mesic Typic Haploxerolls

 Saurin-----Fine-loamy, mixed, thermic Typic Haploxerolls

 Cumulic Haploxerolls

 Soquel-----Fine-loamy, mixed, mesic Cumulic Haploxerolls

 Entic Haploxerolls

 Bonnydoon-----Loamy, mixed, thermic, shallow Entic Haploxerolls

 Fluvaquentic Haploxerolls

 Blucher-----Fine-loamy, mixed, thermic Fluvaquentic Haploxerolls

 Fluventic Haploxerolls

 Farallone-----Coarse-loamy, mixed, thermic Fluventic Haploxerolls

 Lithic Haploxerolls

 Obispo-----Clayey, magnesian, thermic Lithic Haploxerolls

 Montara-----Loamy, magnesian, thermic Lithic Haploxerolls

 Bonnydoon variant-----Loamy, mixed, thermic Lithic Haploxerolls

 Lithic Ultic Haploxerolls

 McMullin-----Loamy, mixed, mesic Lithic Ultic Haploxerolls

 Pachic Haploxerolls

 Sheridan-----Coarse-loamy, mixed, thermic Pachic Haploxerolls

 Calera-----Fine-loamy, mixed, isomesic Pachic Haploxerolls

 Sweeney-----Fine-loamy, mixed, mesic Pachic Haploxerolls

 Gazos-----Fine-loamy, mixed, thermic Pachic Haploxerolls

 Gazos (dark phase)-----Fine-loamy, mixed, thermic Pachic Haploxerolls

ULTISOLS

 Udults

 Hapludults

 Typic Hapludults

 Butano-----Fine-loamy, mixed, mesic Typic Hapludults

 Xerults

 Haploxerults

 Typic Haploxerults

 Maymen variant-----Fine, mixed, mesic Typic Haploxerults

 Josephine-----Fine-loamy, mixed, mesic Typic Haploxerults

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