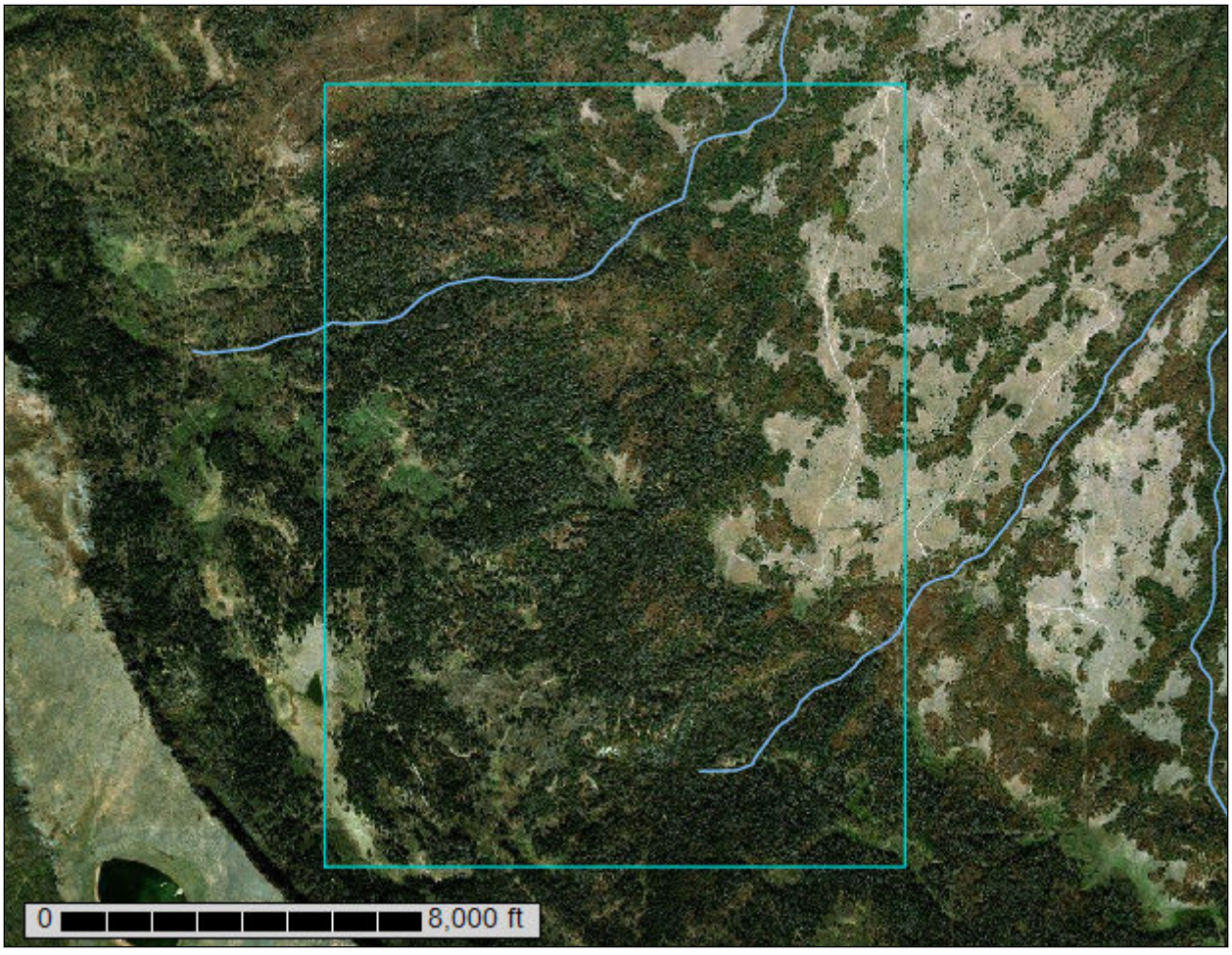
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties



October 10, 2017

Preface

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

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

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

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

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

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

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Contents

How Soil Surveys Are Made

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

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

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

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

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

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

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

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

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

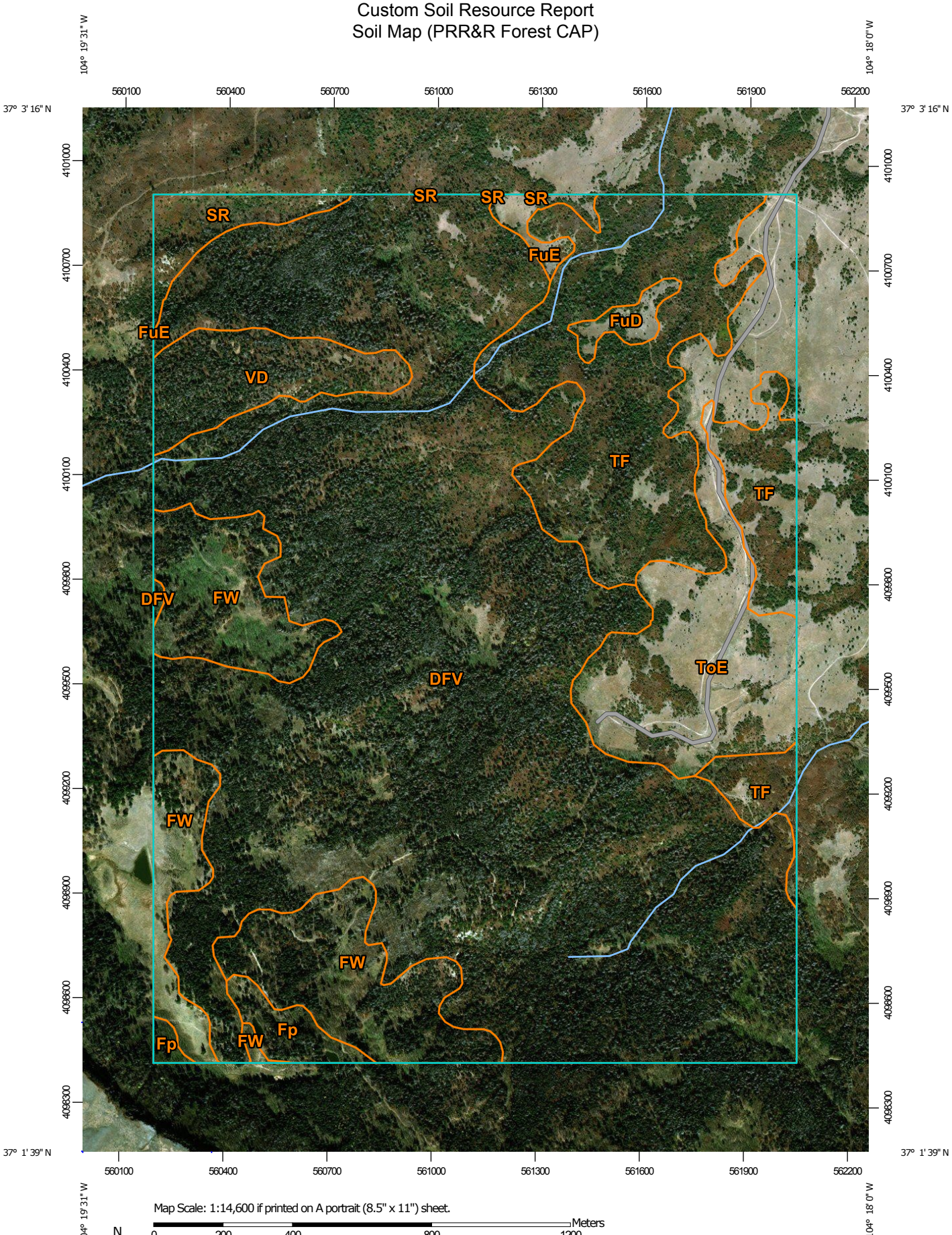
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map (PRR&R Forest CAP)



MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 19, Sep 23, 2016

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

Date(s) aerial images were photographed: Aug 25, 2011—Feb 6, 2017

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

Map Unit Legend (PRR&R Forest CAP)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	663.8	58.0%
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	13.5	1.2%
FuD	Bandarito clay loam, 3 to 9 percent slopes	7.0	0.6%
FuE	Bandarito clay loam, 9 to 18 percent slopes	7.3	0.6%
FW	Bandarito-Fishers complex, 5 to 20 percent slopes, stony	120.8	10.5%
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	17.1	1.5%
TF	Torreon-Fuera complex, 9 to 30 percent slopes	165.5	14.5%
ToE	Torreon soils complex, 5 to 20 percent slopes	113.3	9.9%
VD	Dargol-Stout-Vamer complex, 1 to 9 percent slopes	36.7	3.2%
Totals for Area of Interest		**1,145.0**	**100.0%**

Map Unit Descriptions (PRR&R Forest CAP)

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

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

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

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

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

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

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

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

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

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

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

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

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

Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

DFV—Fuera-Dargol-Vamer complex, 10 to 45 percent slopes

Map Unit Setting

National map unit symbol: hw0f
Elevation: 7,500 to 9,000 feet
Mean annual precipitation: 17 to 22 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Fuera and similar soils: 35 percent
Dargol and similar soils: 30 percent
Vamer and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fuera

Setting

Landform: Hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium and colluvium derived from shale and siltstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
E - 2 to 7 inches: cobbly loam
E and Bt - 7 to 10 inches: cobbly loam
E and Bt - 10 to 11 inches: cobbly clay loam
Bt1 - 11 to 27 inches: cobbly clay
Bt2 - 27 to 47 inches: cobbly clay
C - 47 to 60 inches: cobbly clay

Properties and qualities

Slope: 10 to 45 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mixed Conifer 25-30" (F048AY009NM)
Other vegetative classification: Rocky Mountain Douglas fir/ponderosa pine/ mountain muhly (Pmeg-Pipo)
Hydric soil rating: No

Description of Dargol

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and residuum weathered from shale and siltstone

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
E - 1 to 6 inches: loam
Bt1 - 6 to 10 inches: clay
Bt2 - 10 to 29 inches: clay
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 45 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mixed Conifer 25-30" (F048AY009NM)
Other vegetative classification: Rocky Mountain Douglas fir/ponderosa pine/ mountain muhly (Pmeg-Pipo)
Hydric soil rating: No

Description of Vamer

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Base slope, interfluve
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Slope alluvium and residuum weathered from siltstone over sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: fine sandy loam
E - 3 to 7 inches: fine sandy loam
Bt - 7 to 16 inches: clay
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 40 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Other vegetative classification: ponderosa pine/mountain muhly (Pipo/Mumo)
Hydric soil rating: No

Minor Components

Saruche

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Shrubby Foothill (R049XF223CO)
Hydric soil rating: No

Stout

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Head slope, interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/mountain muhly (Pipo/Mumo)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Landform: Scarps

Hydric soil rating: No

Fp—Fishers very cobbly loam, 15 to 45 percent slopes, very stony

Map Unit Setting

National map unit symbol: hw0d
Elevation: 8,000 to 9,000 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Fishers

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium derived from basalt

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A1 - 1 to 5 inches: very cobbly loam
A2 - 5 to 9 inches: very cobbly loam
E - 9 to 14 inches: very cobbly loam
Bt1 - 14 to 19 inches: very gravelly clay loam
Bt2 - 19 to 36 inches: very gravelly clay
Bt3 - 36 to 47 inches: very gravelly clay loam
C - 47 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 15 to 45 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Ponderosa Pine Forest 17-25" (F048AY010NM)
Other vegetative classification: Ponderosa pine/Gambel's oak (PIPO/QUGA)
Hydric soil rating: No

Minor Components

Tecolote
Percent of map unit: 10 percent
Landform: Fans
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Ponderosa Pine Forest 17-25" (F048AY010NM)
Other vegetative classification: Ponderosa pine/Gambel's oak (PIPO/QUGA)
Hydric soil rating: No

Rubble land
Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Hydric soil rating: No

FuD—Bandarito clay loam, 3 to 9 percent slopes

Map Unit Setting
National map unit symbol: hw00
Elevation: 7,000 to 8,500 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

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

Description of Bandarito

Setting
Landform: Valley sides, fan remnants

Landform position (two-dimensional): Footslope, toeslope, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from clayey shale

Typical profile

A - 0 to 3 inches: clay loam
Bt1 - 3 to 12 inches: silty clay loam
Bt2 - 12 to 18 inches: silty clay
Bt3 - 18 to 29 inches: silty clay
Btk1 - 29 to 35 inches: clay
Btk2 - 35 to 40 inches: clay
BCtk - 40 to 56 inches: silty clay
Bk - 56 to 66 inches: clay loam

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Clayey Foothill (R049XB208CO)
Other vegetative classification: Clayey (G049XW001CO), Clayey Foothills #208 (049XY208CO_3)
Hydric soil rating: No

Minor Components

Molinaro

Percent of map unit: 8 percent
Landform: Terraces, fan remnants, valley floors
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Loamy Foothill (R049XB202CO)
Other vegetative classification: Loamy (G049XW017CO), Loamy Foothills #202 (049XY202CO_2)
Hydric soil rating: No

Trujillo

Percent of map unit: 5 percent

Landform: Drainageways, fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Foothill (R049XB202CO)
Other vegetative classification: Loamy (G049XW017CO), Loamy Foothills #202 (049XY202CO_2)
Hydric soil rating: No

Furia

Percent of map unit: 2 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Mountain Meadow (R049XY241CO)
Other vegetative classification: Wet (G049XW034CO)
Hydric soil rating: Yes

FuE—Bandarito clay loam, 9 to 18 percent slopes

Map Unit Setting

National map unit symbol: hw01
Elevation: 7,800 to 8,800 feet
Mean annual precipitation: 18 to 23 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Bandarito

Setting

Landform: Fan remnants
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from shale and siltstone

Typical profile

A - 0 to 3 inches: clay loam
Bt1 - 3 to 12 inches: silty clay loam
Bt2 - 12 to 18 inches: silty clay
Bt3 - 18 to 29 inches: silty clay

Btk1 - 29 to 35 inches: clay
Btk2 - 35 to 40 inches: clay
BCtk - 40 to 56 inches: silty clay
Bk - 56 to 66 inches: clay loam

Properties and qualities

Slope: 9 to 18 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Foothill (R049XB208CO)
Other vegetative classification: Clayey (G049XW001CO), Clayey Foothills #208 (049XY208CO_3)
Hydric soil rating: No

Minor Components

Fishers

Percent of map unit: 10 percent
Landform: Mountain slopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Ponderosa Pine Forest 17-25" (F048AY010NM)
Other vegetative classification: Ponderosa pine/Gambel's oak (PIPO/QUGA)
Hydric soil rating: No

Furia

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Mountain Meadow (R049XY241CO)
Other vegetative classification: Wet (G049XW034CO)
Hydric soil rating: Yes

FW—Bandarito-Fishers complex, 5 to 20 percent slopes, stony

Map Unit Setting

National map unit symbol: hw02
Elevation: 6,800 to 8,800 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 42 to 46 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Bandarito and similar soils: 45 percent
Fishers and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bandarito

Setting

Landform: Fan remnants
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Alluvium derived from shale and siltstone

Typical profile

A - 0 to 3 inches: clay loam
Bt1 - 3 to 12 inches: silty clay loam
Bt2 - 12 to 18 inches: silty clay
Bt3 - 18 to 29 inches: silty clay
Btk1 - 29 to 35 inches: clay
Btk2 - 35 to 40 inches: clay
BCtk - 40 to 56 inches: silty clay
Bk - 56 to 66 inches: clay loam

Properties and qualities

Slope: 5 to 18 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Foothill (R049XB208CO)
Other vegetative classification: Clayey (G049XW001CO), Clayey Foothills #208 (049XY208CO_3)
Hydric soil rating: No

Description of Fishers

Setting

Landform: Fans
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from basalt

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A1 - 1 to 5 inches: very cobbly loam
A2 - 5 to 9 inches: very cobbly loam
E - 9 to 14 inches: very cobbly loam
Bt1 - 14 to 19 inches: very gravelly clay loam
Bt2 - 19 to 36 inches: very gravelly clay
Bt3 - 36 to 47 inches: very gravelly clay loam
C - 47 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 5 to 20 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Ponderosa Pine Forest 17-25" (F048AY010NM)
Other vegetative classification: Ponderosa pine/Gambel's oak (PIPO/QUGA)
Hydric soil rating: No

Minor Components

Trujillo

Percent of map unit: 10 percent
Landform: Fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Foothill (R049XB202CO)
Other vegetative classification: Loamy (G049XW017CO), Loamy Foothills #202 (049XY202CO_2)
Hydric soil rating: No

Furia

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Mountain Meadow (R049XY241CO)
Other vegetative classification: Wet (G049XW034CO)
Hydric soil rating: Yes

SR—Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: hw1d
Elevation: 6,800 to 8,500 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 42 to 46 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Saruche and similar soils: 40 percent
Rombo and similar soils: 35 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saruche

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, head slope

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and residuum weathered from shale

Typical profile

A - 0 to 4 inches: channery silty clay loam
Bw - 4 to 16 inches: parachannery silty clay loam
Cr1 - 16 to 20 inches: bedrock
Cr2 - 20 to 30 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 8 to 20 inches to paralithic bedrock; 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shrubby Foothill (R049XF223CO)
Hydric soil rating: No

Description of Rombo

Setting

Landform: Hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and residuum weathered from shale and siltstone

Typical profile

A - 0 to 4 inches: channery silty clay loam
Bw - 4 to 22 inches: channery silty clay loam
Bk - 22 to 34 inches: parachannery silty clay loam
Cr - 34 to 44 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shrubby Foothill (R049XF223CO)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Scarps
Parent material: Sandstone

Typical profile

R - 0 to 60 inches: bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Bandarito

Percent of map unit: 5 percent
Landform: Valley sides, fan remnants
Landform position (two-dimensional): Footslope, toeslope, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Clayey Foothill (R049XB208CO)
Other vegetative classification: Clayey (G049XW001CO), Clayey Foothills #208 (049XY208CO_3)
Hydric soil rating: No

Stout

Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Head slope, interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/mountain muhly (Pipo/Mumo)
Hydric soil rating: No

Dargol

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Douglas fir (048AY903CO)
Hydric soil rating: No

TF—Torreon-Fuera complex, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: 3jq8
Elevation: 6,500 to 7,500 feet
Mean annual precipitation: 15 to 17 inches
Mean annual air temperature: 43 to 53 degrees F
Frost-free period: 80 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Torreon, Stony

Setting

Landform: Fan remnants
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from basalt and sedimentary rock

Typical profile

A - 0 to 7 inches: stony clay loam
BA - 7 to 11 inches: clay loam
Bt - 11 to 29 inches: clay
Btk - 29 to 37 inches: clay
BCk - 37 to 60 inches: cobbly clay loam

Properties and qualities

Slope: 9 to 15 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 24 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Foothill (R049XB208CO)
Other vegetative classification: Clayey Foothill #208 (049XY208CO_2)
Hydric soil rating: No

Description of Fuera

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium and colluvium derived from basalt and shale

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
E - 2 to 7 inches: cobbly loam
E and Bt - 7 to 10 inches: cobbly loam
E and Bt - 10 to 11 inches: cobbly clay loam
Bt1 - 11 to 27 inches: cobbly clay
Bt2 - 27 to 47 inches: cobbly clay
C - 47 to 60 inches: cobbly clay

Properties and qualities

Slope: 15 to 30 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C
Other vegetative classification: Ponderosa pine/Gambel's oak (PIPO/QUGA)
Hydric soil rating: No

Minor Components

Capulin
Percent of map unit: 10 percent
Landform: Fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Basalt Loam (R070XY071CO)
Other vegetative classification: Loamy (G070XW017CO), Loamy Plains #4 (049XY004CO_2)
Hydric soil rating: No

Lorencito
Percent of map unit: 5 percent
Landform: Fan remnants
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Shaly Foothill (R049XB212CO)
Other vegetative classification: Needs Field Review (G070XW050CO), shaley foothills #212 (49XY212CO)
Hydric soil rating: No

ToE—Torreon soils complex, 5 to 20 percent slopes

Map Unit Setting
National map unit symbol: 3jqf
Elevation: 5,000 to 7,500 feet
Mean annual precipitation: 14 to 17 inches
Mean annual air temperature: 49 to 53 degrees F
Frost-free period: 120 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition
Torreon and similar soils: 50 percent
Torreon, stony, and similar soils: 45 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Torreon

Setting
Landform: Fans, fan remnants

Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from basalt

Typical profile

A - 0 to 5 inches: silt loam
Bt1 - 5 to 13 inches: silty clay
Bt2 - 13 to 27 inches: silty clay
Btk - 27 to 38 inches: silty clay
BCtk - 38 to 56 inches: cobbly clay loam
Bk - 56 to 72 inches: cobbly clay loam

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Basalt Loam (R070XY071CO)
Hydric soil rating: No

Description of Torreon, Stony

Setting

Landform: Fans, fan remnants
Landform position (two-dimensional): Toeslope, footslope, summit
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from basalt

Typical profile

A - 0 to 7 inches: stony clay loam
BA - 7 to 11 inches: clay loam
Bt - 11 to 29 inches: clay
Btk - 29 to 37 inches: clay
BCk - 37 to 60 inches: cobbly clay loam

Properties and qualities

Slope: 5 to 20 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 24 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Foothill (R049XB208CO)
Other vegetative classification: Clayey Foothill #208 (049XY208CO_2)
Hydric soil rating: No

Minor Components

Eguaje

Percent of map unit: 5 percent
Landform: Fan remnants
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Basalt Breaks (R070XY070CO)
Other vegetative classification: Basalt breaks #70 (070XY070CO_2)
Hydric soil rating: No

VD—Dargol-Stout-Vamer complex, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: hw07
Elevation: 7,000 to 8,500 feet
Mean annual precipitation: 17 to 22 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Dargol and similar soils: 40 percent
Stout and similar soils: 25 percent
Vamer and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dargol

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and residuum weathered from shale and siltstone

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
E - 1 to 6 inches: loam
Bt1 - 6 to 10 inches: clay
Bt2 - 10 to 29 inches: clay
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 9 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Other vegetative classification: Ponderosa pine/Gambel's oak (PIPO/QUGA)
Hydric soil rating: No

Description of Stout

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Head slope, interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and residuum weathered from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: gravelly sandy loam
Bw - 5 to 16 inches: gravelly sandy loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 9 percent

Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Other vegetative classification: ponderosa pine/mountain muhly (Pipo/Mumo)
Hydric soil rating: No

Description of Vamer

Setting

Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, head slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or colluvium derived from shale over sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: fine sandy loam
E - 3 to 7 inches: fine sandy loam
Bt - 7 to 16 inches: clay
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 9 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Other vegetative classification: ponderosa pine/mountain muhly (Pipo/Mumo)
Hydric soil rating: No

Minor Components

Fuera

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Other vegetative classification: Rocky Mountain Douglas fir/ponderosa pine/ mountain muhly (Pmeg-Pipo)
Hydric soil rating: No

Littlepine

Percent of map unit: 5 percent
Landform: Fan remnants, hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, base slope, rise
Down-slope shape: Linear
Across-slope shape: Convex
Other vegetative classification: ponderosa pine/mountain muhly (Pipo/Mumo)
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

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

Land Management

Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Construction Limitations for Haul Roads and Log Landings (PRR&R Forest CAP)

For limitations affecting the construction of haul roads and log landings, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification of the soil, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding.

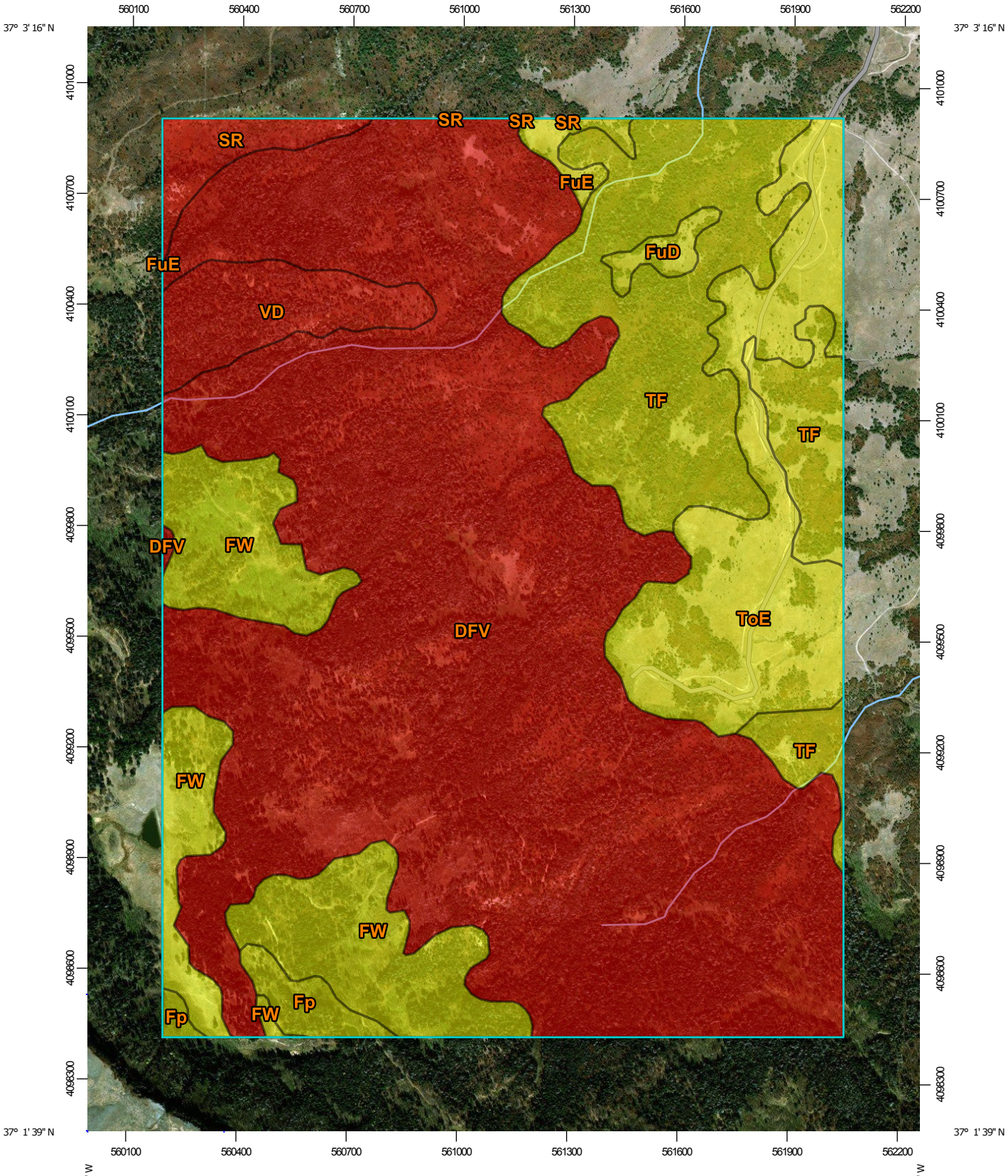
The ratings are both verbal and numerical. Rating class terms indicate the degree to which the soils are suited to this aspect of forestland management. The limitations are described as slight, moderate, or severe. A rating of "slight" indicates that no significant limitations affect construction activities. "Moderate" indicates that one or more limitations can cause some difficulty in construction. "Severe" indicates that one or more limitations can make construction very difficult or very costly.

Numerical ratings 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 aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Map—Construction Limitations for Haul Roads and Log Landings (PRR&R Forest CAP)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Severe

Moderate

Slight

Not rated or not available

Soil Rating Lines

Severe

Moderate

Slight

Not rated or not available

Soil Rating Points

Severe

Moderate

Slight

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 19, Sep 23, 2016

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

Date(s) aerial images were photographed: Aug 25, 2011—Feb 6, 2017

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

Tables—Construction Limitations for Haul Roads and Log Landings (PRR&R Forest CAP)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	Severe	Dargol (30%)	Restrictive layer (1.00)	663.8	58.0%
				Landslides (0.60)		
				Slope (0.50)		
				Dusty (0.11)		
			Vamer (20%)	Restrictive layer (1.00)		
				Slope (0.50)		
				Dusty (0.06)		
			Stout (5%)	Restrictive layer (1.00)		
				Slope (0.50)		
				Dusty (0.01)		
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	Moderate	Fishers (85%)	Slope (0.50)	13.5	1.2%
				Dusty (0.05)		
			Tecolote (10%)	Slope (0.50)		
				Stoniness (0.50)		
				Dusty (0.01)		
FuD	Bandarito clay loam, 3 to 9 percent slopes	Moderate	Bandarito (85%)	Low strength (0.50)	7.0	0.6%
				Dusty (0.11)		
			Molinaro (8%)	Low strength (0.50)		
				Dusty (0.09)		
			Trujillo (5%)	Low strength (0.50)		
				Dusty (0.07)		
FuE	Bandarito clay loam, 9 to 18 percent slopes	Moderate	Bandarito (85%)	Low strength (0.50)	7.3	0.6%
				Landslides (0.27)		
				Dusty (0.11)		
FW	Bandarito-Fishers complex, 5 to 20 percent slopes, stony	Moderate	Bandarito (45%)	Low strength (0.50)	120.8	10.5%
				Landslides (0.21)		
				Dusty (0.12)		
			Trujillo (10%)	Low strength (0.50)		
				Dusty (0.07)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	Severe	Saruche (40%)	Slope (1.00)	17.1	1.5%
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.13)		
			Rombo (35%)	Slope (1.00)		
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.13)		
			Stout (3%)	Restrictive layer (1.00)		
				Slope (0.50)		
				Dusty (0.01)		
			Dargol (2%)	Slope (1.00)		
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.12)		
TF	Torreon-Fuera complex, 9 to 30 percent slopes	Moderate	Torreon, stony (50%)	Low strength (0.50)	165.5	14.5%
				Dusty (0.37)		
			Fuera (35%)	Landslides (0.54)		
				Slope (0.50)		
				Dusty (0.17)		
			Capulin (10%)	Low strength (0.50)		
				Dusty (0.30)		
			Lorencito (5%)	Slope (0.50)		
				Stickiness/slope (0.50)		
				Dusty (0.31)		
ToE	Torreon soils complex, 5 to 20 percent slopes	Moderate	Torreon (50%)	Stickiness/slope (0.50)	113.3	9.9%
				Low strength (0.50)		
				Dusty (0.47)		
				Landslides (0.05)		
			Torreon, stony (45%)	Low strength (0.50)		
				Dusty (0.37)		
			Eguaje (5%)	Stoniness (0.50)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Dusty (0.39)		
VD	Dargol-Stout-Vamer complex, 1 to 9 percent slopes	Severe	Stout (25%)	Restrictive layer (1.00)	36.7	3.2%
				Dusty (0.01)		
			Vamer (20%)	Restrictive layer (1.00)		
				Low strength (0.50)		
				Dusty (0.07)		
Totals for Area of Interest					**1,145.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Severe	717.6	62.7%
Moderate	427.4	37.3%
Totals for Area of Interest	**1,145.0**	**100.0%**

Rating Options—Construction Limitations for Haul Roads and Log Landings (PRR&R Forest CAP)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Erosion Hazard (Off-Road, Off-Trail) (PRR&R Forest CAP)

The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope and soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

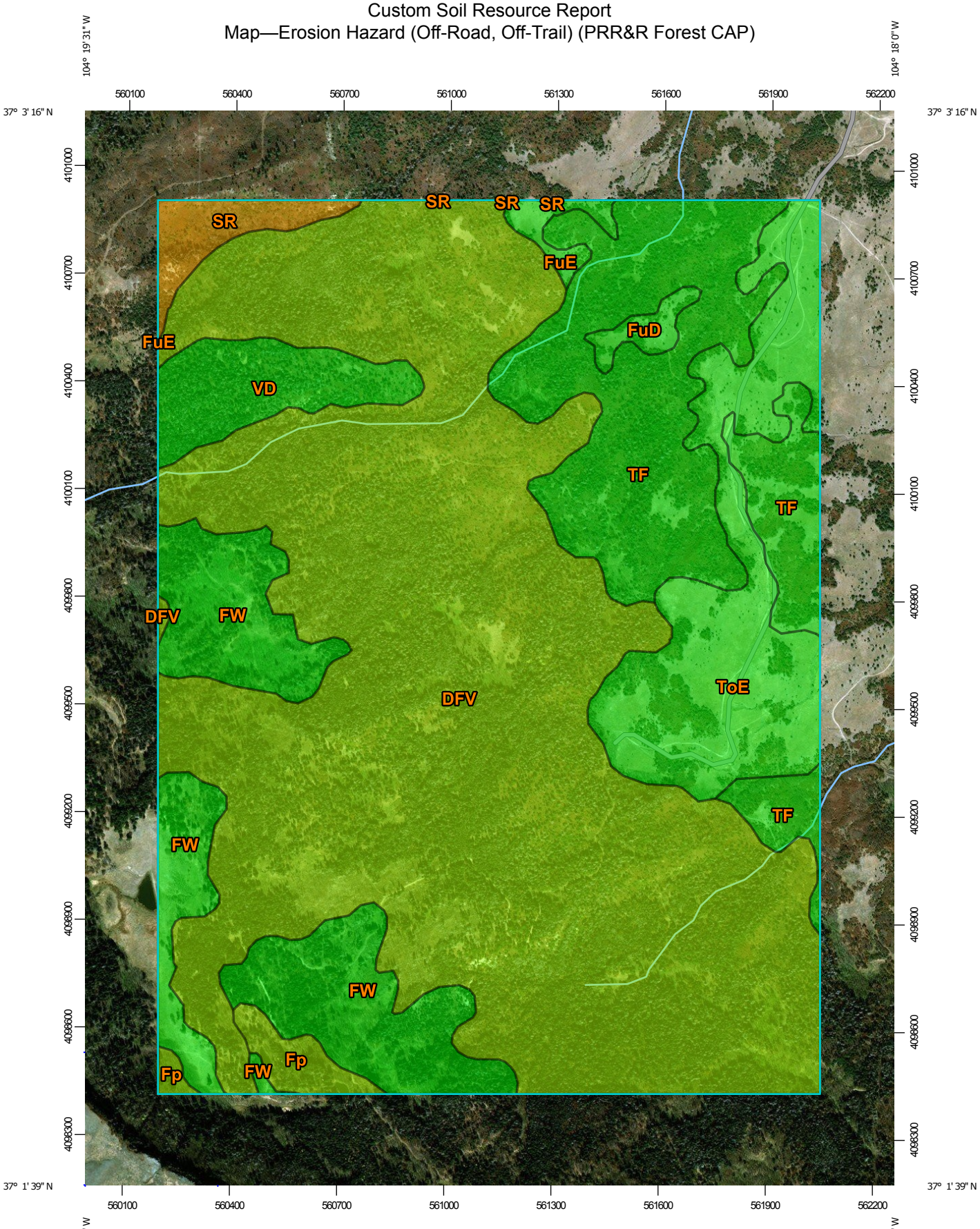
The ratings are both verbal and numerical. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be 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.

Numerical ratings 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 aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Erosion Hazard (Off-Road, Off-Trail) (PRR&R Forest CAP)



Map Scale: 1:14,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

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

Soils

Soil Rating Polygons
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Lines
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Points
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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Survey Area Data: Version 19, Sep 23, 2016

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

Date(s) aerial images were photographed: Aug 25, 2011—Feb 6, 2017

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

Tables—Erosion Hazard (Off-Road, Off-Trail) (PRR&R Forest CAP)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	Moderate	Fuera (35%)	Slope/erodibility (0.50)	663.8	58.0%
			Dargol (30%)	Slope/erodibility (0.50)		
			Vamer (20%)	Slope/erodibility (0.50)		
			Stout (5%)	Slope/erodibility (0.50)		
			Saruche (5%)	Slope/erodibility (0.50)		
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	Moderate	Fishers (85%)	Slope/erodibility (0.50)	13.5	1.2%
			Tecolote (10%)	Slope/erodibility (0.50)		
FuD	Bandarito clay loam, 3 to 9 percent slopes	Slight	Bandarito (85%)		7.0	0.6%
			Molinaro (8%)			
			Trujillo (5%)			
			Furia (2%)			
FuE	Bandarito clay loam, 9 to 18 percent slopes	Slight	Bandarito (85%)		7.3	0.6%
			Fishers (10%)			
			Furia (5%)			
FW	Bandarito-Fishers complex, 5 to 20 percent slopes, stony	Slight	Bandarito (45%)		120.8	10.5%
			Fishers (40%)			
			Trujillo (10%)			
			Furia (5%)			
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	Severe	Saruche (40%)	Slope/erodibility (0.75)	17.1	1.5%
			Rombo (35%)	Slope/erodibility (0.75)		
TF	Torreon-Fuera complex, 9 to 30 percent slopes	Slight	Torreon, stony (50%)		165.5	14.5%
			Capulin (10%)			
ToE	Torreon soils complex, 5 to 20 percent slopes	Slight	Torreon (50%)		113.3	9.9%
			Torreon, stony (45%)			
			Eguaje (5%)			
VD	Dargol-Stout-Vamer	Slight	Dargol (40%)		36.7	3.2%
			Stout (25%)			

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	complex, 1 to 9 percent slopes		Vamer (20%)			
			Fuera (10%)			
			Littlepine (5%)			
Totals for Area of Interest					**1,145.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderate	677.4	59.2%
Slight	450.5	39.3%
Severe	17.1	1.5%
Totals for Area of Interest	**1,145.0**	**100.0%**

Rating Options—Erosion Hazard (Off-Road, Off-Trail) (PRR&R Forest CAP)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Harvest Equipment Operability (PRR&R Forest CAP)

Ratings for this interpretation indicate the suitability for use of forestland harvesting equipment. The ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification of the soil, depth to a water table, and ponding. Standard rubber-tire skidders and bulldozers are assumed to be used for ground-based harvesting and transport.

The ratings are both verbal and numerical. Rating class terms indicate the degree to which the soils are suited to this aspect of forestland management. "Well suited" indicates that the soil has features that are favorable for the specified management aspect 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 management aspect. 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 management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

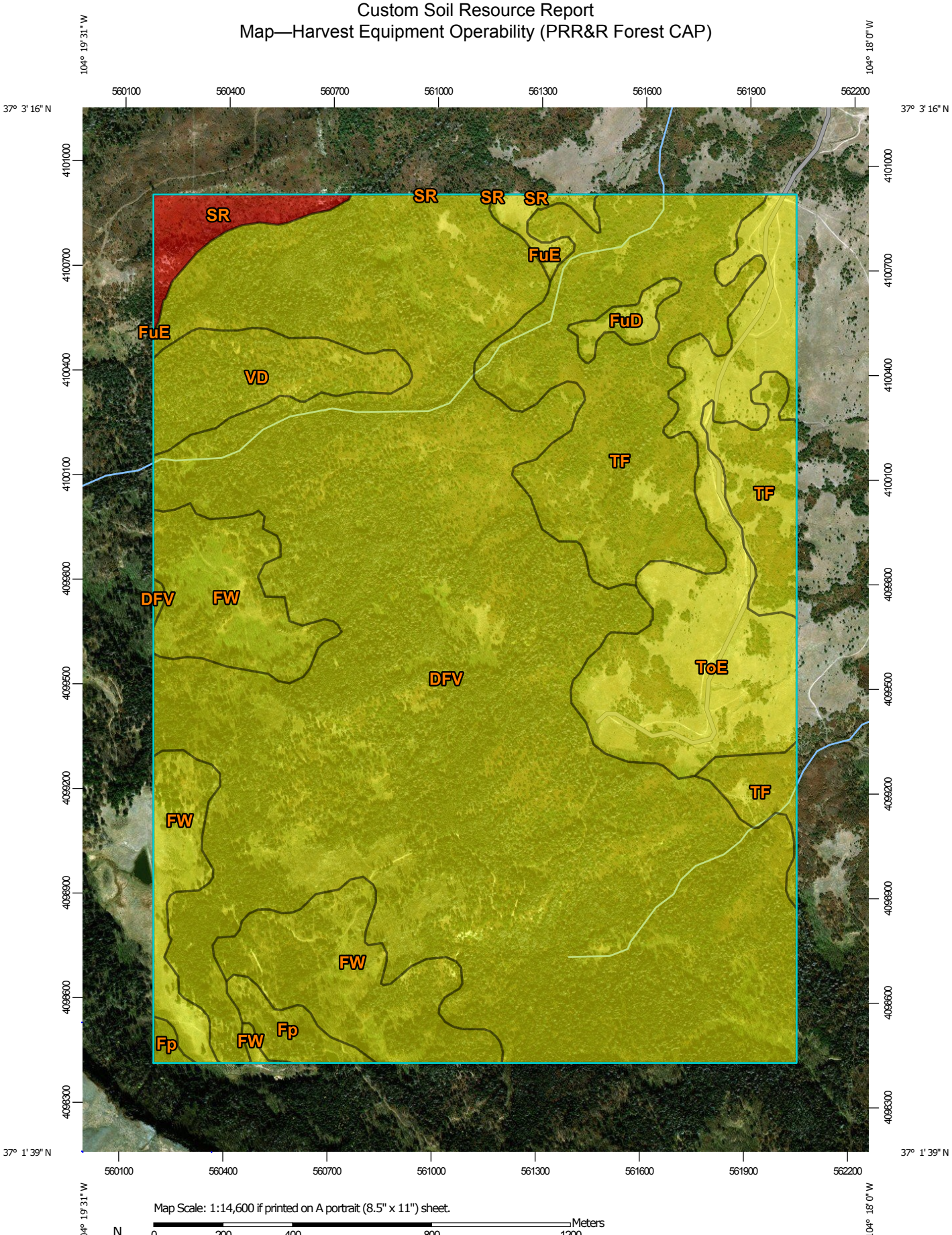
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the

specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Harvest Equipment Operability (PRR&R Forest CAP)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Poorly suited

Moderately suited

Well suited

Not rated or not available

Soil Rating Lines

Poorly suited

Moderately suited

Well suited

Not rated or not available

Soil Rating Points

Poorly suited

Moderately suited

Well suited

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 19, Sep 23, 2016

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

Date(s) aerial images were photographed: Aug 25, 2011—Feb 6, 2017

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

Tables—Harvest Equipment Operability (PRR&R Forest CAP)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	Moderately suited	Fuera (35%)	Slope (0.50)	663.8	58.0%
				Low strength (0.50)		
				Dusty (0.08)		
			Dargol (30%)	Slope (0.50)		
				Low strength (0.50)		
				Dusty (0.11)		
			Vamer (20%)	Slope (0.50)		
				Dusty (0.06)		
			Saruche (5%)	Slope (0.50)		
				Low strength (0.50)		
				Dusty (0.13)		
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	Moderately suited	Fishers (85%)	Slope (0.50)	13.5	1.2%
				Rock fragments (0.50)		
				Dusty (0.05)		
			Tecolote (10%)	Slope (0.50)		
				Rock fragments (0.50)		
				Dusty (0.01)		
FuD	Bandarito clay loam, 3 to 9 percent slopes	Moderately suited	Bandarito (85%)	Low strength (0.50)	7.0	0.6%
				Dusty (0.11)		
			Molinaro (8%)	Low strength (0.50)		
				Dusty (0.09)		
			Trujillo (5%)	Low strength (0.50)		
				Dusty (0.07)		
FuE	Bandarito clay loam, 9 to 18 percent slopes	Moderately suited	Bandarito (85%)	Low strength (0.50)	7.3	0.6%
				Dusty (0.11)		
			Fishers (10%)	Rock fragments (0.50)		
				Dusty (0.07)		
FW	Bandarito-Fishers complex, 5 to	Moderately suited	Bandarito (45%)	Low strength (0.50)	120.8	10.5%
				Dusty (0.12)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	20 percent slopes, stony		Fishers (40%)	Rock fragments (0.50)		
				Dusty (0.05)		
			Trujillo (10%)	Low strength (0.50)		
				Dusty (0.07)		
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	Poorly suited	Saruche (40%)	Slope (1.00)	17.1	1.5%
				Low strength (0.50)		
				Dusty (0.13)		
			Rombo (35%)	Slope (1.00)		
				Low strength (0.50)		
				Dusty (0.13)		
TF	Torreon-Fuera complex, 9 to 30 percent slopes	Moderately suited	Torreon, stony (50%)	Low strength (0.50)	165.5	14.5%
				Rock fragments (0.50)		
				Dusty (0.37)		
			Fuera (35%)	Low strength (0.50)		
				Slope (0.50)		
				Dusty (0.17)		
			Capulin (10%)	Low strength (0.50)		
				Dusty (0.30)		
			Lorencito (5%)	Slope (0.50)		
				Dusty (0.31)		
ToE	Torreon soils complex, 5 to 20 percent slopes	Moderately suited	Torreon (50%)	Low strength (0.50)	113.3	9.9%
				Dusty (0.47)		
			Torreon, stony (45%)	Low strength (0.50)		
				Rock fragments (0.50)		
				Dusty (0.37)		
			Eguaje (5%)	Rock fragments (0.50)		
				Low strength (0.50)		
				Dusty (0.39)		
VD	Dargol-Stout-Vamer complex, 1 to 9 percent slopes	Moderately suited	Dargol (40%)	Low strength (0.50)	36.7	3.2%
				Dusty (0.11)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Fuera (10%)	Low strength (0.50)		
				Dusty (0.11)		
Totals for Area of Interest					**1,145.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderately suited	1,127.9	98.5%
Poorly suited	17.1	1.5%
Totals for Area of Interest	**1,145.0**	**100.0%**

Rating Options—Harvest Equipment Operability (PRR&R Forest CAP)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Potential for Damage by Fire (PRR&R Forest CAP)

The ratings in this interpretation indicate the potential for damage to nutrient, physical, and biotic soil characteristics by fire. The ratings involve 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.

The ratings 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 ratings are both verbal and numerical. The soils are described as having a "low," "moderate," or "high" potential for this kind of damage. "Low" indicates that fire damage is unlikely. Good performance can be expected, and little or no maintenance is needed. "Moderate" indicates that fire damage can occur because one or more soil properties are less than desirable. Fair performance can be expected, and some maintenance is needed. "High" indicates that fire damage can occur because of one or more soil properties and that overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

Numerical ratings indicate gradations between the point at which the potential for fire damage is highest (1.00) and the point at which the potential is lowest (0.00).

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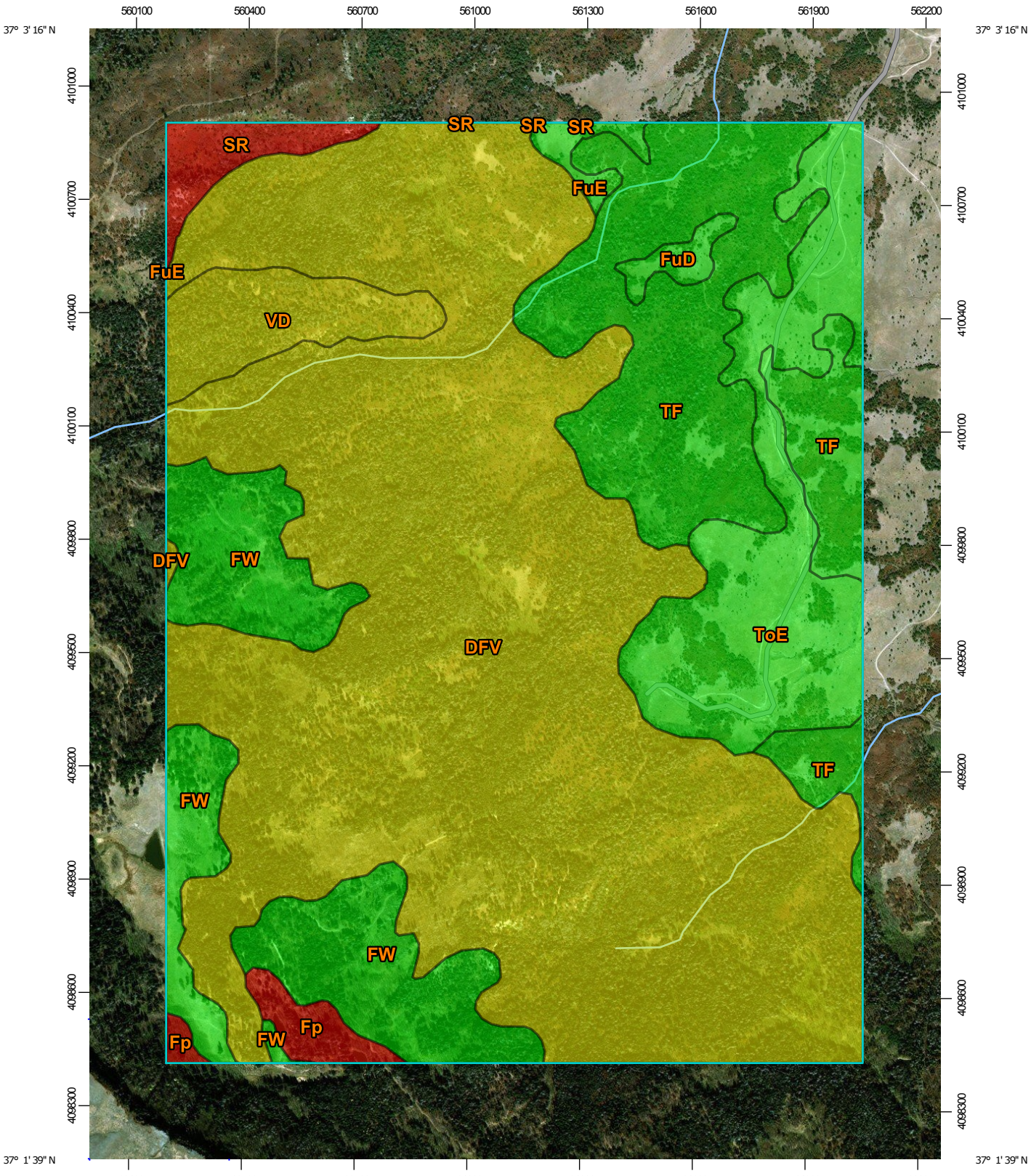
Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Potential for Damage by Fire (PRR&R Forest CAP)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- High
- Moderate
- Low
- Not rated or not available

Soil Rating Lines

- High
- Moderate
- Low
- Not rated or not available

Soil Rating Points

- High
- Moderate
- Low
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Tables—Potential for Damage by Fire (PRR&R Forest CAP)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	Moderate	Fuera (35%)	Texture/rock fragments (0.50)	663.8	58.0%
			Dargol (30%)	Texture/rock fragments (0.50)		
			Vamer (20%)	Texture/surface depth/rock fragments (0.50)		
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	High	Fishers (85%)	Texture/slope/surface depth/rock fragments (1.00)	13.5	1.2%
			Tecolote (10%)	Texture/surface depth/rock fragments (1.00)		
FuD	Bandarito clay loam, 3 to 9 percent slopes	Low	Bandarito (85%)		7.0	0.6%
			Molinaro (8%)	Texture/rock fragments (0.10)		
			Trujillo (5%)	Texture/rock fragments (0.10)		
			Furia (2%)			
FuE	Bandarito clay loam, 9 to 18 percent slopes	Low	Bandarito (85%)		7.3	0.6%
			Furia (5%)			
FW	Bandarito-Fishers complex, 5 to 20 percent slopes, stony	Low	Bandarito (45%)		120.8	10.5%
			Trujillo (10%)	Texture/rock fragments (0.10)		
			Furia (5%)			
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	High	Saruche (40%)	Texture/slope/surface depth (1.00)	17.1	1.5%
			Rombo (35%)	Texture/slope/surface depth (1.00)		
			Stout (3%)	Texture/slope/surface depth/rock fragments (1.00)		
TF	Torreon-Fuera complex, 9 to 30 percent slopes	Low	Torreon, stony (50%)		165.5	14.5%
			Capulin (10%)			

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Lorencito (5%)			
ToE	Torreon soils complex, 5 to 20 percent slopes	Low	Torreon (50%)		113.3	9.9%
			Torreon, stony (45%)			
			Eguaje (5%)			
VD	Dargol-Stout-Vamer complex, 1 to 9 percent slopes	Moderate	Dargol (40%)	Texture/rock fragments (0.50)	36.7	3.2%
			Vamer (20%)	Texture/surface depth/rock fragments (0.50)		
			Fuera (10%)	Texture/rock fragments (0.50)		
Totals for Area of Interest					**1,145.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderate	700.5	61.2%
Low	413.8	36.1%
High	30.6	2.7%
Totals for Area of Interest	**1,145.0**	**100.0%**

Rating Options—Potential for Damage by Fire (PRR&R Forest CAP)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Suitability for Roads (Natural Surface) (PRR&R Forest CAP)

The ratings in this interpretation indicate the suitability for using the natural surface of the soil for roads. The ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification of the soil, depth to a water table, ponding, flooding, and the hazard of soil slippage.

The ratings are both verbal and numerical. The soils are described as "well suited," "moderately suited," or "poorly suited" to this use. "Well suited" indicates that the soil has features that are favorable for the specified kind of roads and has no limitations. Good performance can be expected, and little or no maintenance is

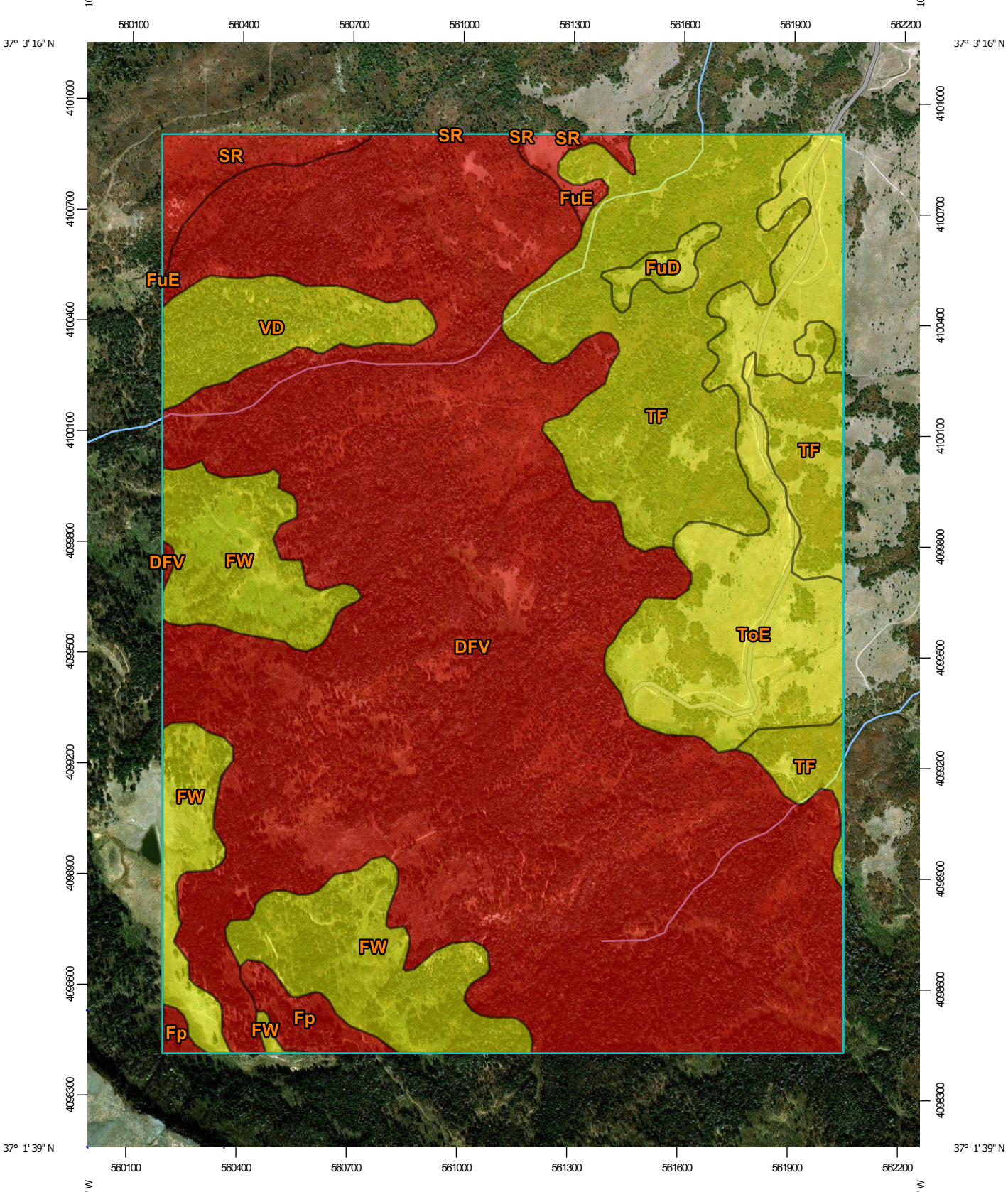
needed. "Moderately suited" indicates that the soil has features that are moderately favorable for the specified kind of roads. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. "Poorly suited" indicates that the soil has one or more properties that are unfavorable for the specified kind of roads. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

Numerical ratings 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 aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Suitability for Roads (Natural Surface) (PRR&R Forest CAP)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Poorly suited

Moderately suited

Well suited

Not rated or not available

Soil Rating Lines

Poorly suited

Moderately suited

Well suited

Not rated or not available

Soil Rating Points

Poorly suited

Moderately suited

Well suited

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 19, Sep 23, 2016

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

Date(s) aerial images were photographed: Aug 25, 2011—Feb 6, 2017

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

Tables—Suitability for Roads (Natural Surface) (PRR&R Forest CAP)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	Poorly suited	Fuera (35%)	Slope (1.00)	663.8	58.0%
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.08)		
			Dargol (30%)	Slope (1.00)		
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.11)		
			Vamer (20%)	Slope (1.00)		
				Dusty (0.06)		
			Stout (5%)	Slope (1.00)		
				Dusty (0.01)		
			Saruche (5%)	Slope (1.00)		
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.13)		
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	Poorly suited	Fishers (85%)	Slope (1.00)	13.5	1.2%
				Rock fragments (0.50)		
				Dusty (0.05)		
			Tecolote (10%)	Slope (1.00)		
				Rock fragments (0.50)		
				Dusty (0.01)		
FuD	Bandarito clay loam, 3 to 9 percent slopes	Moderately suited	Bandarito (85%)	Low strength (0.50)	7.0	0.6%
				Dusty (0.11)		
			Molinaro (8%)	Low strength (0.50)		
				Slope (0.50)		
				Dusty (0.09)		
			Trujillo (5%)	Low strength (0.50)		
				Slope (0.50)		
				Dusty (0.07)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
FuE	Bandarito clay loam, 9 to 18 percent slopes	Poorly suited	Bandarito (85%)	Slope (1.00)	7.3	0.6%
				Low strength (0.50)		
				Landslides (0.27)		
				Dusty (0.11)		
			Fishers (10%)	Slope (1.00)		
				Rock fragments (0.50)		
				Dusty (0.07)		
			Furia (5%)	Flooding (1.00)		
				Low strength (0.50)		
				Wetness (0.50)		
				Dusty (0.11)		
FW	Bandarito-Fishers complex, 5 to 20 percent slopes, stony	Moderately suited	Bandarito (45%)	Slope (0.50)	120.8	10.5%
				Low strength (0.50)		
				Landslides (0.21)		
				Dusty (0.12)		
			Trujillo (10%)	Low strength (0.50)		
				Slope (0.50)		
				Dusty (0.07)		
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	Poorly suited	Saruche (40%)	Slope (1.00)	17.1	1.5%
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.13)		
			Rombo (35%)	Slope (1.00)		
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.13)		
			Stout (3%)	Slope (1.00)		
				Dusty (0.01)		
			Dargol (2%)	Slope (1.00)		
				Landslides (0.60)		
				Low strength (0.50)		
				Dusty (0.12)		
TF	Torreon-Fuera complex, 9 to	Moderately suited	Torreon, stony (50%)	Slope (0.50)	165.5	14.5%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	30 percent slopes			Low strength (0.50)		
				Rock fragments (0.50)		
				Dusty (0.37)		
			Capulin (10%)	Slope (0.50)		
				Low strength (0.50)		
				Dusty (0.30)		
ToE	Torreon soils complex, 5 to 20 percent slopes	Moderately suited	Torreon (50%)	Slope (0.50)	113.3	9.9%
				Low strength (0.50)		
				Dusty (0.47)		
				Landslides (0.05)		
			Eguaje (5%)	Rock fragments (0.50)		
				Low strength (0.50)		
				Slope (0.50)		
				Dusty (0.39)		
VD	Dargol-Stout-Vamer complex, 1 to 9 percent slopes	Moderately suited	Dargol (40%)	Low strength (0.50)	36.7	3.2%
				Slope (0.50)		
				Dusty (0.11)		
				Landslides (0.03)		
			Fuera (10%)	Low strength (0.50)		
				Slope (0.50)		
				Dusty (0.11)		
				Landslides (0.03)		
Totals for Area of Interest					**1,145.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Poorly suited	701.7	61.3%
Moderately suited	443.3	38.7%
Totals for Area of Interest	**1,145.0**	**100.0%**

Rating Options—Suitability for Roads (Natural Surface) (PRR&R Forest CAP)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Vegetative Productivity

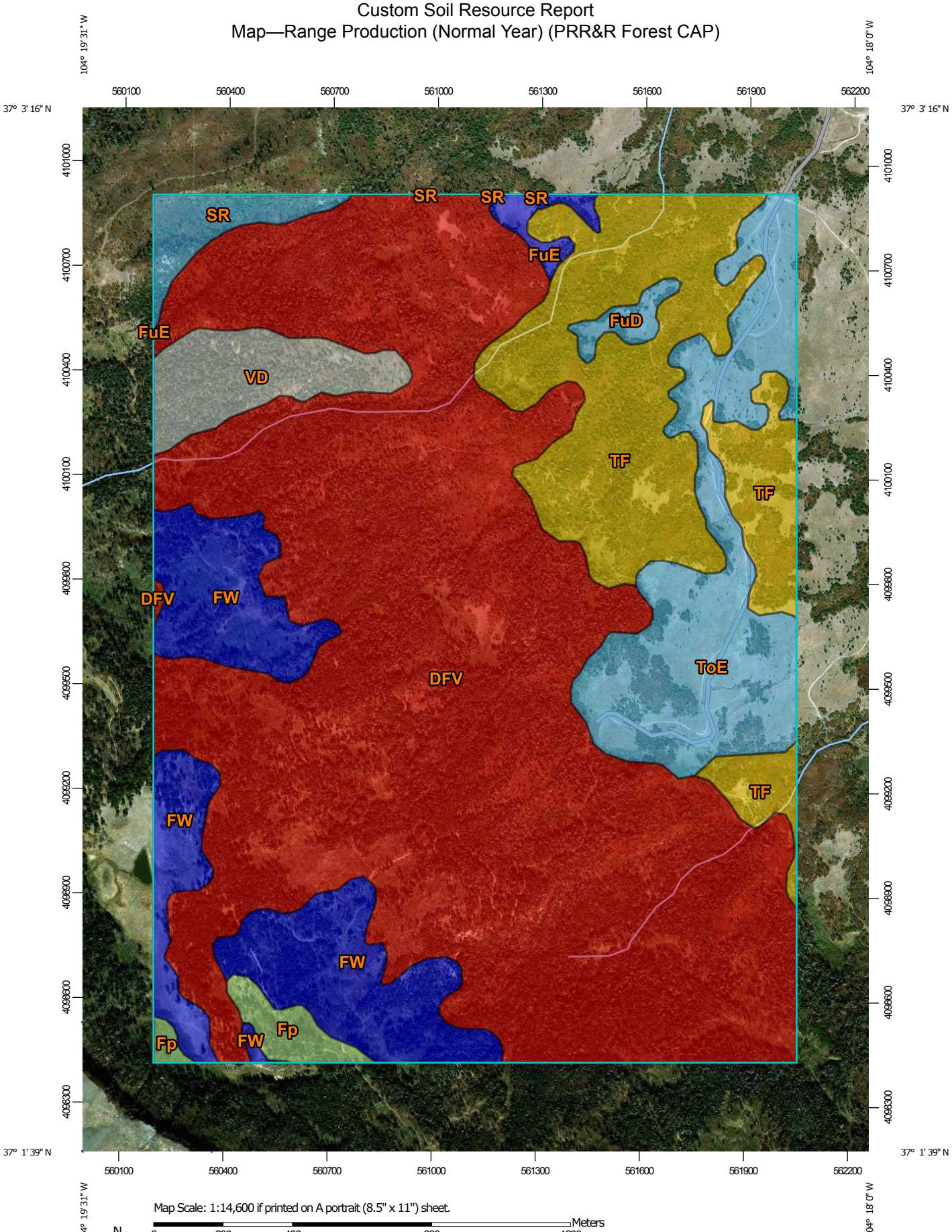
Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Range Production (Normal Year) (PRR&R Forest CAP)

Total range production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation. In a normal year, growing conditions are about average. Yields are adjusted to a common percent of air-dry moisture content.

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Map—Range Production (Normal Year) (PRR&R Forest CAP)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- <= 75
- > 75 and <= 768
- > 768 and <= 1020
- > 1020 and <= 1344
- > 1344 and <= 1485
- Not rated or not available

Soil Rating Lines

- <= 75
- > 75 and <= 768
- > 768 and <= 1020
- > 1020 and <= 1344
- > 1344 and <= 1485
- Not rated or not available

Soil Rating Points

- <= 75
- > 75 and <= 768
- > 768 and <= 1020
- > 1020 and <= 1344
- > 1344 and <= 1485
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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Date(s) aerial images were photographed: Aug 25, 2011—Feb 6, 2017

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Table—Range Production (Normal Year) (PRR&R Forest CAP)

Map unit symbol	Map unit name	Rating (pounds per acre per year)	Acres in AOI	Percent of AOI
DFV	Fuera-Dargol-Vamer complex, 10 to 45 percent slopes	75	663.8	58.0%
Fp	Fishers very cobbly loam, 15 to 45 percent slopes, very stony	1020	13.5	1.2%
FuD	Bandarito clay loam, 3 to 9 percent slopes	1344	7.0	0.6%
FuE	Bandarito clay loam, 9 to 18 percent slopes	1485	7.3	0.6%
FW	Bandarito-Fishers complex, 5 to 20 percent slopes, stony	1415	120.8	10.5%
SR	Saruche-Rombo-Rock outcrop complex, 25 to 50 percent slopes	1225	17.1	1.5%
TF	Torreon-Fuera complex, 9 to 30 percent slopes	768	165.5	14.5%
ToE	Torreon soils complex, 5 to 20 percent slopes	1333	113.3	9.9%
VD	Dargol-Stout-Vamer complex, 1 to 9 percent slopes		36.7	3.2%
Totals for Area of Interest			**1,145.0**	**100.0%**

Rating Options—Range Production (Normal Year) (PRR&R Forest CAP)

Units of Measure: pounds per acre per year

Aggregation Method: Weighted Average

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: Yes

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