

Moffat County Area, Colorado

99—Hesperus fine sandy loam, dry, 2 to 15 percent slopes

Map Unit Setting

Elevation: 6,500 to 7,000 feet

Mean annual precipitation: 16 to 18 inches

Mean annual air temperature: 40 to 43 degrees F

Frost-free period: 65 to 85 days

Map Unit Composition

Hesperus, dry, and similar soils: 85 percent

Description of Hesperus, Dry

Setting

Landform: Hills, plateaus

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope, base slope, head slope, nose slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and in alluvium derived from sandstone and shale

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water capacity: High (about 11.1 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Ecological site: Mountain Loam (R034XY228CO)

Typical profile

0 to 5 inches: Fine sandy loam

5 to 20 inches: Loam

20 to 52 inches: Clay loam

52 to 60 inches: Clay loam

206—Ustorthents, frigid-Borolls complex, 25 to 75 percent slopes

Map Unit Setting

Elevation: 7,000 to 8,500 feet

Mean annual precipitation: 16 to 20 inches

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Mean annual air temperature: 37 to 45 degrees F

Frost-free period: 50 to 85 days

Map Unit Composition

Ustorthents, frigid, and similar soils: 55 percent

Borolls and similar soils: 35 percent

Description of Ustorthents, Frigid

Setting

Landform: Mountainsides

Landform position (two-dimensional): Footslope, backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Residuum and colluvium derived from sedimentary rocks

Properties and qualities

Slope: 25 to 75 percent

Depth to restrictive feature: 10 to 30 inches to lithic bedrock; 10 to 30 inches to paralithic bedrock

Drainage class: Well drained

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

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water capacity: Very low (about 2.5 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Typical profile

0 to 3 inches: Very channery sandy loam

3 to 28 inches: Extremely channery sandy loam

28 to 32 inches: Unweathered bedrock

Description of Borolls

Setting

Landform: Mountainsides

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Residuum and colluvium derived from sedimentary rocks

Properties and qualities

Slope: 25 to 75 percent

Depth to restrictive feature: 20 to 80 inches to lithic bedrock; 20 to 80 inches to paralithic bedrock

Drainage class: Well drained

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

Depth to water table: More than 80 inches

Frequency of flooding: None

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Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Available water capacity: Low (about 4.5 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Typical profile

0 to 19 inches: Loam

19 to 30 inches: Cobbly sandy clay loam

30 to 34 inches: Unweathered bedrock

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Vegetative Productivity

This folder contains a collection of tabular reports that present vegetative productivity data. The reports (tables) include all selected map units and components for each map unit. 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.

Rangeland Productivity and Plant Composition (Herring 1-33)

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

This table shows, for each soil that supports vegetation suitable for grazing, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the

soil development process; a characteristic hydrology, particularly infiltration and runoff that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service (NRCS).

Total dry-weight 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 for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Characteristic vegetation (the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil) is listed by common name. Under *rangeland composition*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range management requires knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in the "National Range and Pasture Handbook," which is available in local offices of NRCS or on the Internet.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, [National range and pasture handbook](#).

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Rangeland Productivity and Plant Composition– Moffat County Area, Colorado						
Map unit symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct</i>
99—Hesperus fine sandy loam, dry, 2 to 15 percent slopes						
Hesperus, dry	Mountain Loam	1,800	1,500	1,200	Letterman's needlegrass	15
					Mountain big sagebrush	15
					Western wheatgrass	10
					Slender wheatgrass	10
					Elk sedge	5
					Mountain snowberry	5
					Nodding brome	5
					Miscellaneous perennial grasses	5
					Mountain brome	5
					Miscellaneous perennial forbs	5
206—Ustorthents, frigid-Borolls complex, 25 to 75 percent slopes						
Ustorthents, frigid	—	900	700	500	Wheatgrass	20
					Sagebrush	10
					Indian ricegrass	10
					Antelope bitterbrush	5
					Needleandthread	5
					True mountain mahogany	5
					Bluegrass	5
					Serviceberry	5
Borolls	—	2,500	1,800	1,200	Mountain snowberry	10
					Columbia needlegrass	10
					Gambel oak	10

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Rangeland Productivity and Plant Composition– Moffat County Area, Colorado						
Map unit symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct</i>
					Elk sedge	10
					Letterman needlegrass	10
					Mountain big sagebrush	10
					Slender wheatgrass	10
					Saskatoon serviceberry	10
					Mountain brome	10