

Rangeland Productivity and Plant Composition

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— Jefferson County, Idaho						
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>
13—Bereniceton-Rock outcrop-Aecet complex						
Bereniceton	Loamy 8-12 Artrw8/pssps	1,350	900	450	Bluebunch wheatgrass	30
					Big sagebrush	15
					Thurber needlegrass	10
					Threetip sagebrush	10
					Arrowleaf balsamroot	5
					Prairie junegrass	5
					Rabbitbrush	5
					Lupine	5
					Basin wildrye	3
					Nevada bluegrass	2
					Sandberg bluegrass	2
					Longleaf hawksbeard	2
					Indian ricegrass	2
					Bottlebrush squirreltail	2
					Thickspike wheatgrass	2
Aecet	Loamy 8-12 Artrw8/pssps	1,200	900	600	Bluebunch wheatgrass	15
					Needle and thread	15
					Big sagebrush	10
					Indian ricegrass	10
					Threetip sagebrush	10

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					Miscellaneous perennial grasses	5
					Miscellaneous shrubs	5
					Lupine	5
					Sand dropseed	5
					Arrowleaf balsamroot	5
					Antelope bitterbrush	5
					Thurber needlegrass	5
Rock outcrop	—	—	—	—	—	—
113—Terreton-Beraniceton complex						
Terreton	Loamy 8-12 Artrw8/pssps	1,200	1,000	500	Bluebunch wheatgrass	30
					Miscellaneous perennial grasses	15
					Wyoming big sagebrush	10
					Thurber needlegrass	10
					Threetip sagebrush	10
					Prairie junegrass	5
					Lupine	5
					Arrowleaf balsamroot	5
					Rabbitbrush	5
Beraniceton	Loamy 8-12 Artrw8/pssps	1,350	900	450	Bluebunch wheatgrass	30
					Big sagebrush	15
					Thurber needlegrass	10
					Threetip sagebrush	10
					Rabbitbrush	5
					Lupine	5

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		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct</i>
					Arrowleaf balsamroot	5
					Prairie junegrass	5
					Basin wildrye	3
					Nevada bluegrass	2
					Thickspike wheatgrass	2
					Bottlebrush squirreltail	2
					Longleaf hawksbeard	2
					Indian ricegrass	2
					Sandberg bluegrass	2

Data Source Information

Soil Survey Area: Jefferson County, Idaho
 Survey Area Data: Version 7, Jan 24, 2008

