

RANGELAND PRODUCTIVITY
Kingman County, Kansas

Use and Explanation of Rangeland, Grazed Forest Land, Native Pastureland Interpretations

Information in this subsection can be used to plan the use and management of soils for rangeland, grazed forest land, and native pasture. Different kinds of soils vary in their capacity to produce native grasses and other plants suitable for grazing. Information in this subsection provides groupings of similar soils and estimates of potential forage production, which can be used to determine livestock stocking rates.

Rangeland. Range is land on which the native vegetation (climax or natural potential plant community) is predominantly grasses, grasslike plants, forbs, and shrubs suitable for grazing and browsing. Range includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain shrub and forb communities. Rangeland receives no regular or frequent cultural treatment. The composition and production of the plant community are determined by soil, climate, topography, overstory canopy, and grazing management.

Grazed Forest Land. Includes land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significantly impairing other forest values.

Native Pasture. Includes land on which the native vegetation (climax or natural potential plant community) is forest but which is used and managed primarily for production of native plants for forage. Native pasture includes cut-over forest land and forest land cleared and now managed for native or naturalized forage plants.

Rangeland

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 based on the relationship between the soils and vegetation and water.

The Rangeland, Grazed Forest land, Native Pastureland Interpretations shows, for each soil that supports rangeland vegetation, the ecological site and the potential annual production of vegetation in favorable, normal, unfavorable years. An explanation of the column headings in this 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 a 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.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland 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, average, 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.

Range management requires a 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 chapter 4 of the National Range and Pasture Handbook, which is available in local offices of the Natural Resources Conservation Service. 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.

RANGELAND PRODUCTIVITY--Continued
Kingman County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
007AE:				
Albion-----	Sandy (pe20-25)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe20-25)	4,500	3,200	2,000
007FA:				
Farnum-----	Sandy (pe24-32)	5,000	3,500	2,500
077KA:				
Kanza-----	Subirrigated (pe24-32)	9,000	8,000	7,000
077KR:				
Kirkland-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
077NN:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
077PC:				
Pond Creek-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
077RC:				
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Vernon-----	Red Clay Prairie (pe24-32)	2,500	1,700	1,000
077SB:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
077SE:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
077SF:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
077SG:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
077SH:				
Shellabarger-----	Sandy (pe24-32)	7,000	5,000	3,500
151AO:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
151CN:				
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
151CO:				
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
151KP:				
Kanza-----	---	---	---	---
Plevna-----	Subirrigated (pe21-28)	9,000	8,000	7,000
151ND:				
Naron-----	Sandy (pe21-28)	4,500	3,000	2,000
151NF:				
Naron-----	Sandy (pe21-28)	4,500	3,000	2,000
151OC:				
Ost-----	Loamy Lowland (pe21-28)	5,500	4,000	2,500
151OS:				
Ost-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
151PN:				
Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
151SE:				
Shellabarger-----	Sandy (pe21-28)	4,500	3,200	2,000
151ZS:				
Drummond-----	Saline Lowland (pe21-28)	7,000	5,800	5,000
Zenda-----	Subirrigated (pe21-28)	9,000	8,000	7,000
173MA:				
Milan-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
173PB:				
Plevna-----	Subirrigated (pe24-32)	9,000	8,000	7,000
173RA:				
Renfrow-----	Red Clay Prairie (pe24-32)	4,000	2,800	2,000
173RC:				
Renfrow-----	Red Clay Prairie (pe24-32)	4,000	2,800	2,000
Wellsford-----	Red Clay Prairie (pe24-32)	3,000	2,000	1,500
173TA:				
Tabler-----	Clay Upland (pe25-34)	3,800	2,600	1,800
191RA:				
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Grainola-----	Clay Upland (pe24-32)	4,000	2,800	2,000
990:				
Abbyville-----	Saline Subirrigated (pe21-28)	7,000	6,000	5,000
991:				
Abbyville, rarely flooded-----	Saline Subirrigated (pe21-28)	7,000	6,000	5,000
Kisiwa, occasionally flooded-----	Saline Subirrigated (pe21-28)	7,000	6,000	5,000
1004:				
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
1005:				
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
1006:				
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
1011:				
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
1017:				
Shellabarger, Eroded-----	Sandy (pe21-28)	4,000	3,000	2,000
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
1061:				
Arents, Earthen Dam-----	---	---	---	---

RANGELAND PRODUCTIVITY--Continued
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(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
1359:				
Clark-----	Limy Upland (pe21-28)	4,500	3,500	3,000
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
1555:				
Dillhut-----	Sands (pe21-28)	4,500	3,500	2,500
Plev-----	Subirrigated (pe21-28)	9,500	8,500	7,500
1728:				
Farnum-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
Funmar-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
2205:				
Jamash-----	Shallow Prairie (pe24-32)	3,200	2,400	1,700
Piedmont-----	Clay Upland (pe24-32)	5,000	3,500	2,500
2381:				
Kanza-----	Subirrigated (pe21-28)	9,500	8,500	7,500
Ninnescah-----	Subirrigated (pe21-28)	9,500	8,500	7,500
2390:				
Kaskan-----	Loamy Lowland (pe21-28)	7,000	5,500	4,500
2556:				
Langdon-----	Choppy Sands (pe21-28)	3,000	2,150	1,550
2812:				
Mahone-----	Loamy Lowland (pe21-28)	7,000	5,500	4,500
2948:				
Nalim-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
3051:				
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
3052:				
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Clark-----	Limy Upland (pe21-28)	4,500	3,500	3,000
3170:				
Penalosa-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
3171:				
Penalosa-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
3180:				
Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
3181:				
Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Turon-----	Sands (pe21-28)	4,500	3,500	2,500
3445:				
Shellabarger, Moderately Eroded---	Sandy (pe21-28)	4,000	3,000	2,000
3510:				
Saltcreek-----	Sandy (pe21-28)	4,000	3,000	2,000
Funmar-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
Farnum-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
3530:				
Shellabarger, Eroded-----	Sandy (pe21-28)	4,000	3,000	2,000
Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
3531:				
Shellabarger, Moderately Eroded---	Sandy (pe21-28)	4,000	3,000	2,000
Nalim-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
3532:				
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
3533:				
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
3534:				
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
3535:				
Shellabarger-----	Sandy (pe21-28)	4,000	3,000	2,000
Nalim-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
3926:				
Water-----	---	---	---	---
3966:				
Willowbrook-----	Subirrigated (pe21-28)	9,500	8,500	7,500
4005:				
Yaggy-----	Sandy Lowland (pe21-28)	6,000	4,750	3,500
Saxman-----	Sandy Lowland (pe21-28)	6,000	4,750	3,500
4110:				
Zellmont-----	Sandy (pe21-28)	4,000	3,000	2,000
Poxmash-----	Sandy (pe21-28)	4,000	3,000	2,000
Aa:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Ab:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Ac:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Ad:				
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
AED:				
AED:				
Arents, Earthen Dam-----	---	---	---	---
Ba:				
Blanket-----	Loamy Upland (pe24-32)	6,500	5,000	3,000
Bb:				
Blanket-----	Loamy Upland (pe24-32)	6,500	5,000	3,000
Bc:				
Blanket-----	Loamy Upland (pe24-32)	6,500	5,000	3,000
Ca:				

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		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
Canadian-----	Sandy Terrace (pe24-32)	8,500	6,100	4,500
Cb:				
Carwile-----	Sandy (pe24-32)	5,000	3,800	3,000
Cc:				
Case-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Cd:				
Case-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Ce:				
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Cf:				
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Da:				
Dillwyn-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Plevna-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Fa:				
Farnum-----	Sandy (pe24-32)	5,000	3,500	2,500
Fb:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fc:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fd:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fe:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ff:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Natrustolls-----	---	---	---	---
Ka:				
Kaski-----	Loamy Lowland (pe24-32)	7,000	6,000	4,500
Kb:				
Kingman-----	Subirrigated (pe24-32)	9,000	8,000	7,000
La:				
Lincoln-----	Sandy Lowland (pe24-32)	3,000	2,300	1,800
Ma:				
McLain-----	Loamy Terrace (pe24-32)	8,500	6,100	4,500
Na:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Nb:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Oa:				
Owens-----	Red Clay Prairie (pe24-32)	3,000	2,000	1,500
Pa:				
Pond Creek-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Pb:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Pc:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Carwile-----	Sandy (pe24-32)	5,000	3,800	3,000
Pd:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Tivoli-----	Sands (pe24-32)	2,000	1,400	1,000
Qa:				
Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Qb:				
Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Ra:				
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Rb:				
Ruella-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Rc:				
Ruella-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Rock Outcrop-----	---	---	---	---
Sa:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sb:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sc:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sd:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Ta:				
Tivoli-----	Choppy Sands (pe24-32)	2,000	1,400	1,000
W:				
Water-----	---	---	---	---
Wa:				
Waldeck-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Za:				
Zenda-----	Subirrigated (pe24-32)	9,000	8,000	7,000

