

RANGELAND PRODUCTIVITY  
Barber 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  
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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
033CP: Clairemont-----	Loamy Lowland (pe20-25)	3,400	2,600	1,800
033OA: Obaro-----	Loamy Upland (pe20-25)	2,400	1,800	1,200
033OB: Obaro-----	Loamy Upland (pe20-25)	2,400	1,800	1,200
Rock Outcrop-----	---	---	---	---
033QR: Quinlan-----	Shallow Prairie (pe20-25)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe20-25)	4,000	2,800	2,000
033QT: Quinlan-----	Shallow Prairie (pe20-25)	1,800	1,350	1,000
Woodward-----	Loamy Upland (pe20-25)	4,000	2,800	2,000
033YE: Yahola-----	Sandy Lowland (pe20-25)	7,000	4,900	3,500
077BP: Woodward-----	Loamy Upland (pe24-32)	4,000	2,800	2,000
Port-----	Loamy Lowland (pe24-32)	8,500	6,100	4,500
077FU: Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
077GE: Gerlane-----	Subirrigated (pe24-32)	9,000	8,000	7,000
077MC: Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
077MN: Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
077MO: Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
077QU: Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
077SE: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
077WE: Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe24-32)	4,000	2,800	2,000
095AC: Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
095DA: Dillwyn-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Plevna-----	Subirrigated (pe24-32)	9,000	8,000	7,000
095FA: Farnum-----	Sandy (pe24-32)	5,000	3,500	2,500
095PB: Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
095SB: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
095WA: Waldeck-----	Subirrigated (pe24-32)	9,000	8,000	7,000
097LN: Lincoln-----	Sandy Lowland (pe20-25)	3,000	2,300	1,800
097QW: Quinlan-----	Shallow Prairie (pe20-25)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe20-25)	4,000	2,800	2,000
097WA: Waldeck-----	Subirrigated (pe20-25)	9,000	8,000	7,000
151AB: Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
151AO: Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
151AS: Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
151BC: Blanket-----	Loamy Upland (pe21-28)	6,500	5,000	3,000
151CA: Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
151CK: Case-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
151CM: Clark-----	Limy Upland (pe21-28)	5,000	4,000	3,000
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
151FA: Farnum-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
151KP: Kanza-----	---	---	---	---
Plevna-----	Subirrigated (pe21-28)	9,000	8,000	7,000
151OS: Ost-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
151PM: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500

RANGELAND PRODUCTIVITY--Continued  
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Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
151PN: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
151PO: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
151SA: Albion-----	Sandy (pe21-28)	4,000	3,000	2,000
Kaski-----	Loamy Lowland (pe21-28)	7,000	6,000	4,500
151SE: Shellabarger-----	Sandy (pe21-28)	4,500	3,200	2,000
1439: Crisfield-----	Sandy Terrace (pe24-32)	6,000	5,000	3,500
Ad: Albion-----	Sandy (pe20-25)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe20-25)	4,500	3,200	2,000
Ae: Albion-----	Sandy (pe20-25)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe20-25)	4,500	3,200	2,000
AED: Arents, Earthen Dam-----	---	---	---	---
AN: Albion-----	Sandy (pe20-25)	4,000	3,000	2,000
Shellabarger-----	Sandy (pe20-25)	4,500	3,200	2,000
As: Clairemont-----	Saline Lowland (pe20-25)	3,500	2,600	1,800
At: Attica-----	Sandy (pe24-32)	4,500	3,000	2,000
Ba: Blanket-----	Loamy Upland (pe20-25)	6,500	5,000	3,000
Bb: Blanket-----	Loamy Upland (pe20-25)	6,500	5,000	3,000
Bc: Blanket-----	Loamy Upland (pe20-25)	6,500	5,000	3,000
Bf: Quinlan-----	Shallow Prairie (pe20-25)	1,800	1,350	1,000
Clairemont-----	Loamy Lowland (pe20-25)	3,400	2,600	1,800
Ca: Canadian-----	Sandy Terrace (pe24-32)	8,500	6,100	4,500
Cc: Case-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Cd: Clairemont-----	Loamy Lowland (pe20-25)	3,400	2,600	1,800
Cf: Clairemont-----	Loamy Lowland (pe20-25)	3,400	2,600	1,800
Ck: Clark-----	Limy Upland (pe24-32)	5,000	4,000	3,000
Fa: Farnum-----	Sandy (pe24-32)	5,000	3,500	2,500
Fm: Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fr: Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fu: Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ga: Grant-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
Gb: Grant-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
Gc: Grant-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
GRP: Gravel Pits-----	---	---	---	---
INT: Aquolls-----	---	---	---	---
Ka: Kanza-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Kf: Kingfisher-----	Loamy Upland (pe20-25)	5,000	3,500	2,500
Kv: Kingfisher-----	Loamy Upland (pe20-25)	5,000	3,500	2,500
Vernon-----	Red Clay Prairie (pe20-25)	4,000	2,800	2,000
Kz: Kingfisher-----	Loamy Upland (pe20-25)	5,000	3,500	2,500
Vernon-----	Red Clay Prairie (pe20-25)	4,000	2,800	2,000
Ln: Lincoln-----	Sandy Lowland (pe20-25)	3,000	2,300	1,800
LNN: Lincoln-----	Sandy Lowland (pe20-25)	3,000	2,300	1,800
Ma: Mangum-----	Clay Lowland (pe20-25)	3,000	2,250	1,500
Mg: Mangum-----	Clay Lowland (pe20-25)	3,000	2,250	1,500
Drummond-----	Saline Lowland (pe20-25)	7,000	5,800	5,000
Mn:				

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		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Na:				
Naron-----	Sandy (pe24-32)	4,500	3,000	2,000
Nb:				
Naron-----	Sandy (pe24-32)	4,500	3,000	2,000
Os:				
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ot:				
Ost-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Pa:				
Pond Creek-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Pd:				
Pond Creek-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Ph:				
Dale-----	Loamy Terrace (pe24-32)	8,500	6,100	4,500
Pk:				
Buttermilk-----	Saline Lowland (pe24-32)	4,000	3,000	2,000
Ps:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Pt:				
Pratt-----	Sands (pe20-25)	4,500	3,500	2,500
Tivoli-----	Sands (pe20-25)	2,000	1,400	1,000
Qn:				
Quinlan-----	Shallow Prairie (pe20-25)	2,500	1,800	1,300
Qw:				
Quinlan-----	Shallow Prairie (pe20-25)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe20-25)	4,000	2,800	2,000
Rb:				
Knoco-----	Red Shale (pe20-25)	1,400	1,000	600
Rock Outcrop-----	---	---	---	---
Sb:				
Shellabarger-----	Sandy (pe20-25)	4,500	3,200	2,000
SBB:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sc:				
Shellabarger-----	Sandy (pe20-25)	4,500	3,200	2,000
Tv:				
Tivoli-----	Choppy Sands (pe20-25)	2,000	1,400	1,000
Vn:				
Vernon-----	Red Clay Prairie (pe20-25)	4,000	2,800	2,000
Vr:				
Vernon-----	Red Clay Prairie (pe20-25)	4,000	2,800	2,000
Vs:				
Knoco-----	Red Shale (pe20-25)	1,400	1,000	600
Vernon-----	Red Clay Prairie (pe20-25)	4,000	2,800	2,000
W:				
Water-----	---	---	---	---
Wa:				
Waldeck-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Wo:				
Woodward-----	Shallow Prairie (pe20-25)	4,000	2,800	2,000
Quinlan-----	Loamy Upland (pe20-25)	2,500	1,800	1,300
Ws:				
Woodward-----	Shallow Prairie (pe20-25)	4,000	2,800	2,000
Quinlan-----	Loamy Upland (pe20-25)	2,500	1,800	1,300
Ya:				
Yahola-----	Subirrigated (pe20-25)	7,000	4,900	3,500
Ze:				
Zenda-----	Subirrigated (pe20-25)	9,000	8,000	7,000

