

RANGELAND PRODUCTIVITY
Harper 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
Harper 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
007AS:				
Clairemont-----	Saline Lowland (pe20-25)	3,500	2,600	1,800
007FU:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
007KA:				
Kanza-----	Subirrigated (pe24-32)	9,000	8,000	7,000
095AD:				
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
095LA:				
Lincoln-----	Sandy Lowland (pe24-32)	3,000	2,300	1,800
095NB:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
095SA:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
095SC:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
095SD:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
095ZA:				
Zenda-----	Subirrigated (pe24-32)	9,000	8,000	7,000
191EA:				
Elandco-----	Loamy Lowland (pe24-32)	6,500	5,000	3,500
191EC:				
Elandco-----	Loamy Lowland (pe24-32)	6,500	5,000	3,500
191LS:				
Lincoln-----	Sandy Lowland (pe24-32)	3,000	2,300	1,800
191OP:				
Wellsford-----	Red Clay Prairie (pe24-32)	3,000	2,000	1,500
Elandco-----	Loamy Lowland (pe24-32)	6,500	5,000	3,500
191PD:				
Pond Creek-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
191RA:				
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Grainola-----	Clay Upland (pe24-32)	4,000	2,800	2,000
191TA:				
Tabler-----	Clay Upland (pe24-32)	3,800	2,600	1,800
191US:				
Ustifluvents-----	---	---	---	---
1439:				
Crisfield-----	Sandy Terrace (pe24-32)	6,000	5,000	3,500
An:				
Kaski-----	Loamy Lowland (pe24-32)	7,000	6,000	4,500
At:				
Attica-----	Sandy (pe24-32)	4,500	3,000	2,000
Be:				
Bethany-----	Loamy Upland (pe24-32)	5,000	3,500	2,500
Bh:				
Bethany-----	Loamy Upland (pe24-32)	5,000	3,500	2,500
Bm:				
Lincoln-----	Sands (pe24-32)	3,000	2,300	1,800
Bo:				
Gerlane-----	Sands (pe24-32)	3,800	3,000	2,200
Bp:				
Woodward-----	Loamy Upland (pe24-32)	4,000	2,800	2,000
Port-----	Loamy Lowland (pe24-32)	8,500	6,100	4,500
Br:				
Broken Alluvial Land-----	---	---	---	---
Ca:				
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
Ce:				
Corbin-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Cf:				
Corbin-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fa:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fm:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fn:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Fu:				
Farnum-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ge:				
Gerlane-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Gn:				
Grant-----	Loamy Upland (pe24-32)	5,500	3,700	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
Gr:				
Grant-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
GRP:				
Gravel Pits-----	---	---	---	---
Gs:				
Grant-----	Loamy Upland (pe24-32)	5,500	3,700	2,500
INT:				
Aquolls-----	---	---	---	---
Ka:				
Kanza-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Kk:				
Kaski-----	Loamy Lowland (pe24-32)	7,000	6,000	4,500
Km:				
Kirkland-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Kr:				
Kirkland-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Kw:				
Kirkland-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Mc:				
Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Mn:				
Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Mo:				
Minco-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Na:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ne:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Nh:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Nn:				
Nashville-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
No:				
Norge-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Pc:				
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
Pe:				
Pond Creek-----	Loamy Upland (pe24-32)	5,500	3,850	2,750
Pg:				
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:				
Port-----	Saline Lowland (pe24-32)	4,000	3,000	2,000
Pm:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Pn:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Po:				
Pratt-----	Sands (pe24-32)	4,500	3,500	2,500
Carwile-----	Sandy (pe24-32)	5,000	3,800	3,000
Pt:				
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
Qn:				
Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Qu:				
Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Rc:				
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
Vernon-----	Red Clay Prairie (pe24-32)	2,500	1,700	1,000
Re:				
Ruella-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Rh:				
Ruella-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Ru:				
Ruella-----	Loamy Upland (pe24-32)	5,500	4,000	2,500
Sa:				
Lesho-----	Saline Subirrigated (pe24-32)	6,500	5,500	4,000
Sb:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Se:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sf:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sg:				
Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sh:				
Zellmont-----	Sandy (pe21-28)	4,000	3,000	2,000

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		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
SHH: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Sk: Zellmont-----	Sandy (pe21-28)	4,000	3,000	2,000
Sm: Zellmont, eroded-----	Sandy (pe21-28)	4,000	3,000	2,000
Sn: Shellabarger-----	Sands (pe24-32)	4,500	3,200	2,000
So: Shellabarger-----	Sandy (pe24-32)	4,500	3,200	2,000
Albion-----	Sandy (pe24-32)	4,000	3,000	2,000
Sp: Drummond-----	Saline Lowland (pe24-32)	7,000	5,800	5,000
Ta: Tabler-----	Clay Upland (pe24-32)	3,800	2,600	1,800
Th: Tivoli-----	Choppy Sands (pe24-32)	2,000	1,400	1,000
Vr: Vernon-----	Red Clay Prairie (pe24-32)	2,500	1,700	1,000
Renfrow-----	Clay Upland (pe24-32)	4,000	2,800	2,000
W: Water-----	---	---	---	---
Wa: Kingman-----	Subirrigated (pe24-32)	9,000	8,000	7,000
Wd: Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe24-32)	4,000	2,800	2,000
We: Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe24-32)	4,000	2,800	2,000
Ww: Quinlan-----	Shallow Prairie (pe24-32)	2,500	1,800	1,300
Woodward-----	Loamy Upland (pe24-32)	4,000	2,800	2,000
Za: Canadian-----	Sandy Lowland (pe24-32)	8,500	6,100	4,500
Zf: Zenda-----	Subirrigated (pe24-32)	9,000	8,000	7,000

