

RANGELAND PRODUCTIVITY
Riley 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
Riley 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
027CS: Crete-----	Clay Upland (pe25-34)	4,500	4,100	3,000
027CX: Crete-----	Clay Upland (pe25-34)	4,500	4,100	3,000
027HN: Hobbs-----	Loamy Lowland (pe25-34)	4,700	4,200	4,000
027KS: Kipson-----	Limy Upland (pe25-34)	4,500	3,500	2,000
027KS: Sogn-----	Shallow Limy (pe25-34)	3,500	2,500	1,500
061BE: Benfield-----	Loamy Upland (pe30-36)	6,000	4,500	3,000
061BE: Florence-----	Loamy Upland (pe30-36)	5,500	4,500	3,500
061CF: Clime-----	Limy Upland (pe30-36)	5,000	3,500	2,500
061CF: Sogn-----	Shallow Limy (pe30-36)	3,500	2,500	1,500
061CR: Crete-----	Clay Upland (pe25-34)	4,500	4,100	3,700
061CS: Crete-----	Clay Upland (pe25-34)	4,500	4,100	3,700
061EU: Eudora-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
061HE: Haynie-----	Loamy Lowland (pe30-36)	5,300	4,900	4,500
061KA: Kahola-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
061KB: Kahola-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
061RE: Reading-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
061TO: Tully-----	Loamy Upland (pe30-36)	6,000	5,000	3,500
117PA: Pawnee-----	Loamy Upland (pe30-37)	3,700	3,200	2,700
117PB: Pawnee-----	Loamy Upland (pe30-37)	3,700	3,200	2,700
149HS: Haynie-----	Loamy Lowland (pe30-37)	5,300	4,900	4,500
149PS: Sarpy-----	Sandy Lowland (pe30-37)	3,800	3,500	3,000
149PS: Paxico-----	---	---	---	---
149SF: Sarpy-----	Sandy Lowland (pe30-37)	3,800	3,500	3,000
197CM: Clime-----	Limy Upland (pe30-36)	5,000	3,500	2,500
197FL: Florence-----	Loamy Upland (pe30-36)	5,500	4,500	3,500
197FL: Labette-----	Loamy Upland (pe30-36)	5,500	4,500	3,500
197IB: Irwin-----	Clay Upland (pe30-36)	5,000	3,500	2,000
197ID: Irwin-----	Clay Upland (pe30-36)	5,000	3,500	2,000
197IV: Ivan-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
197IX: Ivan-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
197PN: Pawnee-----	Clay Upland (pe30-37)	3,700	3,200	2,700
197WE: Wamego-----	Clay Upland (pe30-37)	6,500	4,500	3,500
201CS: Crete-----	Clay Upland (pe26-30)	4,500	4,100	3,700
201CX: Crete, eroded-----	Clay Upland (pe26-30)	4,500	4,100	3,700
201KS: Kipson-----	Limy Upland (pe26-30)	4,500	3,500	2,000
201KS: Sogn-----	Shallow Limy (pe26-30)	3,500	2,500	1,500
201LC: Lancaster-----	Loamy Upland (pe26-30)	5,000	3,500	2,000
Ad: Ivan-----	Loamy Lowland (pe25-34)	10,000	8,000	6,000
AED: Arents, Earthen Dam-----	---	---	---	---
BE: Benfield-----	Loamy Upland (pe25-34)	5,500	4,000	3,000
Bf: Benfield-----	Loamy Upland (pe30-36)	6,000	4,500	3,000
Bf: Florence-----	Loamy Upland (pe30-36)	5,500	4,500	3,500
Bk: Wymore-----	Clay Upland (pe25-34)	4,100	3,600	3,200
Bk: Kennebec-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
BOP: Borrow Pits-----	---	---	---	---
Ca: Carr-----	Sandy Lowland (pe30-36)	6,500	5,500	4,500
Ca: Sarpy-----	Sands (pe30-36)	3,800	3,500	3,000

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
Ch:				
Chase-----	Loamy Lowland (pe30-36)	10,000	8,500	6,000
Cs:				
Clime-----	Limy Upland (pe30-36)	5,000	3,500	2,500
Sogn-----	Shallow Limy (pe30-36)	3,500	2,500	1,500
CT:				
Crete-----	Clay Upland (pe25-34)	4,500	4,100	3,700
Dr:				
Dwight-----	Clay Pan (pe25-34)	4,000	3,000	2,000
Irwin-----	Clay Upland (pe25-34)	5,000	3,500	2,000
Dw:				
Dwight-----	Clay Pan (pe25-34)	4,000	3,000	2,000
Irwin-----	Clay Upland (pe25-34)	5,000	3,500	2,000
Em:				
Elmont-----	Loamy Upland (pe30-36)	7,000	5,500	4,000
En:				
Elmont-----	Loamy Upland (pe30-36)	7,000	5,500	4,000
Clime-----	Limy Upland (pe30-36)	5,000	3,500	2,500
Eu:				
Eudora-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Ga:				
Geary-----	Loamy Upland (pe30-36)	6,000	4,000	3,000
Ge:				
Geary-----	Loamy Upland (pe30-36)	6,000	4,000	3,000
Ha:				
Haynie-----	Loamy Lowland (pe30-36)	5,300	4,900	4,500
HO:				
Hobbs-----	Loamy Lowland (pe25-34)	4,700	4,200	4,000
Ic:				
Irwin-----	Clay Upland (pe25-34)	5,000	3,500	2,000
Id:				
Irwin, eroded-----	Clay Upland (pe25-34)	5,000	3,500	2,000
Ie:				
Ivan-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Iv:				
Ivan-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Kennebec-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Ka:				
Kahola-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Ke:				
Kenesaw-----	Loamy Upland (pe30-36)	4,500	4,200	3,800
Kf:				
Kenesaw-----	Loamy Upland (pe30-36)	4,500	4,200	3,800
KN:				
Kennebec-----	Loamy Lowland (pe35-42)	10,000	8,000	6,000
M-W:				
Miscellaneous Water-----	---	---	---	---
Ma:				
Mayberry-----	Clay Upland (pe30-37)	6,500	4,500	3,500
Mb:				
Mayberry-----	Clay Upland (pe30-36)	3,700	3,200	2,700
Mu:				
Muir-----	Loamy Terrace (pe25-34)	7,500	5,500	4,000
QUA:				
Quarries-----	---	---	---	---
Rd:				
Reading-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Re:				
Reading-----	Loamy Lowland (pe30-36)	10,000	8,000	6,000
Sa:				
Sarpy-----	Sands (pe30-36)	3,800	3,500	3,000
Sm:				
Smolan-----	Loamy Upland (pe30-36)	5,500	4,000	3,000
Sn:				
Smolan-----	Loamy Upland (pe30-36)	5,500	4,000	3,000
So:				
Smolan, eroded-----	Clay Upland (pe30-36)	5,500	4,000	3,000
St:				
Clime-----	Limy Upland (pe30-36)	5,000	3,500	2,500
Su:				
Sutphen-----	Clay Lowland (pe26-30)	7,500	5,500	3,500
Ts:				
Tully-----	Loamy Upland (pe30-36)	6,000	5,000	3,500
Tt:				
Tully, eroded-----	Clay Upland (pe25-34)	6,000	5,000	3,500
Tu:				
Tully-----	Loamy Upland (pe25-34)	6,000	5,000	3,500
Tv:				
Tully, eroded-----	Clay Upland (pe25-34)	6,000	5,000	3,500
W:				
Water-----	---	---	---	---
Wm:				
Wymore-----	Loamy Upland (pe25-34)	4,100	3,600	3,200
Wn:				
Wymore-----	Loamy Upland (pe25-34)	4,100	3,600	3,200

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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
Wo: Wymore, eroded-----	Clay Upland (pe25-34)	4,100	3,600	3,200
Wr: Wymore-----	Loamy Upland (pe25-34)	4,100	3,600	3,200
Ws: Wymore, eroded-----	Clay Upland (pe25-34)	4,100	3,600	3,200

