

ERODED RED CLAY
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 78
Central Rolling Red Plains



2. Climate:

See climate for LRA 78
(Filed in the front of Section II-E)

3. Topography:

This site occurs on predominantly gentle slopes but ranges from nearly level to strongly sloping. This site is often dissected by a network of steep nearly vertical gullies.

4. Soils and Hydrological Characteristics:

- a. The soils of this site consist of shallow, clayey, calcareous soils less than 12 inches deep over Permian shale parent material. Water intake is very slow and runoff is high. The available water capacity is very low.
- b. The soil that characterizes this site is the shale outcrop portion of the "Vernon-Shale outcrop complex" mapping unit. The suggested current soil name would be Knoco.)
- c. These soils are highly susceptible to wind and water erosion. Trailing and gully erosion is a hazard.

5. Climax Vegetation:

- a. The natural potential vegetation on this site is considerably variable because of the shallow to very shallow soils that have rapid runoff and high shrink-swell shale subsoils in association with geologically eroding areas and deeper "Red Clay Prairie" soils. The typical vegetation is a mixed grass prairie dominated by mid and short grasses. Sideoats grama is the dominant species on this site making up 50 percent of the potential. On the areas with better soil development big bluestem, little bluestem, and switchgrass will be found in significant amounts. Numerous other short and midgrasses and forbs make up the remaining potential vegetation on this site.

In its development, the vegetation on this site was greatly influenced by grazing and occasional wildfires. The grazing was predominantly by large transient herds of bison and lesser numbers of elk and antelope.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

<u>Grasses and Grasslike - 80 Percent</u>		<u>Forbs - 20 Percent</u>	<u>Shrubs and Cacti - T</u>	
60	5 big bluestem	20 big crazyweed blacksamson echinacea broom snakeweed catclaw sensitivebriar dotted gayfeather hairy goldaster Louisiana sagewort Missouri milkvetch nailworts nineanther dalea prostrate milkpea purple prairieclover raceme milkvetch scarlet globemallow serrateleaf eveningprimrose tiny bluets western ragweed white prairieclover	T aromatic sumac leadplant pricklypear	
	10 little bluestem			
	50 sideoats grama			
	5 switchgrass			
20	5 alkali sacaton			
	5 blue grama			
	5 buffalograss			
	5 hairy grama			
	5 sand dropseed			
	5 silver bluestem			
	5 tall dropseed			
	5 vinemesquite			
	5 western wheatgrass			
T	hairy tridens			
	purple threeawn			
	red threeawn			
	scribner panicum			
	wright threeawn			

c. Invaders common to this site are annual broomweed, foxtail barley, Japanese brome, little barley, silky sophora, sixweeks fescue, and woolly loco.

6. Management Implications:

Overgrazing with cattle on this site rapidly reduces the occurrence of big bluestem, little bluestem, catclaw sensitivebriar, and switchgrass. With initial overgrazing, sideoats grama soon dominates the site but will give way to grass species such as blue grama, buffalograss, hairy grama, and silver bluestem.

Continued overuse on this site can eliminate most of the preferred species and leave only low successional perennials and annuals. These low perennials and annuals may produce large amounts of forage but are available only for short periods. They are not considered a dependable forage supply.

Drought planning is essential to maintain productivity on this site. Up to 400 percent production variability may be expected from favorable to unfavorable years. Grazing management that provides for proper use and periodic rests during the growing season helps to maintain the site. Preferred species must be allowed to maintain adequate carbohydrate reserves to sustain themselves on this droughty site.

7. Wildlife Considerations:

The droughty nature of this site tends to discourage use by significant numbers of wildlife. The site is mostly used by quail, deer, and jackrabbits for occasional feeding and loafing areas.

Songbirds, mice, lizards, and other smaller species make limited use of the site. The lack of cover on the site makes many of these species very susceptible to predation by coyotes, hawks, and owls.

8. Other Uses and Values:

The erosive nature of this site and associated geological eroding areas limits the use of this site to rangeland and limited wildlife use.

Some areas have had limited housing and commercial development. However, special precautions are usually needed to insure stable foundations, and additional topsoil is often needed to provide for adequate landscaping.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions influence annual herbage production.

<u>Growing Conditions</u>	<u>Total Air Dry Herbage</u>	
	<u>Pounds/Acre</u>	<u>Kilograms/Hectare</u>
Favorable	700-900	780-1010
Normal	500-700	560-780
Unfavorable	300-500	340-560

10. Guide to Initial Stocking Rates

<u>Range Condition</u>	<u>Percent Climax Vegetation</u>	<u>Acres/AU Yearlong</u>	<u>AU Months Per Acre</u>	<u>Hectares/AU Yearlong</u>	<u>AUM's per Hectare</u>
Excellent	76-100	40-50	.25	18-22	.6
Good	51-75	50-70	.20	22-28	.5
Fair	26-50	70-100	.15	28-40	.37
Poor	0-25	100+	.10	40+	.25

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

This site is not normally used for hay production.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species		
	Cattle	Deer	Quail
alkali sacaton	M	F	N
big bluestem	H	C,F	C,N
blue grama	H	F	---
buffalograss	H	F	---
catclaw sensitivebriar	H	F	F
dotted gayfeather	M	---	---
hairy grama	M	---	---
Japanese brome	M <u>1/</u>	F <u>1/</u>	F
Louisiana sagewort	L	---	F
purple prairieclover	M	F	C,F
sand dropseed	M	---	C
scarlet globemallow	L	---	F
silver bluestem	L	---	C,N
switchgrass	H <u>2/</u>	C,F	C,F,N
western ragweed	M	F	F
western wheatgrass	H	F	C

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season

Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.