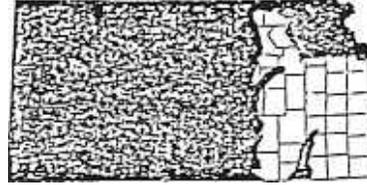


CLAYPAN
KANSAS RANGE SITE DESCRIPTION

Location of Site:

Land Resource Areas 76 and parts of 112
Bluestem Hills (Flint Hills) and Cherokee
Prairie



2. Climate:

See climate for LRA's 76 and 112
(Filed in the front of Section II-E)

3. Topography:

Nearly level to gently sloping uplands with slopes rarely exceeding 3 percent. Scattered depressions frequently called buffalowallows are present in many areas.

4. Soils and Hydrological Characteristics:

- a. These soils are deep, moderately well drained, nearly level or gently sloping uplands. The silty surface soil ranges from 2 to 7 inches in depth over dense subsoils that have very slow permeability. Average depth of the surface soil is about 5 inches. The subsoil ranges from 45 to 60 percent clay and has from 10 to 20 percent exchangeable sodium.
- b. The soil that characterizes this site is Dwight.
- c. Claypan soils take in water very slowly so large amounts of rainfall are lost to runoff. Dense clay subsoils are restrictive to vertical root development. Water holding capacity is high but the slow release of water by the clay subsoil to vegetation causes this site to be droughty. The amount of exchangeable sodium present in the subsoil also limits the plants ability to extract water from these soils.

5. Climax Vegetation:

- a. The natural potential vegetation of this site is a mixed prairie. A mixture of big bluestem, little bluestem, switchgrass, sideoats grama, western wheatgrass, indiagrass, and tall dropseed accounts for approximately 80 percent of the total production. In its development, the vegetation on this site was influenced by grazing, fire, and drought. The grazing was predominantly by large transient herds of bison, elk, and deer.

b. Guidelines For Determining Range Condition:

(Percentage of total production by weight)

<u>Grasses and Grasslike - 90 Percent</u>			<u>Forbs - 10 Percent</u>	<u>Woody - 0 Percent</u>
35	20	big bluestem	dotted gayfeather	none
	20	little bluestem	heath aster	
	10	indiangrass	Missouri goldenrod	
45	15	sideoats grama	slimflower scurfpea	
	15	switchgrass	stiff goldenrod	
	15	western wheatgrass	western ragweed	
	10	tall dropseed	upright prairieconeflower	
10		blue grama	Louisiana sagewort	
		buffalograss	pussytoes	
		rosette panicums	wooly verbena	
		purple lovegrass	yarrow	
		rushes		
		sedges		

prairie cordgrass

c. Common invaders to the site include annual broomweed, Japanese brome, Kentucky bluegrass, prairie threawn, and windmillgrass.

6. Management Implications:

This site generally appears on nearly level to gently sloping upland divides. They are usually above and in close proximity to limestone outcrops. This contributes to the inability of these soils to leach sodium from their profile. The topographic position attracts grazing animals, seeking a breeze, during the hot summer months.

Overgrazing with cattle results in a quick reduction of big bluestem, little bluestem, indiangrass, and switchgrass. Tall dropseed, western wheatgrass, and buffalograss are the primary increasers. Annual late season grazing after June 15 results in switchgrass also becoming an increaser. Severe overuse results in Japanese brome, prairie threawn, broomweed, windmillgrass, and buffalograss becoming the dominant species.

Overgrazing with sheep results in the elimination of the forbs followed by the tall grasses. The major species remaining with close grazing by sheep are prairie threawn and snow-on-the-mountain.

Because of its accessibility and the influence of sodium on the vegetation, this site is frequently found in an overgrazed condition. Deferment and judicious grazing management can restore this site in many situations. However, vegetative response is quite slow when compared to most other range sites in the area. Grazing management that provides a systematic rest is one of the best tools that can be used to restore the vegetation on this site.

7. Wildlife Considerations:

This site is the preferred booming ground for the greater prairie chicken. The shorter vegetation on this site, due to livestock grazing preference and soil conditions, provides an excellent location for the prairie chicken to exhibit his courting and mating habits.

Grazing management that provides for resting of tall growing grasses within 0.25 mile of known booming grounds is beneficial to prairie chicken populations. The tall grasses close to the booming grounds are necessary for suitable nesting habitat.

Because of the excess disturbance this site receives by livestock, it is seldom the preferred site of most wildlife. However, songbirds, deer, small mammals, and predators frequent the site, primarily to take advantage of temporary lush feeding conditions resulting from disturbed areas.

8. Other Uses and Values

The site is not normally recognized for its beauty. It is, however a good vantage point from which the tall grass prairie can be readily observed.

In early summer when slimflower scurfpea, frequently called wild alfalfa, is in full bloom, a blue purple mass of color and a delicate odor enhances the appeal of the site. Again in the fall a rose purple outburst will frequently occur when dotted gayfeather makes its appearance.

The depressions, called buffalowallows, are a reminder of when this site was used by bison for dusting and loafing.

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	3000-4000	3350- 500
Normal	2000-3000	2250- 350
Unfavorable	1500-2000	1700- 250

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	12-18	.8	5-7	2.0
Good	51-75	18-25	.6	7-10	1.5
Fair	26-50	25-35	.4	10-14	1.6
Poor	0-25	35+	.3	14+	.75

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.

When maintained in good to excellent condition, an average hay yield of .75 to 1.0 ton per acre can be expected from this site.

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	Sheep	Deer	P. Chicken
big bluestem	H	M	C	C,N
blue grama	H	H	F	---
buffalograss	M	M	F	---
dotted gayfeather	M	M	F	---
heath aster	M	H	F	---
indiangrass	H	M	C	C,N
Japanese brome	M <u>1/</u>	M <u>1/</u>	F	F
little bluestem	H	M	C	N
Louisiana sagewort	L	M	---	F
pussytoes	L	H	F	---
rosette panicums	M	M	---	F
sedges	M	M	F	---
sideoats grama	H	M	---	C,N
slimflower scurfpea	L	L	---	---
switchgrass	H <u>2/</u>	M	C	F,C
tall dropseed	M	L	C	C,N
western ragweed	M	M	F	F
western wheatgrass	M	M	F	

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.