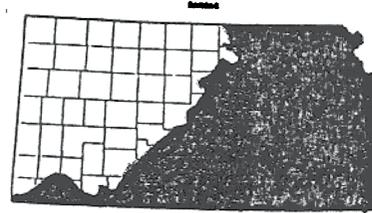


CHALK FLATS
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Areas 72 and 73
Central High Table Land and
Rolling Plains and Breaks



2. Climate:

See climate for LRA's 72 and 73
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level to gently sloping terraces below outcrops of limestone or chalk.

4. Soils and Hydrological Characteristics:

- a. This site consists of moderately deep to deep, strongly calcareous soils, with silty or loamy surface layers and subsoils over soft chalky bedrock. Water intake rates are moderate to rapid and the available water capacity is high.
- b. The major soils that characterize this site are Manvel and Minnequa.
- c. Wind erosion is a hazard on this site when overgrazed or disturbed. Ponds are not usually recommended on these soils due to the high potential of selenium poisoning from the runoff water.

5. Climax Vegetation:

- a. The natural potential vegetation of this site is dominated by mid and short grasses. Little bluestem and sideoats grama make up about 50 percent of the total vegetation in this condition. Big bluestem, blue grama, buffalograss, and dropseeds occur in smaller amounts. Woody plants such as fourwing saltbush and winterfat may be found in colonies on this site but generally make up only trace amounts of the overall 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 - 90 Percent</u>		<u>Forbs - 10 Percent</u>	<u>Shrubs and Cacti - T</u>	
60	15	big bluestem	T	
	35	little bluestem		
	20	sideoats grama		
	5	switchgrass		
25	15	blue grama	T	
	10	buffalograss		
	5	inland saltgrass		
	5	western wheatgrass		
5		perennial threeawns		
		sand dropseed		
		tall dropseed		
		5	broom snakeweed	
		5	desert princesplume	
		5	heath aster	
		5	Louisiana sagewort	
		5	western ragweed	
			bigtop dalea	
			Missouri milkvetch	
			narrowleaf poison milkvetch	
			woolly loco	

c. Invaders common to this site are Japanese brome, kochia, russianthistle, sixweeks fescue, sixweeks threeawn, tumblegrass, and windmillgrass.

6. Management Implications:

The majority of this site occurs in the valleys of Hackberry Creek in Gove County and the Smoky Hill River of Gove, Logan, Lane, and Trego Counties. This site is preferred for grazing and is more productive and accessible than much of the surrounding area.

When degeneration of the vegetation results from overgrazing by cattle, little bluestem, sideoats grama, and big bluestem are the primary decreaseers. Palatable forbs and woody plants, including heath aster, fourwing saltbush, and winterfat, also decrease in abundance.

Principal increaseers are buffalograss and blue grama

Continued heavy use of this plant community results in reduced production and plant vigor. Grazing management that includes proper stocking and deferred grazing helps to maintain this site in a healthy and vigorous condition.

Selenium poisoning to livestock can be a problem on this site. Princesplume is a key indicator of selenium content in the soil. Care should be exercised to not overgraze these areas, as livestock are more likely to graze the plants containing selenium as the competition for forage increases.

7 Wildlife Considerations:

This plant community is generally favorable for small rodents, blacktail jackrabbits, and coyotes. The chalk bluffs, breaks, and canyons associated with this site, provide important nesting areas for raptors and currently support the state's only nesting population of ferruginous hawks.

8. Other Uses and Values:

Vertical chalk "Pyramids" and bluffs are closely associated with this site, although the site itself is relatively flat. The "Pyramids" and "Castle Rock" associated with this site are historical landmarks and tourist attractions.

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	2,200-3,000	2,460-3,360
Normal	1,500-2,200	1,680-2,460
Unfavorable	1,000-1,500	1,120-1,680

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	16-18	.7	6-7	2
Good	51-75	18-22	.6	7-9	1.5
Fair	26-50	22-30	.5	9-12	1.2
Poor	0-25	30+	.35	12+	.8

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
big bluestem	H
bigtop dalea	L
blue grama	H
broom snakeweed	L
buffalograss	H
fourwing saltbush	H
heath aster	H
inland saltgrass	M
Japanese brome	M <u>1/</u>
kochia	M
Louisiana sagewort	L
perennial threeawns	L
princesplume	L
sideoats grama	H
sixweeks fescue	L
tumblegrass	L
western ragweed	M
western wheatgrass	H
woolly loco	L

1/ Has a high preference during lush growth periods.

Reference:

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