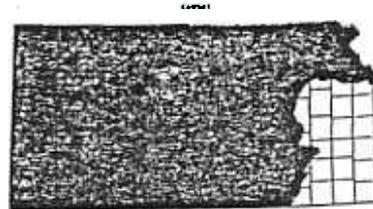


SHALLOW SAVANNAH
KANSAS RANGE SITE DESCRIPTION

1 Location of Site:

Land Resource Areas 84A and 112
(Cross Timbers and Cherokee Prairie)



2. Climate:

See climate for LRA's 84A and 112
(Filed in the front of Section II-E)

3. Topography:

These soils are gently sloping to steep ridgetops and hillsides. The slopes range from 2 to 45 percent with occasional slopes up to 60 percent.

4. Soils and Hydrological Characteristics:

- a. These shallow soils have formed from sandstone rock. They generally have sandy loam textures 10 to 20 inches deep over hard sandstone. The soils have a rapid permeability and low water-holding capacity. Ground water is stored within the sandstone and the crevices between the rock. Grazing and fire have historically limited the amount of leaf mulch accumulated on the soil surface.
- b. The major soils that characterize this site are Darnell and Hector.
- c. The major hazard on this site is its susceptibility to rill and small gully erosion, especially on the steeper slopes. The shallow depth of the soil, combined with erosion that may occur severely, limits its production potential.

5. Climax Vegetation:

- a. The natural potential vegetation of this site consists of tall grasses with an open canopy of post oak and blackjack oak. In this state big bluestem, little bluestem, and indiagrass produce about 50 percent of the annual vegetative production. Post oak and blackjack oak produce about 15 percent of the annual production.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

<u>Grasses and Grasslike - 70 Percent</u>		<u>Forbs - 10 Percent</u>	<u>Trees and Shrubs - 20 Percent</u>
50	25 big bluestem	catclaw sensitivebriar	blackjack oak pignut hickory post oak
	30 little bluestem	fringeleaf ruellia	
	10 indiagrass	grassleaf goldenrod	
5	switchgrass	10 hairy sunflower	20 blackberry dewberry
		hoary tickclover	
10	Canada wildrye	10 roundhead lespedeza	5 eastern redbud flameleaf sumac roughleaf dogwood smooth sumac
	green muhly	sessile tickclover	
	hairy grama	slender lespedeza	
	rock muhly	stiff sunflower	
	sideoats grama	tall goldenrod	
	Virginia wildrye	Virginia tephrosia	
5	purple lovegrass	beebalm	
	purpletop	blackeyesusan	
	rosette panicums	claspig coneflower	
	sedges	columbine ferns	
		kuhnia	
		T Missouri goldenrod	
		plains larkspur	
		pussytoes	
		spotted joepyeweed	
		western ragweed	
	yarrow		

c. Common invaders to the site include annual broomweed, blackberry broomsedge, buckbrush, common lespedeza, Korean lespedeza, lanceleaf ragweed, Japanese brome, prairie threeawn, puffsheath dropseed, splitbeard bluestem, and tall dropseed.

6. Management Implications:

Maintaining control of the woody vegetation and the steep slopes is the major consideration on this site. A combination of proper use, prescribed burning, and the use of brush management techniques is necessary to maintain this site near its potential. Special management efforts may be necessary to achieve uniform distribution of grazing, especially on steeper slopes.

Overgrazing with cattle will result in a release of the post oak and blackjack oak and the other associated woody species. In the early stages of regression, tall dropseed, broomsedge, purpletop, and annual grasses increase rapidly. Excessive grazing by cattle results in an overstory of oak and an understory of buckbrush, shade-tolerant annuals, rosette panicums, and sedges.

Sheep and goats have frequently been used to control woody species and shrubs on this site. Overgrazing with sheep results in the elimination of the forbs and a slow reduction of the major grass species. Continued overgrazing will result in a canopy of oak with an understory of annual grasses.

Overgrazing with goats can result in all woody species, except large trees, and forbs being eliminated from the site. With continued overgrazing, only prairie threeawn, Japanese brome and annual weeds survive.

Brush management on this site can best be accomplished with proper use in a planned grazing system along with prescribed burning to control the woody vegetation. Due to the fire tolerance of many of the woody species on this site, selecting the proper grazing animals and/or use of approved herbicides are necessary to keep this site near its potential.

In planning a complete brush management program on this site, consideration should be given to leaving trees and brush on the steeper parts of this site. Well planned strips or travel lanes can be very beneficial to wildlife while helping to protect these steep fragile soils.

On cattle operations, dormant season grazing may be used to give the primary grasses a competitive edge over the woody vegetation. A complete lack of grazing may also result in the site becoming dominated by woody vegetation.

7. Wildlife Considerations:

When maintained in good to excellent condition, this site provides habitat for numerous wildlife species. The combination of tall grasses, forbs, shrubs, and trees provides food, nesting, and loafing cover for deer, quail, numerous songbirds, and small mammals. It may also be suitable habitat for limited populations of wild turkey.

Maintaining adequate woody vegetation for travel lanes and escape cover is necessary for maximum wildlife populations. When practicing brush management, the maintenance of a well planned brush pattern can enhance most game animals and songbirds. This usually requires that 25 to 35 percent of the area be maintained in woody vegetation.

8. Other Uses and Values:

This site normally has more trees than other upland sites in this area. The abundance of trees makes the site attractive for homes, cabins, camping areas, etc. However, the steep slopes and shallow soils often force such developments to adjacent sites, utilizing this site for accent.

The contrasting vegetation with a wide selection of native flowering plants provides a setting for hunters, campers, backpackers, and other types of recreation. Selective brush management and good grazing management are essential to maintain the multiple use options provided by this site.

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	2200-3000	2500-3400
Normal	1500-2200	1700-2500
Unfavorable	1000-1500	1100-1700

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	18-24	.6	7.3-9.6	1.5
Good	51-75	24-35	.45	9.6-14.2	1.1
Fair	26-50	35-50	.3	14.2-20.2	.75
Poor	0-25	50+	.15	20.2+	.40

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	Sheep	Goats	Deer	Quail
big bluestem	H	M	M	C	C,N
blackjack oak	L	M	H	C,F	C
catclaw sensitivebriar	H	H	H	F	F
Canada wildrye	H	H	M	F	C,F
hairy sunflower	H	H	H	F	F
Japanese brome	M <u>1/</u>	H <u>1/</u>	M	F	F
indiangrass	H	M	M	C	C,N
little bluestem	H	M	M	C	C,N
pignut hickory	L	M	M	C	C
post oak	L	M	H	C,F	C
pussytoes	M	H	H	F	--
rosette panicums	M	M	M	--	F
roundhead lespedeza	H	H	H	F	F
sedges	M	M	M	F	--
sideoats grama	H	M	M	--	C
switchgrass	H <u>2/</u>	L	M	C	C,N
Virginia tephrosia	H	H	H	F	F
western ragweed	M	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.

SHALLOW SAVANNAH
KANSAS RANGE SITE DESCRIPTION

1 Location of Site:

Land Resource Areas 106 and 107
Nebraska and Kansas Loess-Drift Hills
and Iowa and Missouri Deep Loess Hills



2. Climate:

See climate for LRA's 106 and 107
(Filed in the front of Section II-E)

3. Topography:

These soils are gently sloping to steep ridgetops and hillsides.
The slopes range from 5 to 30 percent.

4. Soils and Hydrological Characteristics:

- a. These loamy soils are 10 to 20 inches deep over sandstone. Water permeability is moderately rapid, and water-holding capacity is low.
- b. The major soil that characterizes this site is Basehor.
- c. The major hazard on this site is its susceptibility to rill and small gully erosion, especially on the steeper slopes. The shallow depth of the soil, combined with erosion that may occur, severely limits its production potential.

5. Climax Vegetation:

- a. The natural potential vegetation on this site consists of tall grasses with an open canopy of oak and hickory. In this state big bluestem, little bluestem, and indiagrass produce about 50 percent of the annual vegetative production. Oak and hickory produce 15 to 20 percent of the annual production.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

<u>Grasses and Grasslike - 70 Percent</u>		<u>Forbs - 10 Percent</u>	<u>Trees and Shrubs - 20 Percent</u>		
50	25 big bluestem	catclaw sensitivebriar	bitternut hickory		
	30 little bluestem			fringeleaf ruellia	black oak
5	10 indiagrass	10 grassleaf goldenrod	20 pignut hickory		
	switchgrass			hairy sunflower	post oak
10	Canada wildrye	20 roundhead lespedeza	5 blackberry		
	green muhly			sessile tickclover	dewberry
	hairy grama			slender lespedeza	eastern redbud
	rock muhly			stiff sunflower	flameleaf sumac
	sideoats grama			tall goldenrod	roughleaf dogwood
	Virginia wildrye			Virginia tephrosia	smooth sumac
5	purple lovegrass	T beebalm			
	purpletop			blackeyesusan	
	rosette panicums	Missouri goldenrod			
	sedges			plains larkspur	
				pussytoes	
				spotted joepyeweed	
				western ragweed	
				yarrow	

c Common invaders to the site include annual broomweed, blackberry, broomsedge, buckbrush, common lespedeza, Korean lespedeza, lanceleaf ragweed, Japanese brome, prairie threeawn, puffsheath dropseed, splitbeard bluestem, and tall dropseed.

6. Management Implications:

Maintaining control of the woody vegetation and management of the steep slopes are the major considerations on this site. A combination of proper use, prescribed burning, and the use of brush management techniques is necessary to maintain this site near its potential. Special management efforts may be necessary to achieve uniform distribution of grazing, especially on steeper slopes. Slopes range from 5 to 30 percent.

Overgrazing with cattle will result in a release of the oak and hickory and the other associated woody species. In the early stages of regression, tall dropseed, purpletop, and annual grasses increase rapidly. Excessive grazing by cattle results in an overstory of oak-hickory and an understory of buckbrush, shade-tolerant annuals, rosette panicums, and sedges.

Sheep and goats have been used to control woody species, except large trees, on this site. Overgrazing with sheep results in the elimination of the forbs and a slow reduction of the major grass species. Continued overgrazing will result in a canopy of oak with an understory of annual grasses.

Brush management on this site can best be accomplished with proper use in a planned grazing system along with prescribed burning to control the woody vegetation. Due to the fire tolerance of many of the woody species on this site, selecting the proper grazing animals and/or use of approved herbicides is necessary to keep this site near its potential.

In planning a complete brush management program on this site, consideration should be given to leaving trees and brush on the steeper parts of this site. Well planned strips or travel lanes can be very beneficial to wildlife while helping to protect these steep fragile soils.

On cattle operations, dormant season grazing may be used to give the primary grasses a competitive edge over the woody vegetation. A complete lack of grazing may also result in the site becoming dominated by woody vegetation.

7. Wildlife Considerations:

When maintained in good to excellent condition, this site provides habitat for numerous wildlife species. The combination of tall grasses, forbs, shrubs, and trees provides food, nesting, and loafing cover for deer, quail, numerous songbirds, and small mammals. It may also be suitable habitat for limited populations of wild turkey. Several species of lizards and snakes inhabit this site.

Maintaining adequate woody vegetation for travel lanes and escape cover is necessary for maximum wildlife populations. When practicing brush management, the maintenance of a well planned brush pattern can enhance the site for most animals and songbirds. This usually requires that 25 to 35 percent of the area be maintained in woody vegetation.

8. Other Uses and Values:

This site normally has more trees than other upland sites in this area. The abundance of trees makes the site attractive for homes, cabins, camping areas, etc. However, the steep slopes and shallow soils often force such developments to adjacent sites, utilizing this site for accent.

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F = Food
N = Nesting

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bitternut hickory	L	M	H	C,F	C
black oak	L	M	H	C,F	C,F
catclaw sensitivebriar	H	H	H	F	F
Canada wildrye	H	H	M	F	C,F
hairy sunflower	H	H	H	F	C,F
Japanese brome	M <u>1/</u>	H <u>1/</u>	M	F <u>1/</u>	C
indiangrass	H	M	M	C	C,N
little bluestem	H	M	M	C	C,N
pignut hickory	L	M	M	C,F	C
pussytoes	M	H	H	F	---
rosette panicums	M	M	M	F	F
roundhead lespedeza	H	H	H	F	F
sedges	M	M	M	F	F
sideoats grama	H	M	M	---	C
switchgrass	H <u>2/</u>	L	M	C	C,F,N
Virginia tephrosia	H	H	H	F	F
western ragweed	M	M	M	---	C,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.