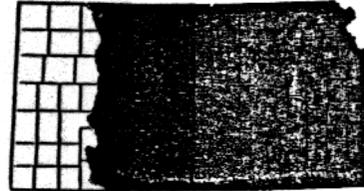


LOAMY UPLAND
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Areas 72 and 77
Central High Table Land and
Southern High Plains



2. Climate:

See climate for LRA's 72 and 77
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level to moderately sloping uplands.

4. Soils and Hydrological Characteristics:

a. This site consists of deep upland soils that have silty or loamy surface layers and subsoils. Soils are usually non-calcareous in the surface layer but may be calcareous in the subsoil and substratum. These soils are generally high in fertility.

b. Some of the soils which characterize this site are:

Keith
Richfield

Ulysses

c. Few hazards exist on this site. Severe overgrazing can lead to wind erosion and sheet and gully erosion on the steeper slopes.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. In this state, little bluestem, sideoats grama, western wheatgrass, and blue grama make up 65 to 70 percent of the total vegetation. Tall grasses such as big bluestem and switchgrass make up an additional 10 to 15 percent of the potential production.

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

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 - T</u>
35	big bluestem little bluestem sideoats grama	5 catclaw sensitivebriar heath aster	T leadplant small soapweed
50	30 blue grama 15 buffalograss 5 switchgrass 20 western wheatgrass	5 engelmann daisy gray sagewort slimflower scurfpea western ragweed	
5	bottlebrush squirreltail perennial threeawns sand dropseed sedges tall dropseed	T baldwin ironweed broom snakeweed flattop hymenopappus woolly verbena woolly yarrow yellowspine thistle	

c. Common invaders to this site include prairie threeawn, common sunflower, Japanese brome, kochia, little barley, russianthistle, sixweeks fescue, and windmillgrass.

6. Management Implications:

This site occurs on upland areas where weathered materials (residuum) have collected to form deep well developed soils. This site is dominant throughout the upland landscape.

Overgrazing with cattle on this site results in decreased production from the tall and mid grasses and preferred forbs. As these species are reduced, buffalograss and blue grama increase leading to a less productive shortgrass prairie.

Continued heavy use generally results in the elimination of all tall grasses and most mid grasses. A common situation on this site is to have blue grama and buffalograss making over 90 percent of the production. Once this condition occurs it is difficult and very slow to return the site to its productive potential without reseeding.

Highly preferred species such as big bluestem, little bluestem, and switchgrass are difficult to maintain on this site with continuous season long grazing, even with moderate stocking. Grazing systems that incorporate scheduled periodic rest periods during the growing season help to maintain this site near its potential. Well planned grazing systems are also effective in returning this site to near its potential when remnants of the major species are still present.

Western wheatgrass is a preferred grass that responds as a decreaser or increaser depending on the time of grazing. When early and late season grazing is practiced annually, western wheatgrass tends to decrease. When cattle are put on late and pulled off early during the growing season, western wheatgrass tends to increase. Grazing systems with scheduled periodic rest are effective in maintaining and improving western wheatgrass and the overall production of the site.

7 Wildlife Considerations:

When maintained in good to excellent condition, this site provides excellent habitat for pronghorn antelope. The gently sloping open landscape is a preferred area for antelope. Sites maintained in good to excellent condition generally have a more abundant and dependable supply of quality forbs which antelope prefer in their diet.

The same qualities that make this site desirable for antelope also make it a desirable feeding area for deer, pheasant, quail, blacktailed jackrabbits, and upland songbirds. For quail or deer to utilize this site significantly, either natural or man induced woody cover should be within a reasonable distance for easy escape from danger.

The shortgrass tendency of this site makes it very attractive to the blacktailed prairie dog. An aggravation to most ranchers, the prairie dog seldom invades areas where tall and mid grasses are maintained.

Small rodents prefer this site when it is near its potential. Generally the better the condition, the more small rodents that are present. It is also a preferred hunting area for many predators including hawks, owls, and coyotes.

8. Other Uses and Values:

Because of the deep fertile soils and gentle slopes of this site, it is continually in danger of development for cropland, homesites, roads, and urban uses.

The site exhibits little visual contrast but does present a panoramic view of the wide open spaces cherished by many in the Great Plains States.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of the principal forage species, 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	2,000-2,500	2,240-2,800
Normal	1,000-2,000	1,120-2,240
Unfavorable	500-1,000	560-1,120

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	18-22	.6	7-9	1.5
Good	51-75	22-27	.5	9-11	1.2
Fair	26-50	27-35	.4	11-14	1.0
Poor	0-25	35+	.3	14+	0.75

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.

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	Antelope	Deer	Pheasant
baldwin ironweed	L	M	F	F	---
big bluestem	H	M	C	C	C,N
blue grama	H	M	---	---	---
broom snakeweed	L	L	---	---	---
buffalograss	H	M	---	---	---
catclaw sensitivebriar	H	H	F	F	F
gray sagewort	L	M	F	F	F
heath aster	H	H	F	F	F
leadplant	H	H	F	F	C,F
little bluestem	H	M	C	C	C,N
perennial threeawns	L	L	---	---	---
sand dropseed	M	M	C	C	C,N
sideoats grama	H	M	---	---	C
silver bluestem	M	L	---	---	---
slimflower scurfpea	M	M	F	F	F
switchgrass	H <u>1/</u>	M <u>1/</u>	C,F <u>1/</u>	C	C,F,N
tall dropseed	M	L	C	C	C,N
western ragweed	M	M	F	F	F
western wheatgrass	H	M	F	F	C,N

1/ 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.

LOAMY UPLAND
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 73
Rolling Plains and Breaks



2. Climate:

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

3. Topography:

This site occurs on nearly level to moderately steep uplands or high terraces where extra moisture from drainage or overflow is not received.

4. Soils and Hydrological Characteristics:

a. This site consists of deep upland soils that have silty or loamy surface layers and silty or clayey subsoils. The soils have moderate to moderately slow permeability with high available water capacity. Soils are usually non-calcareous in the surface layer but may be calcareous in the subsoil and substratum. These soils are generally high in fertility.

b. The major soils which characterize this site are:

Harney	Uly
Holdrege	

c. Erosion of these rangelands by wind and water is a hazard if the vegetation is severely overgrazed or mismanaged.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem, little bluestem, and sideoats grama, are the dominant forage producers in this condition. Combined they will make up about 60 percent of the total annual yield. Western ragweed is the dominant forb on this site along with slimflower scurfpea and Louisiana sagewort. Shrubs are generally lacking or found only in small amounts on this site.

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

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

<u>Grasses and Grasslike - 85 Percent</u>		<u>Forbs - 15 Percent</u>	<u>Shrubs - T</u>
65	30	big bluestem	T leadplant
	10	indiangrass	
	20	little bluestem	
	20	sideoats grama	
	10	switchgrass	
20	10	blue grama	5
	5	buffalograss	
	5	tall dropseed	
	10	western wheatgrass	
T		Canada wildrye	5
		perennial threawns	
		scribners panicum	
		Louisiana sagewort	
		slimflower scurfpea	
		western ragweed	
		dotted gayfeather	
	daisy fleabane		
	heath aster		
	prairie sunflower		
	scarlet gaura		
	scarlet globemallow		
	silky sophora		
	spiderwort		
	stiffstem flax		
	threecleft greenthread		
	upright prairieconeflower		
	woolly plaintain		

c. Invaders common to this site are annual goldenrod, common sunflower, fall witchgrass, horseweed fleabane, kochia, little barley, tansymustard, wild lettuce, flannel mullein, woolly verbena, Japanese brome, and windmillgrass.

6. Management Implications:

This site appears on relatively flat ridges, high terraces, and only occasionally on moderately steep slopes. The relatively flat topography lends itself to good grazing distribution, however, this can often lead to overgrazing of this site in preference to adjacent steeper sites.

Initial overgrazing of this site reduces the production of big bluestem and little bluestem while sideoats grama and blue grama increase to become the dominant vegetation. With continued overgrazing blue grama and buffalograss along with lesser amounts of western wheatgrass become the prominent species on the site.

Once blue grama and buffalograss dominate this site, the relationship of blue grama to buffalograss is determined by grazing pressures and weather cycles. With continued heavy grazing combined with long dry cycles, buffalograss tends to become dominant. With moderate grazing blue grama usually dominates. Only destructive grazing will eliminate the buffalograss and blue grama from the site.

Once most of the taller species are eliminated through heavy continuous grazing and dry weather cycles, regaining the potential vegetation through management is extremely slow and may take several decades. Where remnant plants of the taller species persist, the site may be returned to its potential through proper stocking and a system of grazing that includes scheduled rest periods during the growing season.

Significant amounts of big bluestem and little bluestem are difficult to maintain on this site without a grazing management plan that includes periodic rest.

7. Wildlife Considerations:

This site was the preferred site of antelope when they once roamed this area. It will play an important role in the ability of antelope to reestablish in the area.

It is a preferred site of the blacktail jackrabbit and the blacktail prairie dog. Both of these species prefer this site when it is considerably less than its potential. An aggravation to most ranchers, the prairie dog seldom invades areas where tall and mid grasses are maintained.

For quail or deer to utilize this site significantly, either natural or man induced woody cover should be within a reasonable distance for easy escape from danger.

Small rodents prefer this site when it is near its potential. Generally the better the condition, the more small rodents that are present. It is also a preferred hunting area for many predators including hawks, owls, and coyotes.

8. Other Uses and Values:

This site probably was what Daniel Webster referred to when he spoke of the Great American Desert, especially after it has been overgrazed by bison or livestock. Short grasses, wide open spaces, and a lack of natural water and woody vegetation can give this site the appearance of a desert to many Easterners.

It is a preferred home building site especially where windbreaks can be established for protection from winter blizzards and the hot winds of summer.

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	3,500-4,500	3,920-5,040
Normal	2,500-3,500	2,800-3,920
Unfavorable	1,800-2,500	2,020-2,800

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	14-18	.8	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+	.3	12+	.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.

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	Antelope	Deer	Pheasant
big bluestem	H	M	C	C	C,N
blue grama	H	H	--	--	--
buffalograss	H	M	--	--	--
daisy fleabane	L	M	F	F	F
dotted gayfeather	M	M	F	F	--
heath aster	H	H	F	F	F
Japanese brome	M <u>1/</u>	H <u>1/</u>	F <u>1/</u>	F <u>1/</u>	F <u>1/</u>
leadplant	H	H	C,F	C,F	C,F
little bluestem	H	M	C	C	C,N
Louisiana sagewort	L	M	F	F	F
perennial threeawns	L	L	--	--	--
sand dropseed	M	M	--	--	--
scarlet globemallow	L	M	F	F	F
sideoats grama	H	M	--	--	
slimflower scurfpea	L	M	F	F	F
switchgrass	H <u>2/</u>	M	C	C	C,F,N
tall dropseed	M	L	C	C	C,N
western ragweed	M	M	F	F	F
western wheatgrass	H	M	F	F	C,N

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.

LOAMY UPLAND
KANSAS RANGE SITE DESCRIPTION

Location of Site:

Land Resource Areas 74, 75, and 80A
Central Kansas Sandstone Hills,
Central Loess Plains, and
Central Rolling Red Prairies



2 Climate:

See climate for LRA's 74, 75, and 80A
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level to moderately steep uplands.

4 Soils and Hydrological Characteristics:

a. The soils on this site are deep to moderately deep upland soils that have 14 inches or more of silty or loamy surfaces and silty or clayey subsoils. The soils have moderate or moderately slow permeability with high available water capacity. They are moderately well drained or well drained. They are usually noncalcareous in the surface layer but may be calcareous in the subsoil and substratum. These soils are generally high in fertility.

b. The major soils which characterize this site are:

Bethany	Nashville
Blanket	Norge
Farnum, loam	Pond Creek
Geary	Smolan
Grant	Tully
Hastings	Vanoss
Lancaster	Wells
Longford	

c. Erosion of these rangelands by wind and water is a hazard if the vegetation is severely overgrazed or mismanaged.

5. Climax Vegetation:

- a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem, little bluestem, sideoats grama, indiagrass, and switchgrass are the dominant forage producers. These grass species will make up about 80 percent of the total annual yield. Western ragweed is the dominant forb on this site along with the scurfpeas and Louisiana sagewort. Shrubs are generally lacking or found only in small amounts on this site.

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

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 - T</u>	
50	40 big bluestem	blacksamson echinacea	T leadplant prairie rose	
	5 blue grama	compassplant		
	10 indiagrass	daisy fleabane		
	15 sideoats grama	dotted gayfeather		
35	5 eastern gamagrass	heath aster		
	25 little bluestem	Louisiana sagewort		
	10 switchgrass	manyflower scurfpea		
	5 tall dropseed	maximilian sunflower		
	5	western wheatgrass 10	prairie sunflower	
			scarlet gaura	
5		scarlet globemallow		
	buffalograss	silky sophora		
	Canada wildrye	slimflower scurfpea		
	perennial threeawns	spiderwort		
	scribner panicum	stiffstem flax		
	sedges	threecleft greenthread		
		upright prairieconeflower		
	western ragweed			
	woolly plantain			

- c. Invaders common to this site are annual broomweed, common sunflower, fall witchgrass, kochia, little barley, silver bluestem, tansymustard, wild lettuce, flannel mullein, woolly verbena, Japanese brome, and windmillgrass.

6. Management Implications:

The relatively flat topography of this site lends itself to good grazing distribution, however, this can often lead to overgrazing of this site in preference to adjacent steeper sites.

Initial overgrazing of this site reduces the production of big bluestem, indiagrass, and switchgrass while little bluestem, sideoats grama, and blue grama increase. With continued overgrazing sideoats grama, blue grama, buffalograss, and western wheatgrass become the prominent species on the site.

Once most of the taller species are eliminated through heavy continuous grazing pressure and dry weather cycles, regaining the potential vegetation through management is slow. Where remnant plants of the taller species persist, the site may be returned to its potential through proper stocking and a system of grazing that includes scheduled rest periods during the growing season. These are also the key management tools to maintain or improve the site in any range condition

7. Wildlife Considerations:

In good to excellent condition, this site provides excellent habitat for ground nesting birds, rodents, and other small animals. The variety of grasses and forbs found on this site provides a large food chain in and around this site.

Small rodents prefer this site when it is near its potential. Generally, the better the condition, the more small rodents that are present. When the site is in a lower condition, it is a preferred area for the blacktail jackrabbit and may be invaded by the blacktail prairie dog.

The site is a preferred hunting area for many predators including hawks, owls, and coyotes.

8 Other Uses and Values

Much of this site is used for cropland. The fertile deep soils also provide excellent sites for housing and other developments. The establishment of windbreaks provides protection from winter storms and increases the value of this site for such development.

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, proper burning techniques, if 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	4,500-6,000	5,040-6,720
Normal	3,500-4,500	3,920-5,040
Unfavorable	2,000-3,500	2,240-3,920

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	9-12	1.1	3-5	2.7
Good	51-75	12-17	.8	5-7	2.0
Fair	26-50	17-25	.6	7-10	1.5
Poor	0-25	25+	.4	10+	1.0

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 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	Pheasant
big bluestem	H	M	C	C,N
blue grama	H	H	---	---
buffalograss	H	M	---	---
daisy fleabane	L	M	F	F
dotted gayfeather	M	M	F	---
heath aster	M	H	F	F
indiangrass	H	M	C	C,N
Japanese brome	M <u>1/</u>	H	F	F
leadplant	H	H	C,F	C,F
little bluestem	H	M	C	C,N
Louisiana sagewort	L	M	F	F
scarlet globemallow	L	M	F	F
sideoats grama	H	M	---	C
scurfpeas	L	M	F	F
switchgrass	H <u>2/</u>	M	C	C,F,N
tall dropseed	M	L	C	C,N
western ragweed	M	M	F	C,F
western wheatgrass	H	M <u>1/</u>	F	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

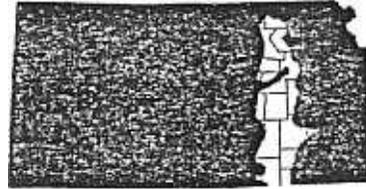
Reference:

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

LOAMY UPLAND
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 76
Bluestem Hills (Flint Hills)



2. Climate:

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

3. Topography:

Occurs on nearly level to rolling uplands with slopes to 20 percent.
In rare cases slopes may approach 30 percent.

4. Soils and Hydrological Characteristics:

a. Upland soils that have silty or loamy surface layers. The surface is usually well granulated and has good structure 14 inches or more in depth over loamy or clayey subsoils. The soils have a good water relationship to vegetation and high water-holding capacity. Some soils, or soil phases, may have stone, rock, or chert on the soil surface as well as in the soil profile.

b. The major soils that characterize this site are:

Bethany
Elmont
Florence

Labette
Martin
Tully

c. Gullying can be a severe hazard particularly on steeper slopes. It is easily started by overgrazing and excessive trailing by livestock. In addition, excessive removal of the vegetation prior to spring growth allows early rains to cause sheet erosion.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a tall grass prairie. Big bluestem, little bluestem, indiagrass, switchgrass, and eastern gamagrass produce about 85 percent of the total vegetation. In its development, the vegetation on this site was influenced by fire and grazing. The grazing was predominantly by large transient herds of bison and lesser amounts of 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>Shrubs - T</u>	
85	45 big bluestem	buttonsnakeroot eryngo catclaw sensitivebriar cobea penstemon compassplant dotted gayfeather fringeleaf ruellia hairy sunflower Illinois bundleflower pale echinacea pitcher sage purple prairieclover roundhead lespedeza serrateleaf eveningprimrose slender lespedeza stiff sunflower tall gayfeather Virginia tephrosia white prairieclover	T ceanothus leadplant	
	25 little bluestem			
	15 indiagrass			
	10 eastern gamagrass			
	10 switchgrass			
5	blue grama		10	
	buffalograss			
	Canada wildrye			
	porcupinegrass			
	prairie junegrass			
	purple lovegrass			
	rosette panicums			
	sideoats grama			
	sedges			
	tall dropseed			
Virginia wildrye				
		T		

c. Common invaders to this site include common ragweed, Japanese brome, Korean lespedeza, Kentucky bluegrass, buckbrush, prairie threeawn, smooth sunac, roughleaf dogwood, red cedar, and osageorange.

6. Management Implications:

This site appears on upland areas where weathered materials (residuum) have collected to form a site consisting of deep soils. They are generally more developed than other upland soils. This site is scattered throughout the landscape.

Undesirable woody species will tend to dominate this site if prescribed burning or other methods of brush control are not used. Buckbrush, osageorange, and red cedar are the most common woody invaders.

Overgrazing with cattle on this site results in decreased production from the major tall grasses and preferred forbs such as Illinois bundleflower, purple prairieclover, roundhead lespedeza, spiderwort, compassplant, and catclaw sensitivebriar. As these species are reduced, less desirable plants such as tall dropseed, sideoats grama, buffalograss, western ragweed, Missouri goldenrod, and baldwin ironweed increase, lending the site towards that of a mixed grass prairie.

Continued heavy use results in a severe depletion in the vigor of the principal grasses and results in the elimination of many forb species. Tall dropseed, western ragweed, annual broomweed, prairie threawn, Kentucky bluegrass, silver bluestem, buckbrush, and red cedar become the dominant vegetation. Remnants of the major grass species tend to survive in a very reduced (low vigor) condition unless destructive grazing occurs.

Even with proper use of the major forage species, continuous summer long or yearlong grazing will result in the reduction and elimination of high preference species such as eastern gamagrass, maximilian sunflower, stiff sunflower, and compassplant. Severe spot grazing may also occur on this site unless grazing patterns are altered by the use of prescribed burning, mowing, and/or intensified grazing management.

Overgrazing with sheep results in the elimination of most forb species. The principal grasses decline more slowly which eventually results in tall dropseed and prairie threawn dominating the site.

Grazing management that includes proper stocking and timely rest is needed to restore and maintain the vegetation on this site.

7. Wildlife Considerations:

When maintained in good to excellent condition, this site provides excellent nesting areas for prairie chickens, especially when it is associated with adjacent booming grounds. The variety of forbs, grasses, and insects on this site makes it a preferred feeding area for whitetail deer and quail. Numerous songbirds utilize this site for nesting and other activities. Overgrazing reduces the availability of food and cover that attracts these species to this site.

Where excess litter buildup occurs on this site, a properly timed spring burn will reduce the amount of mulch, making it more desirable for young birds, especially prairie chickens.

Numerous rodents and other small animals utilize this site taking advantage of the taller growing grasses to shield them from the watchful eyes of hawks, owls, and other predators.

8. Other Uses and Values:

From mid-March to early October a great array of wildflowers bloom on this site. Some of the wildflowers bloom for only a few days while others last several weeks. The wildflowers that are most visible change from year to year due to the variability of the climatic conditions. Because of this variety of wildflowers and the grasses, numerous individuals collect plant materials from this site for dried floral arrangements and propagation. For many it is for pleasure but for some it is a business.

As with other tall grass sites, the grasses tend to mask the numerous variety of plants present.

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, timing 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	5000-6500	5600-7300
Normal	3500-5000	3900-5600
Unfavorable	2500-3500	2800-3900

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	7-10	1.4	2.8-4	0.6
Good	51-75	10-14	1.0	4-5.7	0.4
Fair	26-50	14-20	0.7	5.7-8	0.3
Poor	0-25	20+	0.45	8+	0.2

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 1.25 to 1.5 tons 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
baldwin ironweed	L	M	---	---
big bluestem	H	M	C	C,N
catclaw sensitivebriar	H	H	F	F
ceanothus	H	H	F	F,C
compassplant	H	H	F	F
dotted gayfeather	M	M	---	---
eastern gamagrass	H	H	C,F	C,F,N
Illinois bundleflower	H	H	F	F
indiangrass	H	M	C	C,N
Japanese brome	M <u>1/</u>	H	F	---
leadplant	H	H	F	F,C
little bluestem	H	M	C	C,N
prairie threeawn	L	L	---	---
rosette panicums	M	M <u>1/</u>	F	F
roundhead lespedeza	H	H	F	F
sideoats grama	H	M	---	C
switchgrass	H	L	C	C,N
western ragweed	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.

LOAMY UPLAND
KANSAS RANGE SITE DESCRIPTION

1 Location of Site:

Land Resource Areas 78 and 79
Central Rolling Red Plains and
Great Bend Sand Plains



2. Climate:

See climate for LRA's 78 and 79
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level to moderately steep uplands

4. Soils and Hydrological Characteristics:

a. This site consists of deep and moderately deep upland soils that have silty or loamy surface layers and silty or clayey subsoils. The soils have moderate to slow permeability with high available water capacity. Soils are usually non-calcareous in the surface layer but may be calcareous in the subsoil and substratum. These soils are generally high in fertility.

b. The major soils which characterize this site are:

Bethany	Kingfisher
Blanket	Ost
Carey	Woodward
Farnum, loam, clay loam	

c. Erosion of these rangelands by wind and water is a hazard if the vegetation is severely overgrazed or mismanaged.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem, little bluestem, and sideoats grama, are the dominant forage producers in this condition. Combined they will make up 50 to 60 percent of the total annual yield. Western ragweed is the dominant forb on this site along with slimflower scurfpea and Louisiana sagewort. Shrubs are generally lacking or found only in small amounts on this site.

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

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

<u>Grasses and Grasslike - 85 Percent</u>		<u>Forbs - 15 Percent</u>	<u>Shrubs - T</u>	
60	25 big bluestem	10	5 Louisiana sagewort	leadplant
	10 indiangrass		5 slimflower scurfpea	
	15 little bluestem		10 western ragweed	
	20 sideoats grama			
	10 switchgrass			
25	10 blue grama	5	dotted gayfeather	
	5 buffalograss		daisy fleabane	
	5 Canada wildrye		heath aster	
	5 tall dropseed		maximilian sunflower	
	10 western wheatgrass		prairie sunflower	
T			scarlet gaura	
	perennial threeawns		scarlet globemallow	
	sand dropseed		silky sophora	
	scribner panicum		spiderwort	
			stiffstem flax	
	threecleft greenthread			
	upright prairieconeflower			
	woolly plaintain			

c. Invaders common to this site are annual broomweed, common sunflower, fall witchgrass, broomweed, kochia, little barley, sixweeks fescue, silver bluestem, tansymustard, wild lettuce, woolly verberna, Japanese brome, and windmillgrass.

6. Management Implications:

The relatively flat topography associated with this site lends itself to good grazing distribution; however, this can often lead to overgrazing of this site in preference to adjacent steeper sloping sites.

Initial overgrazing of this site reduces the production of big bluestem and little bluestem while sideoats grama and blue grama increase to become the dominant vegetation. With continued overgrazing blue grama and buffalograss along with lesser amounts of western wheatgrass become the prominent species on the site.

Once blue grama and buffalograss dominate this site, continued heavy grazing combined with long dry cycles allows buffalograss to dominate. With moderate grazing blue grama usually dominates. Buffalograss and blue grama are persistent on this site, but they may give way to perennial threeawns and silver bluestem with continued excessive use.

Once most of the taller species are eliminated through heavy continuous grazing and dry weather cycles, regaining the potential vegetation through management is extremely slow and may take several decades. Where remnant plants of the taller species persist, the site may be returned to its potential through proper stocking and a system of grazing that includes scheduled rest periods during the growing season.

Significant amounts of big bluestem and little bluestem are difficult to maintain on this site without a grazing management plan that includes periodic rest.

7 Wildlife Considerations:

This site was the preferred site of antelope when they once roamed this area. It will play an important role in attempts to reestablish antelope in the area.

It is a preferred site of the black-tailed jackrabbit and the black-tailed prairie dog. Both of these species prefer this site when it is producing considerably less forage than its potential. An aggravation to most ranchers, the prairie dog seldom invades areas where tall and mid grasses are maintained.

For quail or deer to utilize this site significantly, either natural or man induced woody cover should be within a reasonable distance for easy escape from danger.

Small rodents prefer this site when it is near its potential. Generally the better the condition, the more small rodents that are present. It is also a preferred hunting area for many predators including hawks, owls, and coyotes.

8. Other Uses and Values:

Much of this site is used for cropland. The deep, loamy soils provide good sites for housing and other developments. The establishment of windbreaks provides protection from winter storms and increases the value of this site for such developments.

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	3,500-4,500	3,920-5,040
Normal	2,500-3,500	2,800-3,920
Unfavorable	1,500-2,500	1,680-2,800

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	14-18	.8	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+	.3	12+	.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.

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	Antelope	Deer	Pheasant
big bluestem	H	M	C	C	C,N
blue grama	H	H	---	---	---
buffalograss	H	M	---	---	---
daisy fleabane	L	M	F	F	F
dotted gayfeather	M	M	F	F	---
heath aster	H	H	F	F	F
Japanese brome	M <u>1/</u>	H <u>1/</u>	F	F	F
leadplant	H	H	C,F	C,F	C,F
little bluestem	H	M	C	C	C,N
Louisiana sagewort	L	M	F	F	F
perennial threeawns	L	L	---	---	---
sand dropseed	M	M	---	---	C
scarlet globemallow	L	M	F	F	F
sideoats grama	H	M	---	---	C
slimflower scurfpea	L	M	F	F	F
switchgrass	H <u>2/</u>	M	C	C	C,F,N
tall dropseed	M	L	C	C	C,N
western ragweed	M	M	F	F	C,F
western wheatgrass	H	M	F	F	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

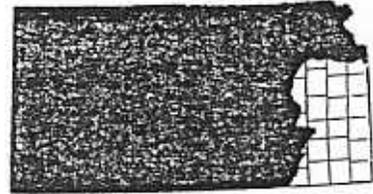
Reference:

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

LOAMY UPLAND
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:

Occurs on nearly level to rolling uplands with slopes up to 25 percent.

4. Soils and Hydrological Characteristics:

a. Upland soils that have silty or loamy surface layers. The surface is usually well granulated and has good structure. The depth to loamy or clayey subsoils is more than 14 inches. The soils have a good water relationship to vegetation and a high water-holding capacity. Some soils, or soil phases, have stone, rock, or chert on the soil surface as well as in the soil profile.

b. The major soils that characterize this site are:

Bates	Lula
Catoosa	Nowata
Dennis	Olpe

c. Gullying can be a severe hazard particularly on steeper slopes. It is easily started by overgrazing and excessive trailing by livestock. In addition to gully erosion, excessive removal of the vegetation prior to spring growth may allow spring rains to cause sheet erosion.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a tall grass prairie. Big bluestem, little bluestem, indiagrass, switchgrass, and eastern gamagrass produce about 85 percent of the total vegetation. The vegetation on this site was developed under the influence of periodic fires and grazing. The grazing was predominantly by large herds of elk and deer.

- c. Common invaders to this site include annual broomweed, blackberry, broomsedge, buckbrush, common lespedeza, common ragweed, Japanese brome, Korean lespedeza, Kentucky bluegrass, lanceleaf ragweed, osageorange, prairie threeawn, purpletop, red cedar, roughleaf dogwood, silver bluestem, smooth sumac, and splitbeard bluestem.

6. Management Implications:

This site appears on upland areas where weathered materials (residuum) have collected to form a site consisting of deep soils. They are generally more developed than other upland soils. This site is scattered throughout the landscape except that it is rarely found on ridgetops.

When fire is eliminated without the use of other methods of brush management, much of this site may become dominated by undesirable woody species. Blackberry is a major problem on this site, especially where the soils become somewhat acid. Hawthorns, buckbrush, common persimmon, red cedar, dogwood, and other woody plants all do well on this site. The many combinations of brush that may exist often make it necessary to use more than one type of brush management to maintain the woody species within tolerable populations.

Overgrazing with cattle on this site results in decreased production from the major tall grasses and highly preferred forbs such as Illinois bundleflower, purple prairieclover, roundhead lespedeza, spiderwort, compassplant, and catclaw sensitivebriar. As these plants are reduced, such plants as tall dropseed, sideoats grama, buffalograss, western ragweed, Missouri goldenrod, and baldwin ironweed increase, giving the site the appearance of a mixed prairie

Continued heavy use results in a severe depletion in the vigor of the principal grasses and results in the elimination of many forb species. Tall dropseed, lanceleaf ragweed, annual broomweed, prairie threeawn, Kentucky bluegrass, silver bluestem, buckbrush, and blackberry become the dominant vegetation. Unless destructive grazing occurs, remnants of the major grass species tend to survive in a very reduced condition.

Even with proper use of the major forage species, continuous summer long or yearlong grazing will result in the reduction and elimination of high preference species such as eastern gamagrass, maximilian sunflower, stiff sunflower, and compassplant. Severe spot grazing may also occur on this site unless grazing patterns are altered by the use of prescribed burning, mowing, and/or intensified grazing management.

Overgrazing with sheep results in the elimination of most forb species. The principal grasses decline more slowly, eventually resulting in tall dropseed and prairie threeawn dominating the site.

Grazing management that includes proper stocking and timely rest is needed to restore and maintain the vegetation on this site.

7 Wildlife Considerations:

When maintained in good to excellent condition, this site provides excellent nesting areas for prairie chickens, especially when it is associated with adjacent booming grounds. The variety of forbs, grasses, and insects on this site makes it a preferred feeding area for whitetail deer and quail. Numerous songbirds utilize this site for nesting and other activities. Overgrazing reduces the availability of the food and cover that attracts these species to this site.

Where excess litter buildup occurs on this site, a properly timed spring burn will reduce the amount of mulch, making it more desirable for young birds, especially prairie chickens.

Numerous rodents and small animals utilize this site by taking advantage of the taller growing grasses to shield them from the watchful eyes of predators.

8. Other Uses and Values:

From mid-March to early October a great array of wildflowers bloom on this site. Some of the wildflowers bloom for only a few days while others last several weeks. The wildflowers that are most visible change from year to year due to the variability of the growing seasons. Because of this variety of wildflowers and the grasses, numerous individuals collect plant materials from this site for dried floral arrangements. For many it is for pleasure but for some it is a business.

As with other tall grass sites, the grasses tend to mask the numerous variety of plants present.

Blackberries often occur on this site. The fruit is often harvested for fresh fruit and the making of jelly and wine.

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	5500-7000	6100-7800
Normal	4000-5500	4500-6100
Unfavorable	2500-4000	2800-4500

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	7-9	1.6	3-4	4.0
Good	51-75	9-13	1.2	4-5	3.0
Fair	26-50	13-20	.8	5-8	2.0
Poor	0-25	20+	.5	8+	1.25

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.

When maintained in good to excellent condition, an average hay yield of 1.5 to 1.75 tons 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
baldwin ironweed	L	M	---	---
big bluestem	H	M	C	C,N
catclaw sensitivebriar	H	H	F	F
ceanothus	H	H	F	F,C
compassplant	H	H	F	F
dotted gayfeather	M	M	---	---
eastern gamagrass	H	H	C,F	C,F,N
Illinois bundleflower	H	H	F	F
indiangrass	H	M	C	C,N
Japanese brome	M <u>1/</u>	H	F	---
leadplant	H	H	F	C,F
little bluestem	H	M	C	C,N
prairie threeawn	L	L	---	---
rosette panicums	M	M <u>1/</u>	F	F
roundhead lespedeza	H	H	F	F
sideoats grama	H	M	---	---
switchgrass	H	L	C	C,N
western ragweed	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.

LOAMY UPLAND
KANSAS RANGE SITE DESCRIPTION

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:

Occurs on nearly level to rolling uplands with slopes up to 25 percent.

4. Soils and Hydrological Characteristics:

a. The soils in this site are silty or loamy and have moderate or moderately slow permeability. They are generally more than 60 inches deep over bedrock and formed in loess or glacial material. A few soils are moderately deep over sandstone or shale. These soils are well drained or moderately well drained. They have a high water-holding capacity and a good water relationship to vegetation.

b. The soils that characterize this site are:

Burchard	Morrill
Marshall	Olmitz
Monona	Sharpsburg
	Shelby

c. Gullying can be a severe hazard particularly on steeper slopes. It is easily started by overgrazing and excessive trailing by livestock.

5. Climax Vegetation:

a. The natural potential vegetation on this site is a tall grass prairie. Big bluestem, little bluestem, indiagrass, switchgrass, and eastern gamagrass produce about 85 percent of the total vegetation. The vegetation on this site was developed under the influence of periodic fires and grazing. The grazing was predominantly by large transient herds of bison and lesser numbers of 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>Shrubs - T</u>
40	big bluestem	buttonsnakeroot eryngo	Arkansas rose
10	eastern gamagrass	catclaw sensitivebriar	ceanothus
80	15 indiangrass	cobea penstemon	leadplant
25	little bluestem	compassplant	prairie rose
10	switchgrass	fringeleaf ruellia	
5	porcupinegrass	groundplum milkvetch	
	Canada wildrye	Illinois bundleflower	
	Florida paspalum	Illinois tickclover	
5	knotroot bristlegrass	maximilian sunflower	
	prairie junegrass	pitcher sage	
	purple lovegrass	purple prairieclover	
	rosette panicums	roundhead lespedeza	
	sedges	spiderwort	
	sideoats grama	stiff sunflower	
	tall dropseed	white prairieclover	
	Virginia wildrye		
		ashy sunflower	
		Atlantic wildindigo	
		baldwin ironweed	
		blue wildindigo	
		Louisiana sagewort	
		manyflower scurfpea	
		Missouri goldenrod	
		plains wildindigo	
		tall gayfeather	
		wavyleaf thistle	
		western ragweed	
		aromatic aster	
		biennial guara	
		blackeyedsusan	
		boneset	
		butterfly milkweed	
		dogbane	
		dotted gayfeather	
		falseboneset	
		green antelopehorn	
		heath aster	
		longbeard hawkweed	
		plains larkspur	
		prairieconeflower	
		prairie four-o'clock	
		prairie groundsel	
		slender mountainmint	
		stiff goldenrod	
		tall eupatorium	
		whorled milkweed	
		woolly verbena	

- c. Common invaders to this site include annual broomweed, blackberry, broomsedge, buckbrush, common lespedeza, common ragweed, Japanese brome, Korean lespedeza, Kentucky bluegrass, lanceleaf ragweed, osageorange, prairie threeawn, purpletop, redcedar, roughleaf dogwood, silver bluestem, smooth sumac, and splitbeard bluestem.

6. Management Implications:

This site is on side slopes and convex ridges in uplands. A few areas are on foot slopes. The slopes typically are 3 to 12 percent but range from 0 to 30 percent.

When fire is eliminated without the use of other methods of brush management, much of this site may become dominated by undesirable woody species. Blackberry is a major problem on this site, especially where the soils become somewhat acid. Buckbrush, osageorange, redcedar, dogwood, and other woody plants all do well on this site. The many combinations of brush that may exist often make it necessary to use more than one method of brush management to maintain the woody species within tolerable populations.

Overgrazing with cattle on this site results in decreased production from the major tall grasses and highly preferred forbs such as Illinois bundleflower, purple prairieclover, roundhead lespedeza, compassplant, and catclaw sensitivebriar. As these plants are reduced, tall dropseed, sideoats grama, buffalograss, western ragweed, Missouri goldenrod, and baldwin ironweed increase, giving the site the appearance of a mixed prairie.

Continued heavy use results in a severe depletion in the vigor of the principal grasses and results in the elimination of many forb species. Tall dropseed, lanceleaf ragweed, annual broomweed, prairie threeawn, Kentucky bluegrass, silver bluestem, buckbrush, and blackberry become the dominant vegetation. Unless destructive grazing occurs, remnants of the major grass species tend to survive in a very reduced condition.

Even with proper use of the major forage species, continuous summer long or yearlong grazing will result in the reduction and elimination of high preference species such as eastern gamagrass, maximilian sunflower, stiff sunflower, and compassplant. Severe spot grazing may also occur on this site unless grazing patterns are altered by the use of prescribed burning, mowing, and/or intensified grazing management.

Overgrazing with sheep results in the elimination of most forb species. The principal grasses decline more slowly, eventually resulting in tall dropseed and prairie threeawn dominating the site.

Grazing management that includes proper stocking and timely rest is needed to restore and maintain the vegetation on this site.

Ungrazed and unburned areas that are cut for hay may show a significant increase in porcupinegrass.

7. Wildlife Considerations:

When maintained in good to excellent condition, this site provides excellent nesting areas for quail, pheasant, and prairie chickens, especially when it is associated with adjacent booming grounds. The variety of forbs, grasses, and insects on this site makes it a preferred feeding area for white-tail deer and quail. Numerous songbirds utilize this site for nesting and other activities. Overgrazing reduces the availability of the food and cover that attracts these species to this site.

Where excess litter buildup occurs on this site, a properly timed spring burn will reduce the amount of mulch, making it more desirable for young birds, especially quail and prairie chickens.

Numerous rodents and small animals utilize this site by taking advantage of the taller growing grasses to shield them from the watchful eyes of predators.

8. Other Uses and Values:

The deep productive nature of the soils in this site makes them attractive for a variety of other uses. When in large blocks, on flatter slopes, they are preferred cropland soils. Improved pasture grasses do well on these soils. This site is also a prime candidate for residential, commercial, and industrial development because of the suitability for construction activities.

Wildflowers are abundant on this site. The wildflowers that are most visible change from year to year due to the variability of the growing seasons. Because of this variety of wildflowers and the grasses, numerous individuals collect plant materials from this site for dried floral arrangements. For many it is for pleasure but for some it is a business.

As with other tall grass sites, the grasses tend to mask the numerous variety of plants present.

Blackberries often occur on this site. The fruit is often harvested for fresh fruit and the making of jelly and wine.

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	5000-6000	5600-6800
Normal	4000-5000	4500-5600
Unfavorable	3000-4000	3400-4500

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	7-10	1.4	3-4	3.5
Good	51-75	10-14	1.0	4-6	2.5
Fair	26-50	14-20	.7	6-8	1.75
Poor	0-25	20+	.5	8+	1.25

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.

When maintained in good to excellent condition, an average hay yield of 1.5 to 1.75 tons 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	Quail
baldwin ironweed	L	M	---	C
big bluestem	H	M	C	C,N
catclaw sensitivebriar	H	H	F	F
ceanothus	H	H	F	C,F
compassplant	H	H	F	C,F
dotted gayfeather	M	M	---	---
eastern gamagrass	H	H	C,F	C,F,N
Illinois bundleflower	H	H	F	F
indiangrass	H	M	C	C,N
Japanese brome	M <u>1/</u>	H	F <u>1/</u>	C
leadplant	H	H	F	C
little bluestem	H	M	C	C,N
prairie threeawn	L	L	---	---
rosette panicums	M	M <u>1/</u>	F	F
roundhead lespedeza	H	H	F	F
sideoats grama	H	M	---	C
switchgrass	H <u>2/</u>	L	C	C,F,N
western ragweed	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.