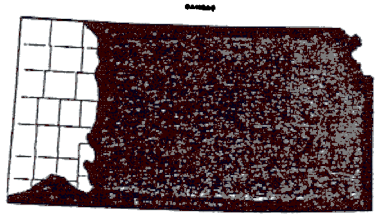
SALINE SUBIRRIGATED

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:



Land Resource Area 72
Central High Table Land

2. Climate:

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

3. Topography:

This site occurs on nearly level, somewhat "channeled" areas adjacent to streams having underground water movement. This site is subject to flooding.

4. Soils and Hydrological Characteristics:

a. This site consists of moderately deep saline and saline-alkali soils. The high concentration of salts affects both the kind and amount of vegetation present. Surface and subsoil layers are clayey to loamy. Substrata are sand and gravel which maintain a permanent water table between 24 to 48 inches below the soil surface.

b. The soils that characterize this site are:

Bowdoin	Las
Drummond	Las Animas

c. The main limitations of this site are salinity, alkalinity, and flooding. Wind and water erosion is not normally a hazard on this site. Siltation can be a problem when major floods occur.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie dominated by salt-tolerant species. Alkali cordgrass, inland saltgrass, and western wheatgrass make up about 55 to 60 percent of the potential vegetation.

Tall species such as indiangrass and switchgrass are common on the less saline portions of the site. Forbs and woody species are not as prominent on this site as they are on most associated sites.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 90 Percent			Forbs - 10 Percent		Shrubs and Cacti - T	
	15	alkali cordgrass		American licorice	T	willow baccharis
	10	indiangrass		heath aster		
	25	inland saltgrass	10	Illinois bundleflower		
80	15	switchgrass		swamp smartweed		
	10	vinemesquite		western ragweed		
	20	western wheatgrass				
		blue grama				
		buffalograss				
5		Canada wildrye				
		sideoats grama				
5		rushes				
		sedges				

c. Invaders common to the site are: alkali muhly, foxtail barley, Japanese bromegrass, Kentucky bluegrass, kochia, russianthistle, sumpweed, tamarisk, and tumblegrass.

6. Management Implications:

This site occurs on bottomlands and stream terraces of major stream valleys. Most of the soils are wet on the surface throughout the spring and early summer.

Overgrazing of this site has little effect on species composition unless the overgrazing is excessive over a long period of time. However, the small amounts of indiangrass and some of the switchgrass can easily be reduced by overgrazing. Excessive use can reduce the productivity of the site by reducing the vigor of the grasses.

Proper stocking and timely grazing are tools that help maintain this site in a productive condition. Grazing this site early in the growing season is important as the saline-alkaline tolerant species tend to mature rapidly and become much less palatable late in the season.

Fire is a tool that may be used to obtain better utilization especially on the alkali cordgrass.

7 Wildlife Considerations:

Utilizing this site with livestock in the late spring and early summer, then leaving the regrowth makes excellent winter habitat for a variety of wildlife.

Although this site is good habitat for numerous birds and mammals, it is preferred winter habitat for pheasant, waterfowl, and muskrat. The muskrat are associated with the areas containing free water. The waterfowl also prefer the areas with free water but will utilize most of the site. They use the site for food, nesting, and cover in the early spring if adequate vegetative cover is maintained.

8. Other Uses and Values:

Due to the wetness of this site, its uses for other than rangeland and wildlifeland are very limited.

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.

Growing Conditions	Total Air Dry Herbage Pounds/Acre	Total Air Dry Herbage Kilograms/Hectare
Favorable	1/	1/
Normal	5,000-6,500	5,600-7,300
Unfavorable	1/	1/

1/ The subirrigated condition tends to nullify the effect of precipitation.

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	8-9	1.4	3-4	3.5
Good	51-75	9-12	1.1	4-5	2.7
Fair	26-50	12-17	.8	5-7	2.0
Poor	0-25	17+	.6	7+	1.5

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	Wildlife Preferred Uses
H = High	C = Cover
M = Medium	F = Food
L = Low	N = Nesting

Plant Species	Animal Species		
	Cattle	Pheasant	Ducks
alkali cordgrass	M	C,N	C
alkali sacaton	M	C	C
blue grama	H	--	--
buffalograss	H	--	--
Canada wildrye	H	C,N	C
heath aster	M	F	F
indiangrass	H	C,N	C,N
inland saltgrass	M	--	F,N
Japanese brome	M 1/	F 1/	F 1/
Pennsylvania smartweed	L	F	F
purple prairieclover	H	F	--
rushes	L	--	N
sedges	M	F	F,N
switchgrass	H 2/	C,F,N	C,F,N
tall dropseed	M	C	C
western ragweed	M	F	F
western wheatgrass	H	C,N	F 1/
willow baccharis	L	--	

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.

SALINE SUBIRRIGATED

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 bottomlands and stream terraces of major stream valleys.

4 Soils and Hydrological Characteristics:

a. The soils on this site are deep, silty, somewhat poorly drained or poorly drained. These are saline-alkali soils that have formed in alluvial sediments that are mainly silty. They have moderately slow or slow permeability.

b. The soil that characterizes this site is Saltine.

c. The main limitations of this site are salinity, alkalinity, and common flooding. Wind and water erosion is not normally a hazard on this site. Siltation can be a problem when major floods occur.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie dominated by salt-tolerant species. Alkali cordgrass, inland saltgrass, and western wheatgrass make up about 70 percent of the potential vegetation.

Tall species such as indiangrass and switchgrass are common on the less saline portions of the site. Varying saline concentrations and the associated grass species give a patterned or mosaic appearance to much of this site. Forbs and woody species are not as prominent on this site as they are on most associated sites.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 95 percent			Forbs - 5 percent		Shrubs and Cacti - T	
	35	alkali or prairie cordgrass		heath aster	T	willow baccharis
	10	indiangrass	5	Pennsylvania smartweed		
85	25	inland saltgrass		purple prairieclover		
	10	switchgrass		western ragweed		
	20	western wheatgrass				
		alkali sacaton				
		blue grama				
5		buffalograss				
		Canada wildrye				
		tall dropseed				
		rushes				
5		sedges				

c. Invaders common to this site are alkali muhly, Japanese bromegrass, Kentucky bluegrass, kochia, russianthistle, sumpweed, tamarisk, and tumblegrass.

6. Management Implications:

This site occurs on bottomlands and stream terraces of major stream valleys. Most of the soils are wet on the surface throughout the spring and early summer.

Overgrazing of this site has little effect on species composition unless the overgrazing is excessive over a long period of time. However, the small amounts of indiangrass and some of the switchgrass can easily be reduced by overgrazing. Excessive use reduces the productivity of the site principally by reducing the vigor of the grasses.

Proper stocking and timely grazing are tools that help maintain this site in a productive condition. Grazing this site early in the growing season is important as the saline-alkali tolerant species tend to mature rapidly and become much less palatable late in the season.

Fire is a management tool that may be used to obtain better utilization especially on the alkali cordgrass.

7. Wildlife Considerations:

Utilizing this site with livestock in the late spring and early summer, then leaving the regrowth makes excellent winter habitat for a variety of wildlife including mammals, birds, insects, and reptiles.

This is preferred winter habitat for pheasant, waterfowl, and muskrat. The muskrat are associated with the areas containing free water. The waterfowl also prefer the areas with free water but will utilize most of the site. They also use the site for food, nesting, and cover in the early spring if adequate vegetative cover is maintained.

8. Other Uses and Values:

Due to the wetness of this site, its uses for other than rangeland and wildlifeland are very limited.

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.

Growing Conditions	Total Air Dry Herbage Pounds/Acre	Total Air Dry Herbage Kilograms/Hectare
Favorable	1/	1/
Normal	6,000-7,500	6,700-8,400
Unfavorable	1/	1/

1/ The subirrigated condition tends to nullify the effects of precipitation.

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	5-7	2.0	2-3	5.0
Good	51-75	7-10	1.5	3-4	3.7
Fair	26-50	10-15	1.0	4-6	2.5
Poor	0-25	15+	.6	6+	1.5

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	Wildlife Preferred Uses
H = High	C = Cover
M = Medium	F = Food
L = Low	N = Nesting

Plant Species	Animal Species		
	Cattle	Pheasant	Ducks
alkali cordgrass	M	C,N	C
alkali sacaton	M	C	C
blue grama	H	--	--
buffalograss	H	--	--
Canada wildrye	H	C,N	C
heath aster	M	F	F
indiangrass	H	C,N	C
inland saltgrass	M	--	F
Japanese brome	M 1/	F 1/	F 1/
Pennsylvania smartweed	L	C,F	F
purple prairieclover	H	F	--
rushes	L	--	--
sedges	M	F	F
switchgrass	H 2/	C,F,N	C,F
tall dropseed	M	C	C
western ragweed	M	F	F
western wheatgrass	H	C,N	F 1/
willow baccharis	L	--	--

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

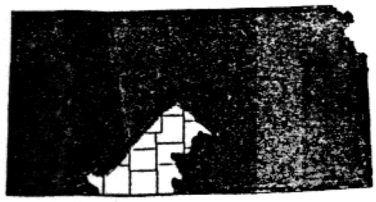
Reference:

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

SALINE SUBIRRIGATED

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 lowlands and stream terraces of major stream valleys.

4. Soils and Hydrological Characteristics:

a. These deep soils have loamy surface layers and loamy to clayey subsoils. They are somewhat poorly drained or poorly drained. These are saline-alkali soils that have formed in alluvial sediments. They have moderately slow or slow permeability. A water table usually occurs above 4 feet during the growing season.

b. The soils that characterize this site are:

Krier Lesho, saline Zenda, saline

c. The main limitations of this site are salinity, alkalinity, and common flooding. Wind and water erosion is not normally a hazard on this site. Siltation can be a problem when major floods occur.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie dominated by salt-tolerant species. Alkali cordgrass, alkali sacaton, inland saltgrass, and switchgrass make up about 65 percent of the potential vegetation.

Tall species such as big bluestem and indiangrass are common on the less saline portions of the site. Varying saline concentrations and the associated grass species give a patterned or mosaic appearance to much of this site. Forbs and woody species are not as prominent on this site as they are on most associated sites.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 95 percent			Forbs - 5 percent		Shrubs and Cacti - T
	25	alkali or prairie cordgrass		heath aster	willow baccharis
	5	big bluestem		Illinois bundleflower	
55	5	indiangrass	5	Louisiana sagewort	
	15	inland saltgrass		Pennsylvania smartweed	
	20	switchgrass		purple prairieclover	
	10	western wheatgrass		western ragweed	
	25	alkali sacaton			
	5	blue grama			
35	5	buffalograss			
	5	Canada wildrye			
	10	tall dropseed			
5		rushes			
		sedges			

c. Invaders common to this site are alkali muhly, Japanese brome, Kentucky bluegrass, kochia, russianthistle, sumpweed, tamarisk, and tumblegrass.

6. Management Implications:

This site occurs on bottomlands and stream terraces of major stream valleys. Most of the soils are wet on the surface throughout the spring and early summer.

Overgrazing of this site has little effect on species composition unless the overgrazing is excessive over a long period of time. However, the small amounts of big bluestem, indiangrass, and switchgrass can easily be reduced by overgrazing. Excessive use reduces the productivity of the site principally by reducing the vigor of the grasses.

Proper stocking and timely grazing are tools that help maintain this site in a productive condition. Grazing this site early in the growing season is important as the saline-alkali tolerant species tend to mature rapidly and become much less palatable late in the season.

Fire is a management tool that may be used to obtain better utilization especially on the alkali cordgrass.

7. Wildlife Considerations:

Utilizing this site with livestock in the late spring and early summer, then leaving the regrowth makes excellent winter habitat for a variety of wildlife including mammals, birds, insects, and reptiles.

This is preferred winter habitat for pheasant, waterfowl, and muskrat The muskrat are associated with the areas containing free water. The waterfowl also prefer the areas with free water but will utilize most of the site. They also use the site for food, nesting, and cover in the early spring if adequate vegetative cover is maintained. Several species of frogs, toads, and snakes utilize these wet areas.

8. Other Uses and Values:

Due to the wetness of this site, its uses for other than rangeland and wildlifeland are very limited.

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.

Growing Conditions	Total Air Dry Herbage Pounds/Acre	Total Air Dry Herbage Kilograms/Hectare
Favorable	1/	1/
Normal	6,000	6,700
Unfavorable	1/	1/

1/ The subirrigated condition tends to nullify the effects of precipitation.

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	5-7	2.0	23	5.0
Good	51-75	7-10	1.5	34	3.7
Fair	26-50	10-15	1.0	46	2.5
Poor	0-25	15+	.6	6+	1.5

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	Pheasant	Ducks
alkali cordgrass	M	C,N	C
alkali sacaton	M	C	C
blue grama	H	---	---
buffalograss	H	---	---
Canada wildrye	H	C,N	C
heath aster	M	F	F
indiangrass	H	C,N	C
inland saltgrass	M	---	F
Japanese brome	M 1/	F	F
Pennsylvania smartweed	L	C,F	F
purple prairieclover	H	F	---
rushes	L	---	C
sedges	M	F	C,F
switchgrass	H 2/	C,F,N	C,F
tall dropseed	M	C	C
western ragweed	M	F	F
western wheatgrass	H	C,N	C,F
willow baccharis	L	C	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.