

SHALLOW PRAIRIE
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 78
Central Rolling Red Plains



2. Climate:

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

3. Topography:

This site occurs on gently sloping to steep uplands.

4. Soils and Hydrological Characteristics:

- a. This site consists of loamy soils over calcareous silty shales with ledges of siltstone exposed in the sloping areas. The available water capacity is low.
- b. The soil that characterizes this site is Quinlan loam.
- c. The soils on this site are highly susceptible to wind and water erosion when overgrazed. These droughty soils are easily overgrazed during extended dry periods.

5. Climax Vegetation:

- a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem, little bluestem, and sideoats grama make up 60 to 65 percent of the total production. Other grasses make up 20 to 25 percent. Perennial forbs make up the remaining 10 percent.

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> | | |
|---|----|---------------------------|-----------------------------|----|---|
| 20 | 15 | big or sand bluestem | pricklypear | | |
| | 5 | Canada wildrye | | | |
| | 5 | indiangrass | | | |
| | 5 | switchgrass | | | |
| 50 | 45 | little bluestem | | 10 | |
| | 15 | sideoats grama | | | |
| 10 | 5 | blue grama | | | ashy goldenrod catclaw sensitivebriar dotted gayfeather heath aster Illinois bundleflower Louisiana sagewort maximilian sunflower purple poppymallow purple prairieclover upright prairieconeflower western ragweed yarrow |
| | 5 | buffalograss | | | |
| | 5 | hairy grama | | | |
| 10 | 5 | sand dropseed | | | |
| | 5 | scribner panicum | | | |
| | 5 | tall dropseed | | | |
| | 5 | western wheatgrass | | | |

Invaders common to this site are annual broomweed, common sunflower, Japanese brome, sandbur, silver bluestem, threeawns, tumblegrass, and windmillgrass.

6. Management Implications:

This site is generally in a landscape position preferred by most grazing animals during the growing season. Good grazing management and livestock distribution aids are necessary to maintain the site in its most productive condition.

High preference forage species such as big bluestem, indiangrass, catclaw sensitivebriar, Illinois bundleflower, and maximilian sunflower are difficult to maintain on this site with continuous season long grazing. With improved grazing management, these species may regain their position in the plant community.

Overgrazing with cattle rapidly reduces the tall grasses which are normally replaced by an increase in little bluestem and sideoats grama. Continued overuse may eliminate the little bluestem and sideoats grama. Blue grama, buffalograss, silver bluestem, dropseeds, threeawns, and annual grasses will normally dominate this site with continued overgrazing.

Little bluestem and sideoats grama are persistent on this site. They will normally increase with grazing management that includes proper use and periodic rests during the growing season. The taller species will recover with good grazing management, especially where remnant plants have survived.

7. Wildlife Considerations

When maintained in good to excellent condition, this site has a good grass cover and a good selection of forbs preferred by wildlife. The lack of woody cover and the drought tendencies of this site tend to discourage most wildlife species from making this site their permanent residence. Quail, deer, rabbits, songbirds, and other small animals frequently utilize this site for feeding and loafing.

The lack of woody cover and the sloping to rolling topography of this site attracts frequent visits by such predators as hawks, owls, and coyotes.

8. Other Uses and Values:

The somewhat droughty nature of this site and its shallow soils are factors that have kept most of this site in rangeland. Most of the soils of this site are too shallow for cropland.

Some housing and commercial development have occurred on this site, but this, too, is limited by the shallow soils.

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 | 2,400-3,000 | 2,690-3,360 |
| Normal | 1,500-2,400 | 1,680-2,690 |
| Unfavorable | 800-1,500 | 900-1,680 |

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 | 15-20 | .7 | 6-8 | 1.7 |
| Good | 51-75 | 20-28 | .55 | 8-12 | 1.35 |
| Fair | 26-50 | 28-40 | .35 | 12-18 | .85 |
| Poor | 0-25 | 40+ | .2 | 18+ | .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 | Deer | Quail |
| big or sand bluestem | H | C | C,N |
| blue grama | H | F | --- |
| catclaw sensitivebriar | H | F | F |
| common sunflower | L | --- | C,F |
| dotted gayfeather | M | F | --- |
| heath aster | M | F | C |
| Illinois bundleflower | H | F | F |
| indiangrass | H | C | C,N |
| Japanese brome | M <u>1/</u> | F <u>1/</u> | F <u>1/</u> |
| little bluestem | H | C | C,N |
| Louisiana sagewort | M | --- | F |
| maximilian sunflower | H | F | C,F |
| sand dropseed | M | --- | C |
| sideoats grama | H | --- | C |
| switchgrass | H <u>2/</u> | C | C,F,N |
| tall dropseed | M | --- | C,N |
| western ragweed | M | F | C,F |
| windmillgrass | M | --- | --- |

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

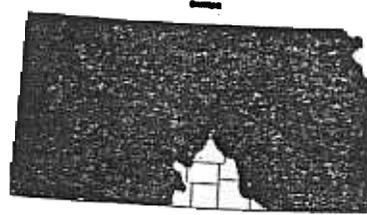
Reference:

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

SHALLOW PRAIRIE
KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 80A
Central Rolling Red Prairies



2. Climate:

See climate for LRA 80A
(Filed in the front of Section II-E)

3. Topography:

This site occurs on gently sloping to steep uplands.

4. Soils and Hydrological Characteristics:

a. This site consists of loamy soils over calcareous, silty shales with ledges of siltstone exposed in the sloping areas. The available water capacity is low.

b. The soils that characterize this site are:

Quinlan loam

Lucien loam

c. The soils on this site are highly susceptible to wind and water erosion when overgrazed. These droughty soils are easily overgrazed during extended dry periods.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem, indiangrass, little bluestem, and sideoats grama make up 70 to 75 percent of the total production. Other grasses make up 15 to 20 percent. Perennial forbs make up the remaining 10 percent.

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> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|---------------------------------|----|---|---|-------------|------------------------|-------------------|------------------------|-----------------------|--------------------|-----------------------|--------------------|----------------------|---------------------------|----------------------|---------------------------|-----------------|------------------|----|-------------|---|-------------|----|--------------------|----|----------------|---|------------|--|--------------|--|-------------|----|-----------------|--|--------------------|--|-----------------|--|----------------------|--|
| <table border="0"> <tr> <td style="padding-right: 10px;">15</td> <td>big or sand bluestem</td> <td rowspan="10" style="vertical-align: middle; padding-left: 20px;">10</td> <td rowspan="10" style="vertical-align: middle; padding-left: 20px;"> <table border="0"> <tr> <td style="padding-right: 10px;">ashy goldenrod</td> <td rowspan="10" style="vertical-align: middle; padding-left: 20px;">pricklypear</td> </tr> <tr> <td>catclaw sensitivebriar</td> </tr> <tr> <td>dotted gayfeather</td> </tr> <tr> <td>heath aster</td> </tr> <tr> <td>Illinois bundleflower</td> </tr> <tr> <td>Louisiana sagewort</td> </tr> <tr> <td>maximilian sunflower</td> </tr> <tr> <td>purple poppymallow</td> </tr> <tr> <td>purple prairieclover</td> </tr> <tr> <td>upright prairieconeflower</td> </tr> <tr> <td>western ragweed</td> </tr> <tr> <td>yarrow</td> </tr> </table> </td> </tr> <tr> <td style="padding-right: 10px;">25</td> <td>5 Canada wildrye</td> </tr> <tr> <td style="padding-right: 10px;">10</td> <td>indiangrass</td> </tr> <tr> <td style="padding-right: 10px;">5</td> <td>switchgrass</td> </tr> <tr> <td style="padding-right: 10px;">50</td> <td>45 little bluestem</td> </tr> <tr> <td style="padding-right: 10px;">15</td> <td>sideoats grama</td> </tr> <tr> <td style="padding-right: 10px;">5</td> <td>blue grama</td> </tr> <tr> <td></td> <td>buffalograss</td> </tr> <tr> <td></td> <td>hairy grama</td> </tr> <tr> <td style="padding-right: 10px;">10</td> <td>5 sand dropseed</td> </tr> <tr> <td></td> <td>5 scribner panicum</td> </tr> <tr> <td></td> <td>5 tall dropseed</td> </tr> <tr> <td></td> <td>5 western wheatgrass</td> </tr> </table> | 15 | big or sand bluestem | 10 | <table border="0"> <tr> <td style="padding-right: 10px;">ashy goldenrod</td> <td rowspan="10" style="vertical-align: middle; padding-left: 20px;">pricklypear</td> </tr> <tr> <td>catclaw sensitivebriar</td> </tr> <tr> <td>dotted gayfeather</td> </tr> <tr> <td>heath aster</td> </tr> <tr> <td>Illinois bundleflower</td> </tr> <tr> <td>Louisiana sagewort</td> </tr> <tr> <td>maximilian sunflower</td> </tr> <tr> <td>purple poppymallow</td> </tr> <tr> <td>purple prairieclover</td> </tr> <tr> <td>upright prairieconeflower</td> </tr> <tr> <td>western ragweed</td> </tr> <tr> <td>yarrow</td> </tr> </table> | ashy goldenrod | pricklypear | catclaw sensitivebriar | dotted gayfeather | heath aster | Illinois bundleflower | Louisiana sagewort | maximilian sunflower | purple poppymallow | purple prairieclover | upright prairieconeflower | western ragweed | yarrow | 25 | 5 Canada wildrye | 10 | indiangrass | 5 | switchgrass | 50 | 45 little bluestem | 15 | sideoats grama | 5 | blue grama | | buffalograss | | hairy grama | 10 | 5 sand dropseed | | 5 scribner panicum | | 5 tall dropseed | | 5 western wheatgrass | |
| 15 | big or sand bluestem | 10 | | | <table border="0"> <tr> <td style="padding-right: 10px;">ashy goldenrod</td> <td rowspan="10" style="vertical-align: middle; padding-left: 20px;">pricklypear</td> </tr> <tr> <td>catclaw sensitivebriar</td> </tr> <tr> <td>dotted gayfeather</td> </tr> <tr> <td>heath aster</td> </tr> <tr> <td>Illinois bundleflower</td> </tr> <tr> <td>Louisiana sagewort</td> </tr> <tr> <td>maximilian sunflower</td> </tr> <tr> <td>purple poppymallow</td> </tr> <tr> <td>purple prairieclover</td> </tr> <tr> <td>upright prairieconeflower</td> </tr> <tr> <td>western ragweed</td> </tr> <tr> <td>yarrow</td> </tr> </table> | | ashy goldenrod | pricklypear | catclaw sensitivebriar | dotted gayfeather | heath aster | Illinois bundleflower | Louisiana sagewort | maximilian sunflower | purple poppymallow | purple prairieclover | upright prairieconeflower | western ragweed | yarrow | | | | | | | | | | | | | | | | | | | | | | | |
| ashy goldenrod | pricklypear | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| catclaw sensitivebriar | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dotted gayfeather | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| heath aster | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Illinois bundleflower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Louisiana sagewort | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| maximilian sunflower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| purple poppymallow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| purple prairieclover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| upright prairieconeflower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| western ragweed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| yarrow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 5 Canada wildrye | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | indiangrass | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | switchgrass | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 45 little bluestem | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | sideoats grama | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | blue grama | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | buffalograss | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | hairy grama | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 5 sand dropseed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 scribner panicum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 tall dropseed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 western wheatgrass | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

c. Invaders common to this site are annual broomweed, common sunflower, Japanese brome, sandbur, silver bluestem, threeawns, tumblegrass, and windmillgrass.

6. Management Implications:

This site is generally in a landscape position preferred by most grazing animals during the growing season. Good grazing management and livestock distribution aids are necessary to maintain the site in its most productive condition.

High preference forage species such as big bluestem, indiangrass, catclaw sensitivebriar, Illinois bundleflower, and maximilian sunflower are difficult to maintain on this site with continuous season long grazing. With improved grazing management, these species may regain their position in the plant community.

Overgrazing with cattle rapidly reduces the tall grasses which are normally replaced by an increase in little bluestem and sideoats grama. Continued overuse may eliminate the little bluestem and sideoats grama. Blue grama, buffalograss, silver bluestem, dropseeds, threeawns, and annual grasses will normally dominate this site with continued overgrazing.

Little bluestem and sideoats grama are persistent on this site. They will normally increase with grazing management that includes proper use and periodic rests during the growing season. The taller species will recover with good grazing management, especially where remnant plants have survived.

7 Wildlife Considerations:

When maintained in good to excellent condition, this site has a good grass cover and a good selection of forbs preferred by wildlife. The lack of woody cover and the drought tendencies of this site tend to discourage most wildlife species from making this site their permanent residence. Quail, deer, rabbits, songbirds, and other small animals frequently utilize this site for feeding and loafing.

The lack of woody cover and the sloping to rolling topography of this site attracts frequent visits by such predators as hawks, owls, and coyotes.

8. Other Uses and Values:

The somewhat droughty nature of this site and its shallow soils are factors that have kept most of this site in rangeland. Most of the soils of this site are too shallow for cropland.

Some housing and commercial development have occurred on this site, but this, too, is limited by the shallow soils.

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 | 2,800-3,600 | 3,140-4,030 |
| Normal | 2,000-2,800 | 2,240-3,140 |
| Unfavorable | 1,400-2,000 | 1,570-2,240 |

10. Guide to Initial Stocking Rates:

| <u>Range Condition</u> | <u>Percent Climax Vegetation</u> | <u>Acres/AU Yearlong</u> | <u>AU Months Per Acre</u> | <u>Hectares/AU Yearlong</u> | <u>AUM's per Hectare</u> |
|------------------------|----------------------------------|--------------------------|---------------------------|-----------------------------|--------------------------|
| Excellent | 76-100 | 12-15 | .9 | 5-6 | 2.2 |
| Good | 51-75 | 15-20 | .7 | 6-8 | 1.7 |
| Fair | 26-50 | 20-32 | .5 | 8-14 | 1.2 |
| Poor | 0-25 | 32+ | .3 | 14+ | .7 |

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 | Deer | Quail |
| big or sand bluestem | H | C | C,N |
| blue grama | H | F | --- |
| catclaw sensitivebriar | H | F | F |
| common sunflower | L | --- | C,F |
| dotted gayfeather | M | F | --- |
| heath aster | M | F | C |
| Illinois bundleflower | H | F | F |
| indiangrass | H | C | C,N |
| Japanese brome | M <u>1/</u> | F <u>1/</u> | F <u>1/</u> |
| little bluestem | H | C | C,N |
| Louisiana sagewort | M | --- | F |
| maximilian sunflower | H | F | C,F |
| sand dropseed | M | --- | C |
| sideoats grama | H | --- | C |
| switchgrass | H <u>2/</u> | C | C,F,N |
| tall dropseed | M | --- | C,N |
| western ragweed | M | --- | C,F |
| windmillgrass | M | --- | --- |

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.