

# United States Department of Agriculture Natural Resources Conservation Service

## Ecological Site Description

**Site Type:** Rangeland

**Site Name:** Loamy 12-17" Precipitation Zone

**Site ID:** R067XY122WY

**Major Land Resource Area:** 67 – North Central High Plains

### Physiographic Features

This site will usually occur in upland positions on nearly level to moderately sloping land.

**Landform:** hill sides, alluvial fans, ridges & stream terraces

**Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	4000	6500
<b>Slope (percent):</b>	0	30
<b>Water Table Depth (inches):</b>	none	none
<b>Flooding:</b>		
<b>Frequency:</b>	none	none
<b>Duration:</b>	none	none
<b>Ponding:</b>		
<b>Depth (inches):</b>	0	0
<b>Frequency:</b>	none	none
<b>Duration:</b>	none	none
<b>Runoff Class:</b>	negligible	high

### Climatic Features

Annual precipitation ranges from 12-17 inches per year. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation. Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

Wind speed averages about 8 mph, ranging from 10 mph during the spring to 7 mph during late summer. Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 75 mph.

Growth of native cool-season plants begins about April 1 and continues to about July 1. Native warm-season plants begin growth about May 15 and continue to about August 15. Green up of cool season plants may occur in September and October of most years.

The following information is from the “Lusk 2SW” climate station.

	<u>Minimum</u>	<u>Maximum</u>
<b>Frost-free period (days):</b>	74	148
<b>Freeze-free period (days):</b>	101	181
<b>Mean Annual Precipitation (inches):</b>	12	17

Mean annual precipitation: 15.71 inches

Mean annual air temperature: 45.2 °F (31.0°F Avg. Min. – 59.3°F Avg. Max.)

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at <http://www.wcc.nrcs.usda.gov/> website. Other climate station(s) representative of this precipitation zone include” Chugwater, Wheatland 4N, Cheyenne AP, and Scottsbluff WSO AP”.

## Influencing Water Features

<b>Wetland Description:</b>	<u>System</u>	<u>Subsystem</u>	<u>Class</u>	<u>Sub-class</u>
None	None	None	None	None

**Stream Type:** None (Rosgen System)

## Representative Soil Features

The soils of this site are very deep to moderately deep (greater than 20” to bedrock), well drained and moderately permeable. Layers of the soil most influential to the plant community varies from 3-10 inches. These layers consist of the A horizon with very fine sandy loam, loam or silt loam texture and may also include the upper few inches of the B horizon with clay loam texture.

Major Soil Series correlated to this site include: Albinas, Ascalon, Nucla, Evanston, Recosa, Wages, Alliance, Altvan, Bridget, Sidney, Creighton, Duroc, Goshen, Keith, Rosebud, Satanta, Tripp, Bridegeport, Ulysses, Oglala, Cheyenne, Havre.

Other Soil Series correlated to this site include: Weed, Ipson, Mitchell, Poposhia, Trimad, Wolf, Featherleggs, Coopers, Cedak, Snilloc and Selpats.

**Parent Material Kind:** alluvium and residuum

**Parent Material Origin:** sandstone, shale

**Surface Texture:** loam, silt loam, very fine sandy loam

**Surface Texture Modifier:** none

**Subsurface Texture Group:** loam

**Surface Fragments ≤ 3” (% Cover):** 0

**Surface Fragments > 3” (%Cover):** typically 0, occasionally up to 10

**Subsurface Fragments ≤ 3” (% Volume):** typically 0, occasionally up to 15

**Subsurface Fragments > 3” (% Volume):** typically 0, occasionally up to 10

	<u>Minimum</u>	<u>Maximum</u>
<b>Drainage Class:</b>	moderately well	well
<b>Permeability Class:</b>	moderately slow	moderate
<b>Depth (inches):</b>	20	>60
<b>Electrical Conductivity (mmhos/cm) ≤20”:</b>	0	4
<b>Sodium Absorption Ratio ≤20”:</b>	0	5
<b>Soil Reaction (1:1 Water) ≤20”:</b>	6.6	8.4
<b>Soil Reaction (0.1M CaCl2) ≤20”:</b>	N/A	N/A
<b>Available Water Capacity (inches) ≤30”:</b>	3.0	6.3
<b>Calcium Carbonate Equivalent (percent) ≤20”:</b>	0	10

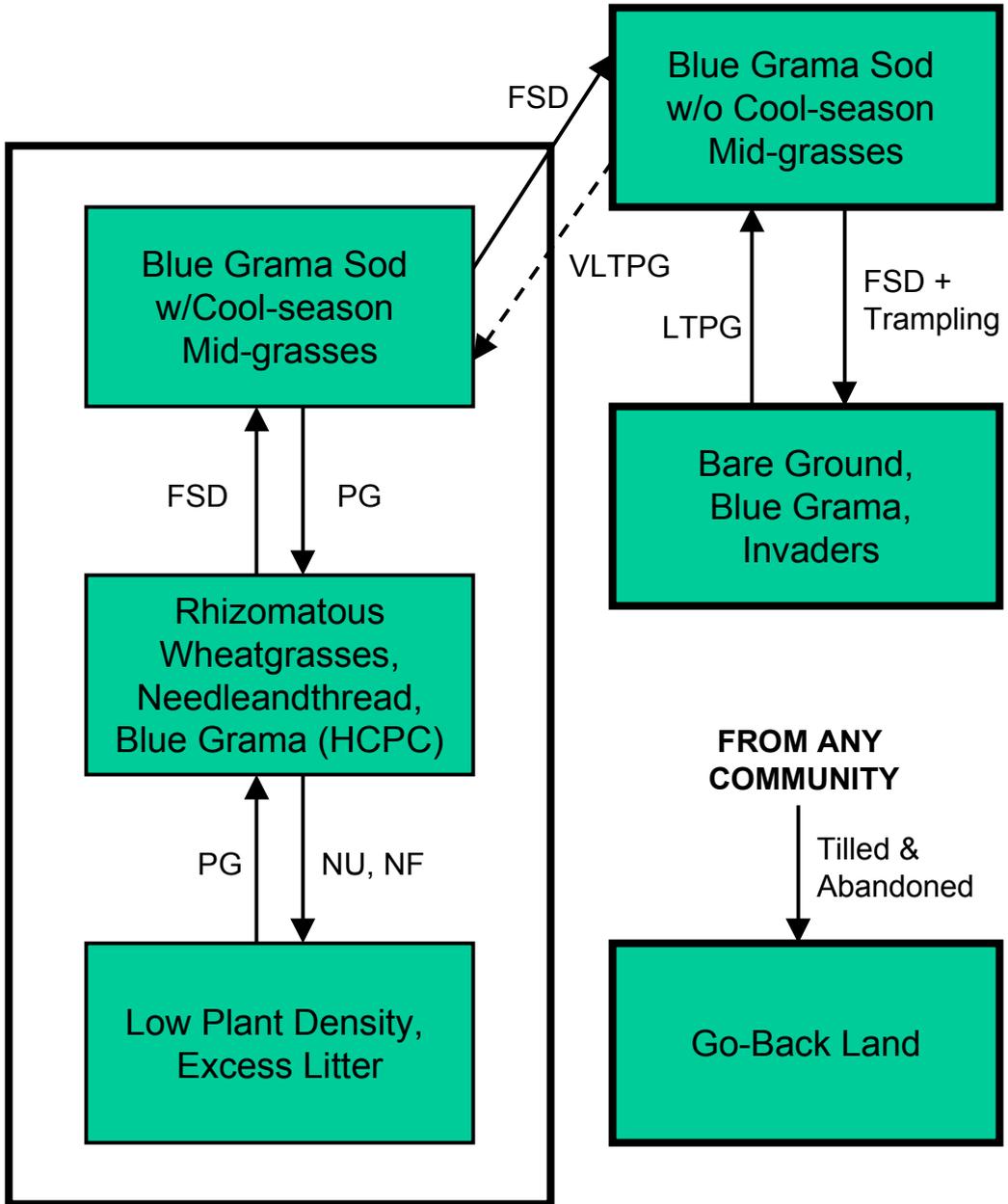
## **Plant Communities**

### **Ecological Dynamics of the Site**

As this site deteriorates from frequent and severe grazing, grasses such as green needlegrass, needleandthread, and eventually western wheatgrass will decrease in frequency and production. Grasses such as blue grama and threadleaf sedge increase. Under continued frequent and severe defoliation, the plant community will eventually become sod-bound. Over the long-term, in combination with trampling, this sod will ultimately become broken with areas of bare ground developing and species such as cheatgrass and broom snakeweed invading.

The historic climax plant community (description follows the State and Transition Model Diagram) has been determined by study of rangeland relic areas, or areas protected from excessive disturbance. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

The following is a State and Transition Model Diagram that illustrates the common plant communities that can occur on the site and the transitions between these communities. The ecological processes will be discussed in more detail in the plant community narratives following the diagram.



**FSD** - Frequent and Severe Defoliation of the Cool-season Mid-grasses.

**HCPC** - Historic Climax Plant Community

**LTPG** - Long-term Prescribed Grazing.

**NU, NF** - No Use, No Fire.

**PG** - Prescribed Grazing (proper stocking rates with adequate recovery periods during the growing season).

**VLTPG** - Very Long-term Prescribed Grazing (could take generations)

## Plant Community Composition and Group Annual Production

## Rhizomatous Wheatgrasses/Needleandthread/Blue Grama Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 1300		
<b>GRASSES AND GRASS-LIKES</b>					
<b>COOL-SEASON MID-GRASSES</b>			<b>1</b>	<b>390 - 520</b>	<b>30 - 40</b>
needleandthread	Hesperostipa comata	HECO26	1	325 - 390	25 - 30
green needlegrass	Nassella viridula	NAVI4	1	65 - 130	5 - 10
<b>RHIZOMATOUS WHEATGRASSES</b>			<b>2</b>	<b>260 - 325</b>	<b>20 - 25</b>
western wheatgrass	Pascopyrum smithii	PASM	2	260 - 325	20 - 25
thickspike wheatgrass	Elymus lanceolatus	ELLA3	2	0 - 130	0 - 10
<b>WARM-SEASON SHORT GRASSES</b>			<b>3</b>	<b>130 - 195</b>	<b>10 - 15</b>
blue grama	Bouteloua gracilis	BOGR2	3	130 - 195	10 - 15
<b>WARM-SEASON MID-GRASSES</b>			<b>4</b>	<b>65 - 130</b>	<b>5 - 10</b>
little bluestem	Schizachyrium scoparium	SCSC	4	65 - 130	5 - 10
<b>MISCELLANEOUS GRASSES/GRASS-LIKES</b>			<b>5</b>	<b>130 - 195</b>	<b>10 - 15</b>
buffalograss	Buchloe dactyloides	BUDA	5	0 - 65	0 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	5	0 - 65	0 - 5
prairie junegrass	Koeleria macrantha	KOMA	5	0 - 65	0 - 5
Sandberg bluegrass	Poa secunda	POSE	5	0 - 65	0 - 5
sideoats grama	Bouteloua curtipendula	BOCU	5	0 - 65	0 - 5
threadleaf sedge	Carex filifolia	CAFI	5	0 - 65	0 - 5
threeawns	Aristida spp.	ARIST	5	0 - 26	0 - 2
perennial grasses/grass-likes (native)		2GRAM	5	0 - 65	0 - 5
<b>FORBS</b>			<b>6</b>	<b>65 - 195</b>	<b>5 - 15</b>
American vetch	Vicia americana	VIAM	6	0 - 26	0 - 2
biscuitroots	Lomatium spp.	LOMAT	6	0 - 26	0 - 2
breadroots	Pediomelum spp.	PEDIO2	6	0 - 26	0 - 2
buckwheats	Eriogonum spp.	ERIOG	6	0 - 26	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	6	0 - 26	0 - 2
deathcamas	Zigadenus venenosus	ZIVE	6	0 - 26	0 - 2
dotted gayfeather	Liatris punctata	LIPU	6	0 - 26	0 - 2
fringed sagewort	Artemisia frigida	ARFR4	6	0 - 26	0 - 2
green sagewort	Artemisia campestris	ARCA12	6	0 - 26	0 - 2
hairy goldaster	Heterotheca villosa	HEVI4	6	0 - 26	0 - 2
larkspurs	Delphinium spp.	DELPH	6	0 - 26	0 - 2
milkvetches	Astragalus spp.	ASTRA	6	0 - 26	0 - 2
penstemons	Penstemon spp.	PENST	6	0 - 26	0 - 2
prairie coneflower	Ratibida columnifera	RACO3	6	0 - 26	0 - 2
purple coneflower	Echinacea angustifolia	ECAN2	6	0 - 26	0 - 2
purple prairie clover	Dalea purpurea	DAPU5	6	0 - 26	0 - 2
scarlet gaura	Gaura coccinea	GACO5	6	0 - 26	0 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	6	0 - 26	0 - 2
scurfpeas	Psoraleidum spp.	PSORA2	6	0 - 26	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	6	0 - 26	0 - 2
western wallflower	Erysimum capitatum	ERCA14	6	0 - 26	0 - 2
white prairie clover	Dalea candida	DACA7	6	0 - 26	0 - 2
wild onion	Allium textile	ALTE	6	0 - 26	0 - 2
other perennial forbs (native)		2FP	6	0 - 65	0 - 5
<b>SHRUBS</b>			<b>7</b>	<b>65 - 130</b>	<b>5 - 10</b>
big sagebrush	Artemisia tridentata	ARTR2	7	0 - 65	0 - 5
winterfat	Krascheninnikovia lanata	KRLA2	7	0 - 65	0 - 5
Arkansas rose	Rosa arkansana	ROAR3	7	0 - 26	0 - 2
broom snakeweed	Gutierrezia sarothrae	GUSA2	7	0 - 26	0 - 2
fourwing saltbush	Atriplex canescens	ATCA2	7	0 - 26	0 - 2
green rabbitbrush	Chrysothamnus viscidiflorus	CHVI8	7	0 - 26	0 - 2
plains pricklypear	Opuntia polyacantha	OPPO	7	0 - 26	0 - 2
rubber rabbitbrush	Ericameria nauseosa	ERNA10	7	0 - 26	0 - 2
other shrubs and half-shrubs (native)		2SHRUB	7	0 - 65	0 - 5

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors.

## Plant Community Composition and Group Annual Production

## Rhizomatous Wheatgrasses/Needleandthread/Blue Grama Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 1500		
<b>GRASSES AND GRASS-LIKES</b>					
<b>COOL-SEASON MID-GRASSES</b>			<b>1</b>	<b>450 - 600</b>	<b>30 - 40</b>
needleandthread	Hesperostipa comata	HECO26	1	375 - 450	25 - 30
green needlegrass	Nassella viridula	NAVI4	1	75 - 150	5 - 10
<b>RHIZOMATOUS WHEATGRASSES</b>			<b>2</b>	<b>300 - 375</b>	<b>20 - 25</b>
western wheatgrass	Pascopyrum smithii	PASM	2	300 - 375	20 - 25
thickspike wheatgrass	Elymus lanceolatus	ELLA3	2	0 - 150	0 - 10
<b>WARM-SEASON SHORT GRASSES</b>			<b>3</b>	<b>150 - 225</b>	<b>10 - 15</b>
blue grama	Bouteloua gracilis	BOGR2	3	150 - 225	10 - 15
<b>WARM-SEASON MID-GRASSES</b>			<b>4</b>	<b>75 - 150</b>	<b>5 - 10</b>
little bluestem	Schizachyrium scoparium	SCSC	4	75 - 150	5 - 10
<b>MISCELLANEOUS GRASSES/GRASS-LIKES</b>			<b>5</b>	<b>150 - 225</b>	<b>10 - 15</b>
buffalograss	Buchloe dactyloides	BUDA	5	0 - 75	0 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	5	0 - 75	0 - 5
prairie junegrass	Koeleria macrantha	KOMA	5	0 - 75	0 - 5
Sandberg bluegrass	Poa secunda	POSE	5	0 - 75	0 - 5
sideoats grama	Bouteloua curtipendula	BOCU	5	0 - 75	0 - 5
threadleaf sedge	Carex filifolia	CAFI	5	0 - 75	0 - 5
threeawns	Aristida spp.	ARIST	5	0 - 30	0 - 2
perennial grasses/grass-likes (native)		2GRAM	5	0 - 75	0 - 5
<b>FORBS</b>			<b>6</b>	<b>75 - 225</b>	<b>5 - 15</b>
American vetch	Vicia americana	VIAM	6	0 - 30	0 - 2
biscuitroots	Lomatium spp.	LOMAT	6	0 - 30	0 - 2
breadroots	Pediomelum spp.	PEDIO2	6	0 - 30	0 - 2
buckwheats	Eriogonum spp.	ERIOG	6	0 - 30	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	6	0 - 30	0 - 2
deathcamas	Zigadenus venenosus	ZIVE	6	0 - 30	0 - 2
dotted gayfeather	Liatris punctata	LIPU	6	0 - 30	0 - 2
fringed sagewort	Artemisia frigida	ARFR4	6	0 - 30	0 - 2
green sagewort	Artemisia campestris	ARCA12	6	0 - 30	0 - 2
hairy goldaster	Heterotheca villosa	HEVI4	6	0 - 30	0 - 2
larkspurs	Delphinium spp.	DELPH	6	0 - 30	0 - 2
milkvetches	Astragalus spp.	ASTRA	6	0 - 30	0 - 2
penstemons	Penstemon spp.	PENST	6	0 - 30	0 - 2
prairie coneflower	Ratibida columnifera	RACO3	6	0 - 30	0 - 2
purple coneflower	Echinacea angustifolia	ECAN2	6	0 - 30	0 - 2
purple prairie clover	Dalea purpurea	DAPU5	6	0 - 30	0 - 2
scarlet gaura	Gaura coccinea	GACO5	6	0 - 30	0 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	6	0 - 30	0 - 2
scurfpeas	Psoraleidum spp.	PSORA2	6	0 - 30	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	6	0 - 30	0 - 2
western wallflower	Erysimum capitatum	ERCA14	6	0 - 30	0 - 2
white prairie clover	Dalea candida	DACA7	6	0 - 30	0 - 2
wild onion	Allium textile	ALTE	6	0 - 30	0 - 2
other perennial forbs (native)		2FP	6	0 - 75	0 - 5
<b>SHRUBS</b>			<b>7</b>	<b>75 - 150</b>	<b>5 - 10</b>
big sagebrush	Artemisia tridentata	ARTR2	7	0 - 75	0 - 5
winterfat	Krascheninnikovia lanata	KRLA2	7	0 - 75	0 - 5
Arkansas rose	Rosa arkansana	ROAR3	7	0 - 30	0 - 2
broom snakeweed	Gutierrezia sarothrae	GUSA2	7	0 - 30	0 - 2
fourwing saltbush	Atriplex canescens	ATCA2	7	0 - 30	0 - 2
green rabbitbrush	Chrysothamnus viscidiflorus	CHVI8	7	0 - 30	0 - 2
plains pricklypear	Opuntia polyacantha	OPPO	7	0 - 30	0 - 2
rubber rabbitbrush	Ericameria nauseosa	ERNA10	7	0 - 30	0 - 2
other shrubs and half-shrubs (native)		2SHRUB	7	0 - 75	0 - 5

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors.

**Plant Community Narratives**

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they probably are the most prevalent and repeatable plant communities. The plant composition table shown above has been developed from the best available knowledge at the time of this revision. As more data is collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as “Desired Plant Communities”. According to the USDA – NRCS National Range and Pasture Handbook, Desired Plant Communities will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

**Rhizomatous Wheatgrasses, Needleandthread, Blue Grama Plant Community**

This is the interpretive plant community and is considered to be the Historic Climax Plant Community (HCPC). This plant community evolved with grazing by large herbivores and is well suited for grazing by domestic livestock and can be found on areas that are grazed and where the grazed plants receive adequate periods of rest during the growing season in order to recover. Historically, fires likely occurred infrequently. The potential vegetation is about 75-90% grasses, 5-15% forbs, and 5-10% woody plants. This community is dominated by cool season mid-grasses. The major grasses include rhizomatous wheatgrasses (predominantly western with some thickspike), needleandthread, and blue grama. Other grasses include green needlegrass, little bluestem, prairie junegrass, and Sandberg bluegrass. Note, green needlegrass is found in greater abundance in the 15-17” precipitation zone and on finer textured soils. A variety of forbs and half-shrubs also occur, as shown in the preceding table. Shrubs are not abundant. Plant diversity is high.

The total annual production (lb./ac., air-dry weight) of this plant community during an average year is: 12-14” P.Z.

	LOW	AVG	HIGH
GRASS/GRASSLIKE	675	1170	1580
FORB	55	100	130
SHRUB	20	30	45
TREE	0	0	0
TOTAL	750	1300	1750

15-17”P.Z.

	LOW	AVG	HIGH
GRASS/GRASSLIKE	900	1345	1800
FORB	75	115	150
SHRUB	25	40	50
TREE	0	0	0
TOTAL	1000	1500	2000

The following is the growth curve of this plant community expected during an average year:

Growth Curve Number:

Growth Curve Name:

Growth Curve Description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	2	13	25	35	10	5	10	0	0	0

(monthly percentages of total annual growth)

This plant community is stable and well adapted to the Northern Great Plains climatic conditions. Litter is properly distributed with very little movement off-site and natural plant mortality is very low. The diversity in plant species allows for high dry tolerance. This is a sustainable plant community in terms of soil stability, watershed function, and biologic integrity.

Transitions or pathways leading to other plant communities are as follows:

- Frequent and severe defoliation, during the growing season of the cool-season mid-grasses, will move this plant community initially towards the *Blue Grama Sod w/ Cool-season Mid-grasses Plant Community*. Over a period of years, plant species less tolerant to frequent and severe defoliation will begin to decrease, and those more tolerant will begin to increase.
- No use and no fire will move this plant community towards the *Low Plant Density, Excess Litter Plant Community*. Initially, excess litter begins to build-up. Eventually native plant density begins to decrease and weeds and introduced species may begin to invade.

### **Blue Grama Sod w/ Cool-Season Mid-Grasses Plant Community**

This plant community typically develops, over a period of several years, under frequent and severe defoliation during the growing season of the cool-season mid-grasses. It typically is made up of sod forming grasses with only remnants of cool-season mid-grasses remaining. The dominant grasses are blue grama and western wheatgrass. Needleandthread is reduced. Green needlegrass and little bluestem are nearly absent. Other grasses present include Sandberg bluegrass and prairie junegrass. Significant forbs include scarlet globemallow, wild onion, death camas, slim-flowered scurfpea, and skeletonweed.

Compared to the Historic Climax Plant Community, blue grama and threadleaf sedge has increased. Green needlegrass, little bluestem, and western wheatgrass have decreased. Palatable forbs and half-shrubs such as dotted gayfeather, penstemon, American vetch, and winterfat have decreased. Fringed sagewort and broom snakeweed are increasing. Plant diversity is moderate.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 900 pounds per acre during an average year, but it can range from about 600 pounds per acre in unfavorable years to about 1,200 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 1,100 pounds per acre during an average year, but it can range from about 750 pounds per acre in unfavorable years to about 1,450 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth Curve Number:

Growth Curve Name:

Growth Curve Description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	1	9	20	30	20	15	5	0	0	0

(monthly percentages of total annual growth)

This plant community is stable and can become very resistant to change depending on the degree to which the sod has formed. Changes in grazing management may take a long time to affect the plant composition.

Soil erosion is low; infiltration is reduced, and overland flow is increased because of the sod-bound condition. This explains the lowered production and the off-site gully erosion that often occurs.

Transitions or pathways leading to other plant communities are as follows:

- Continued frequent and severe defoliation, throughout the growing season of the cool-season mid-grasses, will move this plant community towards the *Blue Grama Sod without Cool-season Mid-grasses Plant Community*.
- Prescribed grazing will move this plant community towards the *Rhizomatous Wheatgrasses, Needleandthread, Blue Grama Plant Community (HCPC)*. This may take many years depending on the degree to which the sod is formed and the amount of cool-season mid-grasses and palatable forbs remaining. Grazing land mechanical treatment, such as chiseling, may accelerate this transition.

### Low Plant Density, Excess Litter Plant Community

This plant community developed under the absence of grazing and fire. At first, excessive litter builds up shading out some plants. Other plants become decadent with low vigor. Bunch grasses often develop dead centers. Eventually, the interspaces between plants increase in size leaving more soil surface exposed. Organic matter oxidizes in the air rather than being incorporated into the soil. The dominant plants tend to be somewhat similar to those found in the Historic Climax Plant Community. Weedy species, cool-season grasses, and sedges have increased. Blue grama has decreased. Rodent activity may have increased resulting in increased soil disturbance. Kentucky bluegrass tends to invade this community. Cactus and sagewort may increase. Noxious weeds such as Dalmatian toadflax, leafy spurge, or Canada thistle may invade if a seed source is present. Plant diversity is moderate to high.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 1,200 pounds per acre during an average year, but it can range from about 800 pounds per acre in unfavorable years to about 1,600 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 1,400 pounds per acre during an average year, but it can range from about 950 pounds per acre in unfavorable years to about 1,850 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth Curve Number:

Growth Curve Name:

Growth Curve Description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	10	30	40	5	5	10	0	0	0

(monthly percentages of total annual growth)

This plant community is not resistant to change. The introduction of grazing or fire quickly changes the plant community. It is somewhat more vulnerable to severe disturbance than the HCPC. Soil erosion is accelerated because of increased bare ground. Water flow patterns and pedestalling are obvious. Infiltration is reduced and runoff is increased.

Transitions or pathways leading to other plant communities are as follows:

- Prescribed grazing and/or fire will move this plant community towards the *Rhizomatous Wheatgrasses, Needleandthread, Blue Grama Plant Community (HCPC)*. This can occur relatively fast.

**Blue Grama Sod w/o Cool-season Mid-grasses Plant Community**

This plant community develops under long-term frequent and severe defoliation. It is a dense sod, made up of primarily warm-season grasses. The cool-season mid-grasses have been eliminated. The dominant grass is blue grama. Other grasses include threadleaf sedge, buffalograss, and threeawns. The palatable forbs have been eliminated with only species such as scarlet globemallow, wild onion, death camas, slim-flowered scurfpea, and skeletonweed remaining.

Compared to the Historic Climax Plant Community, blue grama, threadleaf sedge, buffalograss, threeawns, fringed sagewort, pricklypear cactus, and broom snakeweed have increased. Needleandthread, western wheatgrass, green needlegrass, little bluestem, winterfat, and palatable perennial forbs have virtually been eliminated. Plant diversity is very low.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 500 pounds per acre during an average year, but it can range from about 350 pounds per acre in unfavorable years to about 650 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 700 pounds per acre during an average year, but it can range from about 500 pounds per acre in unfavorable years to about 900 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth Curve Number:

Growth Curve Name:

Growth Curve Description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	0	5	40	30	20	5	0	0	0

(monthly percentages of total annual growth)

Even with the best range management, this plant community is extremely resistant to change. This is because of the sod-bound condition and the fact that many of the plant species have been removed from the plant community. Oftentimes, a seed source is not readily available. Also, much of the precipitation is lost to runoff and is unavailable to the plants. While soil erosion is low, infiltration has been greatly decreased. Increased runoff typically causes off-site gully erosion.

Transitions or pathways leading to other plant communities are as follows:

- Continued frequent and severe defoliation combined with trampling can eventually move this plant community to *the Bare Ground, Blue grama, Invaders Plant Community*.
- Very long-term prescribed grazing may move this plant community towards the *Blue Grama Sod with Cool-season Mid-grasses Plant Community*. Without a seed source available this could take generations. Range or pasture planting may be the only option to return this to a productive condition in a realistic time frame.

**Bare Ground, Blue Grama, Invaders Plant Community**

This plant community occurs where the rangeland is grazed year-round, at high stock densities, such as in a feeding situation or a prairie dog town. Physical impact such as trampling, soil compaction, and trailing typically contribute to this transition. The plant composition is made up annuals with a few species of perennial forbs and grasses that are very tolerant to frequent and severe defoliation. The dominant grasses include threeawns, blue grama, buffalograss, and threadleaf sedge. Annual

grasses such as cheatgrass and sixweeks fescue have increased. The dominant perennial forbs include curlycup gumweed and hairy goldaster. Broom snakeweed, pricklypear cactus, and green sagewort are increasing.

Compared to the Historic Climax Plant Community, all perennial plants have been greatly reduced with only remnants of the most grazing tolerant species present. Plant diversity is very low if annuals and weedy species are not considered.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 500 pounds per acre during an average year, but it can range from about 350 pounds per acre in unfavorable years to about 650 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 700 pounds per acre during an average year, but it can range from about 450 pounds per acre in unfavorable years to about 950 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth Curve Number:

Growth Curve Name:

Growth Curve Description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	35	25	10	5	0	0	0

(monthly percentages of total annual growth)

This plant community is resistant to positive change because of the lack of perennial species present and the amount of annuals and invaders occupying the community. Planned rest periods during the growing season will improve the vigor of the plant species present and eventually reduce the amount of bare ground.

Soil erosion is very high compared to other potential plant communities because of the amount of bare ground. Soil erosion can alter the communities ability to ever recover to a level equal to it's original potential. Infiltration is very low and runoff is high because of a lack of litter and living plants. Mineral crusting magnifies the situation making much of the precipitation unavailable to the plants.

Transitions or pathways leading to other plant communities are as follows:

- Long-term prescribed grazing will move this plant community back towards *the Blue Grama w/o Cool-season Mid-grasses Plant Community*. The rate of this transition can be extremely variable depending on the species present and the availability of a seed source. This can take several years, even if the community is not significantly eroded. Range or pasture planting may be the only option to return this community to a productive condition in a realistic time frame.

**Go-back Land**

This plant community developed where cropland was abandoned, 20 to 50 years ago, with either no reseeding or reseeding to crested wheatgrass that was only marginally successful. This plant community is highly variable depending on level of soil disturbance, amount of erosion that has taken place, and past grazing management. The composition can include some remnant tame pasture grasses and a variety of pioneer perennial species. The dominant grasses include threeawn, sand dropseed, Sandberg bluegrass, cheatgrass, and sixweeks fescue. Other grasses may include crested wheatgrass, western wheatgrass, and needleandthread. Blue grama is typically absent. Forbs can include western sticktight, western ragweed, and sweetclover. Significant shrubs in this community include broom snakeweed and green rabbitbrush. Pricklypear cactus is typically absent. Plant diversity is low and production is highly variable.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 500 pounds per acre during an average year, but it can range from about 350 pounds per acre in unfavorable years to about 650 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 700 pounds per acre during an average year, but it can range from about 500 pounds per acre in unfavorable years to about 900 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth Curve Number:

Growth Curve Name:

Growth Curve Description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	40	25	10	5	0	0	0

(monthly percentages of total annual growth)

This plant community is not resistant to change and can deteriorate rapidly because of low plant diversity. Once disturbed, it will not recover rapidly. Soil erosion is moderate. While highly variable, infiltration is reduced, and runoff is increased. Range or pasture planting is typically the only option to return this community to a productive condition in a realistic time frame.

## Ecological Site Interpretations

### Animal Community – Wildlife Interpretations

**Rhizomatous Wheatgrasses, Needleandthread, Blue Grama Community (HCPC):** The predominance of grasses plus high forb diversity in this community favors large grazers such as pronghorn and elk. Suitable thermal and escape cover for mule deer is limited due to low shrub cover. White-tailed and black-tailed jackrabbit, badger, and coyote commonly use this community. This community also provides habitat for a wide array of smaller mammals, so diverse prey populations are available for raptors such as ferruginous and Swainson's hawks. Birds such as western kingbird, western meadowlark, lark bunting, and grasshopper sparrow will utilize this community for nesting and foraging. This community is especially favorable for ground-nesting birds because of the abundant residual vegetation available in the spring for nesting, escape and thermal cover.

**Blue Grama Sod w/ Cool-season Mid-grasses Community:** The reduction in taller grasses in this community results in decreased use by lark buntings and western meadowlarks. Use by long-billed curlew increases, provided there is standing water within ¼ mile. Killdeer, horned larks, and McCown's longspurs will also make significant use of this community. Pronghorn may forage in this community.

**Blue Grama Sod w/o Cool-season Mid-grasses Community:** This community provides limited foraging for antelope and other grazers. Ground-nesting birds favoring sparse vegetation may use this community. Long-billed curlews will use this community if standing water is present within ¼ mile. Generally, this is not a target vegetative community for wildlife habitat management.

**Bare Ground, Blue Grama, Invaders Community:** Sparse vegetation and greater amounts of bare ground provide suitable habitat for prairie dogs, horned larks and McCown's longspurs. However, a lack of complex vegetation structure and residual cover makes this community poor habitat in general for most ground-nesting birds and big game species. Burrowing owl may occur here if the community is occupied by prairie dogs. Pronghorn may find limited forage in this community.

**Low Plant Density, Excess Litter Community:** This community has low habitat value for most wildlife species. Horned larks may nest in this community. Prairie dogs and jackrabbits are frequent users of this community.

**Go-back Land:** The abundance and diversity of seed-producing annuals provides food for a variety of resident and migratory birds. Ring-necked pheasants and sharp-tailed grouse may benefit from this food source if the community is located relatively close to winter cover and cropland. McCown's longspurs and horned larks may nest in this type.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MCR 87 North

Common Name	Scientific Name	Symbol	Cattle	Sheep	Horses	Antelope	Deer	Elk
<b>GRASSES/GRASSLIKES</b>								
alkali bluegrass	<i>Poa juncifolia</i>	POJU	UDUD	NDNU	UDUD	UDUU	UDUU	DPDD
alkali cordgrass	<i>Spartina gracilis</i>	SPGR	UDPU	UPDU	UPDU	UDUU	UDUU	UDPU
alkali muhly	<i>Muhlenbergia asperifolia</i>	MUAS	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
alkali sacaton	<i>Sporobolus airoides</i>	SPAI	UDPU	UPDU	UPDU	UDUU	UDUU	UDPU
Baltic rush	<i>Juncus balticus</i>	JUBA	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
basin wildrye	<i>Leymus cinereus</i>	LECI4	DPDD	UPDU	DPDD	UDUU	UDUU	DPDD
big bluestem	<i>Andropogon gerardii</i>	ANGE	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
blowout grass	<i>Redfieldia flexuosa</i>	REFL	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
blue grama	<i>Bouteloua gracilis</i>	BOGR2	UDPU	UDPU	UDPU	UDUU	UDUU	UDUU
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
bluegrasses	<i>Poa spp.</i>	POA	UPUU	UPND	UPUU	UPND	UPND	UPUU
bluejoint reedgrass	<i>Calamagrostis canadensis</i>	CACA4	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
buffalograss	<i>Buchloe dactyloides</i>	BUDA	UDPU	UDPU	UDPU	UDUU	UDUU	UDUU
bulrush	<i>Scirpus spp.</i>	SCIRP	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Canada wildrye	<i>Elymus canadensis</i>	ELCA4	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
Fendler's threeawn	<i>Aristida purpurea var. fendleriana</i>	ARPUF	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
foxtail barley	<i>Hordeum jubatum</i>	HOJU	NDNN	NDNN	NDNN	NDNN	NDNN	NDNN
green needlegrass	<i>Nassella viridula</i>	NAV14	DPPD	UPDU	DPPD	UDUU	UDUU	DPPD
hairy grama	<i>Bouteloua hirsuta</i>	BOHI2	UDPU	UDPU	UDPU	UDUU	UDUU	UDUU
Indian ricegrass	<i>Achnatherum hymenoides</i>	ACHY	DPPD	UPDU	DPPD	UDUU	UDUU	DPPD
Indiangrass	<i>Sorghastrum nutans</i>	SONU2	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
inland saltgrass	<i>Distichlis spicata</i>	DISP	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
little bluestem	<i>Schizachyrium scoparium</i>	SCSC	UDPU	UPDU	UPDU	UDUU	UDUU	UDPU
muhly	<i>Muhlenbergia spp.</i>	MUHLE	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
Nebraska sedge	<i>Carex nebrascensis</i>	CANE2	UDUD	UPND	UDUD	UPND	UPND	UDUD
needleandthread	<i>Hesperostipa comata ssp. comata</i>	HECOC8	DPDD	UPDU	DPDD	UDUU	UDUU	DPDD
northern reedgrass	<i>Calamagrostis stricta ssp. inexpansa</i>	CAST13	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
Nuttall's alkaligrass	<i>Puccinellia nuttalliana</i>	PUNU2	DPUD	NPND	DPUD	UDUU	UDUU	DPPD
panicgrass	<i>Dichanthelium wilcoxianum</i>	DIWI5	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
plains bluegrass	<i>Poa arida</i>	POAR3	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
plains muhly	<i>Muhlenbergia cuspidata</i>	MUCU3	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
plains reedgrass	<i>Calamagrostis montanensis</i>	CAMO	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
prairie cordgrass	<i>Spartina pectinata</i>	SPPE	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
prairie junegrass	<i>Koeleria macrantha</i>	KOMA	UDUU	NDNU	UDUU	UDUU	UDUU	UDUU
prairie sandreed	<i>Calamovilfa longifolia</i>	CALO	UDPU	UDUU	UDDU	UDUU	UDUU	UDUU
reed canarygrass	<i>Phalaris arundinacea</i>	PHAR3	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
rushes	<i>Juncus spp.</i>	JUNCU	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
sand bluestem	<i>Andropogon hallii</i>	ANHA	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
sand dropseed	<i>Sporobolus cryptandrus</i>	SPCR	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
sand lovegrass	<i>Eragrostis trichodes</i>	ERTR3	UDPU	UDUU	UDDU	UDUU	UDUU	UDDU
sand paspalum	<i>Paspalum setaceum</i>	PASE5	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
Sandberg bluegrass	<i>Poa secunda</i>	POSE	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
sandhill muhly	<i>Muhlenbergia pungens</i>	MUPU2	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
sedge	<i>Carex spp.</i>	CAREX	UDUD	UPND	UDUD	UPND	UPND	UDUD
sideoats grama	<i>Bouteloua curtipendula</i>	BOCU	UDPU	UPDU	UPDU	UDUU	UDUU	UDUU
slender wheatgrass	<i>Elymus trachycaulus ssp. trachycaulus</i>	ELTR1	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
spikerush	<i>Eleocharis spp.</i>	ELEOC	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
switchgrass	<i>Panicum virgatum</i>	PAVI2	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
thickspike wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	ELLAL	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
threadleaf sedge	<i>Carex filifolia</i>	CAFI	UDUD	UPND	UDUD	UPND	UPND	UDUD
threeawn	<i>Aristida spp.</i>	ARIST	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
western wheatgrass	<i>Pascopyrum smithii</i>	PASM	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
<b>FORBS</b>								
American licorice	<i>Glycyrrhiza lepidota</i>	GLLE3	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
American vetch	<i>Vicia americana</i>	VIAM	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
arrowgrass	<i>Triglochin spp.</i>	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
aster	<i>Aster spp.</i>	ASTER	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
biscuitroot	<i>Lomatium spp.</i>	LOMAT	UDUU	UDDU	UDUU	UDDU	UDDU	UDDU
blue-eyed grass	<i>Sisyrinchium spp.</i>	SISYR	UDUU	UPUU	UDUU	UDUU	UDUU	UDUU
breadroot	<i>Pediomelum spp.</i>	PEDIO2	NUUN	UDUU	NUUN	UDUU	UDUU	UDUU
broadleaf cattail	<i>Typha latifolia</i>	TYLA	UDUU	UUUU	UDUU	UUUU	UDUU	UDUU
buckwheat	<i>Eriogonum spp.</i>	ERIOG	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
bush morningglory	<i>Ipomoea leptophylla</i>	IPLE	UUUU	UUUU	NNNN	UUUU	UUUU	UUUU
cinquefoil	<i>Potentilla spp.</i>	POTEN	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
cudweed sagewort	<i>Artemisia ludoviciana</i>	ARLU	UUUU	UDUU	UUUU	UDUU	UDUU	UDUU
curlycup gumweed	<i>Grindelia squarrosa</i>	GRSQ	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
deathcamas	<i>Zigadenus venenosus</i>	ZIVE	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
dotted gayfeather	<i>Liatris punctata</i>	LIPU	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
evening primroses	<i>Oenothera spp.</i>	OENOT	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
false boneset	<i>Brickellia eupatorioides</i>	BREU	NDUN	NDUN	NNNN	NDUN	NDUN	NDUN
fringed sagewort	<i>Artemisia frigida</i>	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
goldenrod	<i>Solidago spp.</i>	SOLID	NUNN	NUNN	NNNN	NUNN	NUNN	NUNN

green sawwort	Artemisia campestris	ARCA12	NNNN	NUUN	NNNN	NUUN	NUUN	NNNN
greenthread	Thelesperma spp.	THELE	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
groundsel	Senecio spp.	SENEC	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
hairy goldaster	Heterotheca villosa	HEV14	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
heath aster	Symphotrichum ericoides	SYER	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
iris	Iris spp.	IRIS	NUUN	NUUN	NNNN	NUUN	NUUN	NUUN
ironweed	Vernonia spp.	VERNO	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Lambert crazyweed	Oxytropis lambertii	OXLA3	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
larkspur	Delphinium spp.	DELPH	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
lemon scurfpea	Psoraleidum lanceolatum	PSLA3	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
Maximilian sunflower	Helianthus maximiliani	HEMA2	UDPU	UDPU	UDPU	UDPU	UDPU	UDPU
milkvetch	Astragalus spp.	ASTRA	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
nailwort	Paronychia spp.	PARON	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Pennsylvania smartweed	Polygonum pensylvanicum	POPE2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
penstemons	Penstemon spp.	PENST	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
perennial sunflowers	Helianthus spp.	HELIA3	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
phlox	Phlox spp.	PHLOX	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
poison hemlock	Conium maculatum	COMA2	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
prairie clovers	Dalea spp.	DALEA	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
prairie coneflower	Ratibida columnifera	RACO3	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
purple prairie clover	Dalea purpurea	DAPU5	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
Pursh seepweed	Suaeda calceoliformis	SUCA2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
pussytoes	Antennaria spp.	ANTEN	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
rush skeletonplant	Lygodesmia juncea	LYJU	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
sandwort	Arenaria spp.	ARENA	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
scarlet gaura	Gaura coccinea	GACO5	NNNN	NUUN	NNNN	NUUN	NUUN	NNNN
scarlet globemallow	Sphaeralcea coccinea	SPCO	UUUU	UUUU	UUUU	UPPU	UUUU	UUUU
scurfpea	Psoraleidum spp.	PSORA2	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
showy peavine	Lathyrus polymorphus	LAPO2	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
silky prairie clover	Dalea villosa	DAVI	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
slimflower scurfpea	Psoraleidum tenuiflorum	PSTE5	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
spiderworts	Tradescantia spp.	TRADE	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
stiff sunflower	Helianthus pauciflorus	HEPA19	UDPU	UDPU	UDPU	UDPU	UDPU	UDPU
swamp smartweed	Polygonum hydropiperoides	POHY2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
tenpetal blazingstar	Mentzelia decapetala	MEDE2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
veiny dock	Rumex venosus	RUVE2	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
water hemlock	Cicuta spp.	CICUT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
western ragweed	Ambrosia psilostachya	AMPS	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
western yarrow	Achillea millefolium	ACMI2	NUUN	NUUN	NNNN	NUUN	NUUN	NUUN
white prairie clover	Dalea candida	DACA7	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
whiteflower gilia	Ipomopsis longiflora ssp. longiflora	IPLOL	NUUN	NUUN	NNNN	NUUN	NUUN	NUUN
wild onion	Allium textile	ALTE	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
wild strawberry	Fragaria virginiana	FRVI	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
woollywhite hymenopappus	Hymenopappus tenuifolius	HYTE2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
<b>TREES, SHRUBS, AND HALF-SHRUBS</b>								
antelope bitterbrush	Purshia tridentata	PUTR2	PDDD	PDDD	DDUD	PDDP	PDDP	PDDP
Arkansas rose	Rosa arkansana	ROAR3	UDDU	UDDU	NUUN	UDDU	UDDU	UDDU
big sagebrush	Artemisia tridentata	ARTR2	UNUU	DUUD	UNNU	PPPP	PUDP	DUUU
boxelder	Acer negundo	ACNE2	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
brittle cactus	Opuntia fragilis	OPFR	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
broom snakeweed	Gutierrezia sarothrae	GUSA2	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
fourwing saltbush	Atriplex canescens	ATCA2	PDDP	PDDP	PDDP	PDDP	PDDP	PDDP
Gardner's saltbush	Atriplex gardneri	ATGA	PDDP	PDDP	DUUD	PDDP	PDDP	PDDP
greasewood (Toxic in large amounts)	Sarcobatus vermiculatus	SAVE4	DUUD	DUUD	DUUD	DUUD	DUUD	DUUD
green ash	Fraxinus pennsylvanica	FRPE	UUUU	UUUU	UUUU	UDDU	UDDU	UUUU
green rabbitbrush	Chrysothamnus viscidiflorus	CHV18	DUUD	DUUD	UNNU	PUDP	PUDP	DUUD
leadplant	Amorpha canescens	AMCA6	UPDU	UPDU	UDDU	UPDU	UPDU	UPDU
plains cottonwood	Populus deltoides ssp. monilifera	PODEM	DUDD	DUDD	DUDD	DUDD	DUDD	DUDD
plains pricklypear	Opuntia polyacantha	OPPO	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
ponderosa pine	Pinus ponderosa var. scopulorum	PIPOS	UTTU	UNNU	UNNU	UNNU	UNNU	UNNU
Rocky Mountain juniper	Juniperus scopulorum	JUSC2	UNNU	UNNU	UNNU	UNNU	DUUD	UNNU
rose	Rosa spp.	ROSA5	UDDU	UDDU	NUUN	UDDU	UDDU	UDDU
rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	DUUD	UUUU	UDDU	DUUD	DUUU
sand sagebrush	Artemisia filifolia	ARF12	UNNU	UNNU	UNNU	UNNU	UNNU	UNNU
silver buffaloberry	Shepherdia argentea	SHAR	DUUU	DUUU	UUUU	UUUU	PUDP	DUUU
silver sagebrush	Artemisia cana	ARCA13	DUUD	DUUD	UNNU	PPPP	PDDP	DUUD
skunkbush sumac	Rhus trilobata	RHTR	DUUD	DUUD	UUUU	DUUD	DUUD	DUUD
spreading buckwheat	Eriogonum effusum	EREF	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
true mountainmahogany	Cercocarpus montanus	CEMO2	DDDD	PDDD	DDDD	UNNU	PDDP	PDDD
western sandcherry	Prunus pumila var. besseyi	PRPUB	DUUD	DUUD	DUUD	DUUD	PUDP	PUUP
western snowberry	Symphoricarpos occidentalis	SYOC	UUUU	UUUU	UUUU	UUUU	DUUD	DUUU
willows	Salix spp.	SALIX	PUDP	PUDP	DUUD	UUUU	PUDP	PUDP
winterfat	Krascheninnikovia lanata	KRLA2	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
yucca	Yucca glauca	YUGL	DUUD	DUUD	UUUU	DUUD	DUUD	DUUD

## Animal Community – Grazing Interpretations

The following tables list suggested initial stocking rates for cattle under continuous grazing (year long grazing or growing season long grazing) under normal growing conditions; however, *continuous grazing is not typically recommended*. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community as described in this ecological site description. Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using the following stocking rate information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity.

<b>Plant Community 12-14" Precipitation</b>	<b>Production (lbs./acre)</b>	<b>Carrying Capacity (AUM/acre)</b>
Rhizomatous Wheatgrasses, Needleandthread, Blue Grama (HCPC)	1300	0.40
Blue Grama Sod w/Cool-season Mid-grasses	900	0.33
Blue Grama Sod w/o Cool-season Mid-grasses	500	0.20
Bare Ground, Blue Grama, Invaders	500	0.10
Low Plant Density, Excess Litter	1200	0.33
Go-back Land (highly variable)	500	0.20

<b>Plant Community 15-17" Precipitation</b>	<b>Production (lbs./acre)</b>	<b>Carrying Capacity (AUM/acre)</b>
Rhizomatous Wheatgrasses, Needleandthread, Blue Grama (HCPC)	1500	0.50
Blue Grama Sod w/Cool-season Mid-grasses	1100	0.40
Blue Grama Sod w/o Cool-season Mid-grasses	700	0.20
Bare Ground, Blue Grama, Invaders	700	0.10
Low Plant Density, Excess Litter	1400	0.40
Go-back Land (highly variable)	700	0.20

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangelands in this area provide yearlong forage under prescribed grazing for cattle, sheep, horses and other herbivores. During the dormant period, livestock may need supplementation based on reliable forage analysis.

## Hydrology Functions

Water is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group B and C, with localized areas in hydrologic group D. Infiltration ranges from moderately slow to moderate. Runoff potential for this site varies from low to moderate depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where short-grasses form a strong sod and dominate the site. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts are rare to non-existent. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

## Recreational Uses

This site provides hunting, hiking, photography, bird watching and other opportunities. The wide varieties of plants that bloom from spring until fall have an esthetic value that appeals to visitors.

## Wood Products

No appreciable wood products are present on the site.

## Other Products

None noted.

## Supporting Information

### Associated Sites

(R067XY162WY) – Shallow Loamy 12-17" P.Z.

### Similar Sites

(R067XY150WY) – Sandy 12-17" P.Z. has more needleandthread

(R067XY104WY) – Clayey 12-17" P.Z. has more western wheatgrass

(R067XY126WY) – Loamy Overflow 12-17" P.Z. is more productive

### Inventory Data References (narrative)

Information presented here has been derived from NRCS clipping data and other inventory data. Field observations from range trained personnel was also used.

### Inventory Data References

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417	110	1963 -1987	WY	Platte & others

### State Correlation

This site has been correlated with Wyoming, Colorado, and Nebraska.

### Type Locality

### Field Offices

Wyoming: Cheyenne, Douglas, Lusk, Torrington, and Wheatland

Nebraska: Bridgeport, Harrisburg, Kimball, Oshkosh, Scottsbluff, and Sidney

Colorado: Greeley, Sterling

### Relationship to Other Established Classifications

### Other References

Other sources used as references include: High Plains Regional Climate Center, USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, and USDA NRCS Soil Surveys from various counties.

### Site Description Approval

\_\_\_\_\_  
State Range Management Specialist

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Date

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State Range Management Specialist

\_\_\_\_\_  
Date

\_\_\_\_\_  
State Range Management Specialist

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Date