United States Department of Agriculture
Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Shallow Loamy 12-17" Precipitation Zone

Site ID: R067XY162WY

Major Land Resource Area: 67 – North Central High Plains

Physiographic Features

This site will occur on steep slopes and ridge tops but will occur on all slopes and positions.

Landform: hillsides, ridges, escarpments **Aspect:** N/A

	Minimum	Maximum
Elevation (feet):	4000	6500
Slope (percent):	0	50
Water Table Depth (inches):	none	none
Flooding:		
Frequency:	none	none
Duration:	none	none
Ponding:		
Depth (inches):	0	0
Frequency:	none	none
Duration:	none	none
Runoff Class:	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.

	Minimum	Maximum
Frost-free period (days):	74	148
Freeze-free period (days):	101	181
Mean Annual Precipitation (inches):	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

Wetland Description:	System	Subsystem	Class	Sub-class
None	None	None	None	None

Stream Type: None (Rosgen System)

Representative Soil Features

The soils on this sites are shallow (less than 20"to bedrock) and well drained that formed in alluvium over residuum or residuum. These soils have moderate permeability and may occur on all slopes. The bedrock may be any kind which is virtually impenetrable to plant roots, except igneous. The surface soil will have one or more of the following textures: very fine sandy loam, loam, silt loam, sancy clay loam, silty clay loam, silty clay loam and clay loam. Thin ineffective layers of other textures are disregarded.

Major Soil Series correlated to this site include: Shingle, Epping, Blazon, Sunup, Tieside

Other Soil Series correlated to this site include: Brownrigg, Lambman, Wendover

Parent Material Kind: alluvium, residuum
Parent Material Origin: sandstone, shale
Surface Texture: loam, silt loam, very fine sandy loam, clay loam
Surface Texture Modifier: none
Subsurface Texture Group: loamy
Surface Fragments ≤ 3" (% Cover): 0
Surface Fragments > 3" (%Cover): 0 - 10
Subsurface Fragments ≤ 3" (% Volume): 0 - 20
Subsurface Fragments > 3" (% Volume): 0 - 15

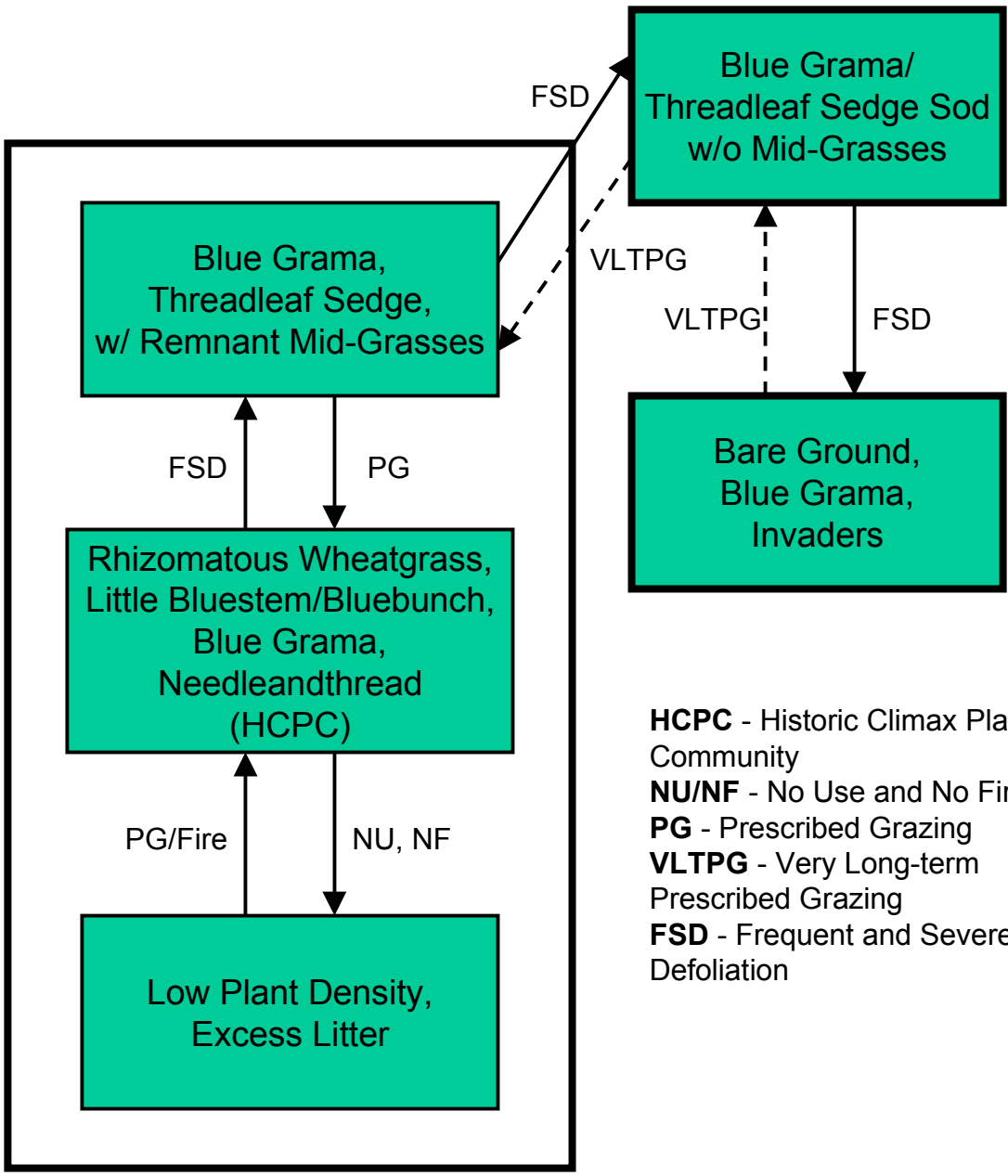
	Minimum	Maximum
Drainage Class:	well	well
Permeability Class:	moderately	moderate slow
Depth (inches):	10	20
Electrical Conductivity (mmhos/cm) ≤20":	0	4
Sodium Absorption Ratio ≤20":	0	5
Soil Reaction (1:1 Water) ≤20":	6.6	8.4
Soil Reaction (0.1M CaCl2) ≤20":	N/A	N/A
Available Water Capacity (inches) ≤30":	1.1	4.2
Calcium Carbonate Equivalent (percent) ≤20":	0	5

Plant Communities

Ecological Dynamics of the Site
As this site begins to deteriorate from a combination of frequent and severe grazing during the growing season, grasses such as little bluestem, sideoats grama, bluebunch wheatgrass, and needleandthread will decrease in both frequency and production. Grasses such as blue grama and threadleaf sedge will increase. Under continued frequent and severe defoliation, with no rest periods for the plants to recover, rhizomatous wheatgrasses will also begin to decrease. If continued, the plant community will become sod-bound, and all mid to tall grasses can eventually be removed from the plant community. Over the long-term, this continuous use in combination with high stock densities, will result in a broken sod, with areas of bare ground developing, and species such as annual bromes 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.



HCPC - Historic Climax Plant Community
NU/NF - No Use and No Fire
PG - Prescribed Grazing
VLTPG - Very Long-term Prescribed Grazing
FSD - Frequent and Severe Defoliation

Plant Community Composition and Group Annual Production

Rhizomatous Wheatgrass, Little Bluestem/Bluebunch, Blue Grama, Needleandthread Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year) Total: 900		
			Group	lbs./acre	% Comp.
GRASSES AND GRASS-LIKES					
WARM-SEASON MID-TALL GRASSES			**1**	**135 - 270**	**15 - 30**
little bluestem	Schizachyrium scoparium	SCSC	1	90 - 180	10 - 20
sideoats grama	Bouteloua curtipendula	BOCU	1	45 - 90	5 - 10
COOL-SEASON MID-GRASSES			**2**	**90 - 270**	**10 - 30**
needleandthread	Hesperostipa comata	HECO26	2	90 - 135	10 - 15
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	2	0 - 135	0 - 15
RHIZOMATOUS WHEATGRASSES:			**3**	**135 - 225**	**15 - 25**
thickspike wheatgrass	Elymus lanceolatus	ELLA3	3	135 - 225	15 - 25
western wheatgrass	Pascopyrum smithii	PASM	3	135 - 225	15 - 25
WARM-SEASON SHORT GRASSES			**4**	**135 - 180**	**15 - 20**
blue grama	Bouteloua gracilis	BOGR2	4	135 - 180	15 - 20
MISCELLANEOUS GRASSES			**5**	**45 - 90**	**5 - 10**
buffalograss	Buchloe dactyloides	BUDA	5	0 - 45	0 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	5	0 - 45	0 - 5
prairie junegrass	Koeleria macrantha	KOMA	5	0 - 45	0 - 5
sand dropseed	Sporobolus cryptandrus	SPCR	5	0 - 45	0 - 5
Sandberg bluegrass	Poa secunda	POSE	5	0 - 45	0 - 5
threeawns	Aristida spp.	ARIST	5	0 - 18	0 - 2
other perennial grasses (native)		2GP	5	0 - 45	0 - 5
SEDGES			**6**	**45 - 90**	**5 - 10**
threadleaf sedge	Carex filifolia	CAFI	6	45 - 90	5 - 10
other sedges	Carex spp.	CAREX	6	0 - 45	0 - 5
FORBS			**7**	**45 - 90**	**5 - 10**
fringed sagewort	Artemisia frigida	ARFR4	7	0 - 45	0 - 5
buckwheats	Eriogonum spp.	ERIOG	7	0 - 18	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	7	0 - 18	0 - 2
dotted gayfeather	Liatris punctata	LIPU	7	0 - 18	0 - 2
goldenrods	Solidago spp.	SOLID	7	0 - 18	0 - 2
green sagewort	Artemisia campestris	ARCA12	7	0 - 18	0 - 2
groundsels	Senecio spp.	SENEC	7	0 - 18	0 - 2
hairy goldaster	Heterotheca villosa	HEVI4	7	0 - 18	0 - 2
heath aster	Symphyotrichum ericoides	SYER	7	0 - 18	0 - 2
lemon scurfpea	Psoralidium lanceolatum	PSLA3	7	0 - 18	0 - 2
milkvetches	Astragalus spp.	ASTRA	7	0 - 18	0 - 2
penstemons	Penstemon spp.	PENST	7	0 - 18	0 - 2
prairie clovers	Dalea spp.	DALEA	7	0 - 18	0 - 2
scarlet gaura	Gaura coccinea	GACO5	7	0 - 18	0 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	7	0 - 18	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 18	0 - 2
other perennial forbs (native)		2FP	7	0 - 45	0 - 5
SHRUBS			**8**	**0 - 45**	**0 - 5**
true mountainmahogany	Cercocarpus montanus	CEMO2	8	0 - 45	0 - 5
winterfat	Krascheninnikovia lanata	KRLA2	8	0 - 45	0 - 5
yucca	Yucca glauca	YUGL	8	0 - 45	0 - 5
broom snakeweed	Gutierrezia sarothrae	GUSA2	8	0 - 18	0 - 2
plains pricklypear	Opuntia polyacantha	OPPO	8	0 - 18	0 - 2
skunkbush sumac	Rhus trilobata	RHTR	8	0 - 18	0 - 2
other shrubs and half-shrubs (native)		2SHRUB	8	0 - 45	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 Wheatgrass, Little Bluestem/Bluebunch, Blue Grama, Needleandthread Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year) Total: 1100		
			Group	lbs./acre	% Comp.
GRASSES AND GRASS-LIKES					
WARM-SEASON MID-TALL GRASSES			**1**	**165 - 330**	**15 - 30**
little bluestem	Schizachyrium scoparium	SCSC	1	110 - 220	10 - 20
sideoats grama	Bouteloua curtipendula	BOCU	1	55 - 110	5 - 10
COOL-SEASON MID-GRASSES			**2**	**110 - 330**	**10 - 30**
needleandthread	Hesperostipa comata	HECO26	2	110 - 165	10 - 15
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	2	0 - 165	0 - 15
RHIZOMATOUS WHEATGRASSES:			**3**	**165 - 275**	**15 - 25**
thickspike wheatgrass	Elymus lanceolatus	ELLA3	3	165 - 275	15 - 25
western wheatgrass	Pascopyrum smithii	PASM	3	165 - 275	15 - 25
WARM-SEASON SHORT GRASSES			**4**	**165 - 220**	**15 - 20**
blue grama	Bouteloua gracilis	BOGR2	4	165 - 220	15 - 20
MISCELLANEOUS GRASSES			**5**	**55 - 110**	**5 - 10**
buffalograss	Buchloe dactyloides	BUDA	5	0 - 55	0 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	5	0 - 55	0 - 5
prairie junegrass	Koeleria macrantha	KOMA	5	0 - 55	0 - 5
sand dropseed	Sporobolus cryptandrus	SPCR	5	0 - 55	0 - 5
Sandberg bluegrass	Poa secunda	POSE	5	0 - 55	0 - 5
threeawns	Aristida spp.	ARIST	5	0 - 22	0 - 2
other perennial grasses (native)		2GP	5	0 - 55	0 - 5
SEDGES			**6**	**55 - 110**	**5 - 10**
threadleaf sedge	Carex filifolia	CAFI	6	55 - 110	5 - 10
other sedges	Carex spp.	CAREX	6	0 - 55	0 - 5
FORBS			**7**	**55 - 110**	**5 - 10**
fringed sagewort	Artemisia frigida	ARFR4	7	0 - 55	0 - 5
buckwheats	Eriogonum spp.	ERIOG	7	0 - 22	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	7	0 - 22	0 - 2
dotted gayfeather	Liatris punctata	LIPU	7	0 - 22	0 - 2
goldenrods	Solidago spp.	SOLID	7	0 - 22	0 - 2
green sagewort	Artemisia campestris	ARCA12	7	0 - 22	0 - 2
groundsels	Senecio spp.	SENEC	7	0 - 22	0 - 2
hairy goldaster	Heterotheca villosa	HEVI4	7	0 - 22	0 - 2
heath aster	Symphyotrichum ericoides	SYER	7	0 - 22	0 - 2
lemon scurfpea	Psoralidium lanceolatum	PSLA3	7	0 - 22	0 - 2
milkvetches	Astragalus spp.	ASTRA	7	0 - 22	0 - 2
penstemons	Penstemon spp.	PENST	7	0 - 22	0 - 2
prairie clovers	Dalea spp.	DALEA	7	0 - 22	0 - 2
scarlet gaura	Gaura coccinea	GACO5	7	0 - 22	0 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	7	0 - 22	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 22	0 - 2
other perennial forbs (native)		2FP	7	0 - 55	0 - 5
SHRUBS			**8**	**0 - 55**	**0 - 5**
true mountainmahogany	Cercocarpus montanus	CEMO2	8	0 - 55	0 - 5
winterfat	Krascheninnikovia lanata	KRLA2	8	0 - 55	0 - 5
yucca	Yucca glauca	YUGL	8	0 - 55	0 - 5
broom snakeweed	Gutierrezia sarothrae	GUSA2	8	0 - 22	0 - 2
plains pricklypear	Opuntia polyacantha	OPPO	8	0 - 22	0 - 2
skunkbush sumac	Rhus trilobata	RHTR	8	0 - 22	0 - 2
other shrubs and half-shrubs (native)		2SHRUB	8	0 - 55	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 Wheatgrass, Little Bluestem/Bluebunch, Blue Grama, Needleandthread 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 85-95% grasses or grass-like plants, 5-10% forbs, and 0-5% woody plants. The plant community is predominately cool-season mid-grasses, with a significant component of warm-season mid-grasses. The major grasses include little bluestem, rhizomatous wheatgrasses, and blue grama. Other grasses and grass-likes include needleandthread, threadleaf sedge, and sideoats grama. Bluebunch wheatgrass is found in Wyoming, primarily in the western portion of the 15-17" Precipitation Zone at higher elevations.

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	540	805	1080
FORB	45	70	90
SHRUB	15	25	30
TREE	0	0	0
TOTAL	600	900	1200

15-17"P.Z.

	LOW	AVG	HIGH
GRASS/GRASSLIKE	675	985	1345
FORB	55	85	115
SHRUB	20	30	40
TREE	0	0	0
TOTAL	750	1100	1500

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	5	10	20	30	20	5	10	0	0	0

(monthly percentages of total annual growth)

This plant community is well adapted to the Northern Great Plains climate. This is a sustainable plant community (soil stability, watershed function, and biologic integrity.) Infiltration rates are moderate, and soil erosion is low.

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

- Frequent and severe defoliation will move this plant community towards the *Blue Grama, Threadleaf Sedge with Remnant Mid-grasses Plant Community.* Over a period of years, plant species less tolerant to frequent or 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, Threadleaf Sedge with Remnant 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 mid-grasses. It typically is made up of sod-forming grasses with only remnants of mid-grasses remaining. The dominant grasses include blue grama and threadleaf sedge. Palatable forbs have been reduced.

Compared to the HCPC, blue grama and threadleaf sedge have increased noticeably. Many of the mid-grasses have been reduced. If the plant community received adequate rest periods only during the early part of the growing season, the little bluestem and sideoats grama will have been reduced. If the plant community received adequate rest periods only during the later part of the growing season, the rhizomatous wheatgrasses, bluebunch wheatgrass, and needleandthread will have been reduced. Plant diversity is moderate.

In the 12 to 14 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.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 850 pounds per acre during an average year, but it can range from about 550 pounds per acre in unfavorable years to about 1,150 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	5	10	20	30	20	5	10	0	0	0

(monthly percentages of total annual growth)

Nearly all the plant species typically found in the HCPC are present and will respond to changes in grazing management. This plant community can become somewhat resistant to change, depending on how sod-bound the plant community has become.

Soil erosion is low, infiltration is reduced, and overland flow is increased. This can result in off-site gully erosion.

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

- Frequent and severe defoliation, if continued, will move this plant community toward the *Blue Grama/Threadleaf Sedge Sod without Mid-grasses Plant Community*. Plants less tolerant to grazing will decrease and those more tolerant to grazing will increase or invade.

- Prescribed grazing will move this plant community towards the *Rhizomatous Wheatgrass, Little Bluestem/Bluebunch, Blue Grama, Needleandthread Plant Community (HCPC).* If the community has become sod-bound, grazing land mechanical treatment (such as chiseling on the contour) could accelerate this transition by increasing infiltration and breaking up the sod. However, this may not be economically feasible due to the low production potential and shallow soils.

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 plants such as blue grama. Plants become decadent with low vigor. Bunch grasses, such as little bluestem and bluebunch wheatgrass, often develop dead centers. Eventually, the interspaces between the plants increase in size leaving more soil surface exposed.

The dominant plants are similar to those found in the HCPC, but with less vigor. Cool-season grasses, and cactus typically have increased. Blue grama is reduced and western wheatgrass is increased. Noxious weeds such as Canada thistle, leafy spurge, and Dalmatian toadflax will invade, if a seed source is readily available. Annual weeds and Kentucky bluegrass tend to invade under these conditions.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 800 pounds per acre during an average year, but it can range from about 550 pounds per acre in unfavorable years to about 1,050 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 1,000 pounds per acre during an average year, but it can range from about 650 pounds per acre in unfavorable years to about 1,350 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	5	10	0	0	0

(monthly percentages of total annual growth)

This plant community can be improved relatively quickly, if it has not been significantly eroded or invaded by noxious weeds. The introduction of grazing or fire will quickly move the plant community towards the HCPC.

Soil erosion can become accelerated because of increased bare ground, if these conditions are allowed to continue over the long-term. Water flow patterns and pedestalling can become obvious. At that point, infiltration is reduced and runoff is increased.

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

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

Blue Grama/Threadleaf Sedge Sod without Mid-Grasses Plant Community

This plant community develops under long-term frequent and severe defoliation. This typically occurs when the community has been continuously grazed with heavy stocking rates, throughout the growing season over a period of many years. It is a dense sod made up of warm season grasses and sedges. The mid-grasses and palatable forbs have been eliminated. The dominant plants are blue grama and threadleaf sedge.

Compared to the HCPC, blue grama and threadleaf sedge have increased and dominate the community. Little bluestem, sideoats grama, bluebunch wheatgrass, and needleandthread have been removed. Only remnants of rhizomatous wheatgrasses typically remain. Plant diversity is very low.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 550 pounds per acre during an average year, but it can range from about 350 pounds per acre in unfavorable years to about 750 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 650 pounds per acre during an average year, but it can range from about 450 pounds per acre in unfavorable years to about 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	5	15	40	30	5	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 due to the fact that many of the plant species are missing and a seed source is not readily available. Also, the sod-forming grasses tend to maintain themselves due to their resistance to any further overgrazing. If disturbed, it will usually return to a plant community very similar to that found prior to the treatment.

The soil erosion is very low due to the sod-bound condition. Greatly reduced infiltration and increased runoff typically cause off-site gully erosion. This significantly reduces the amount of precipitation available for plant growth.

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

- Frequent and severe defoliation, if continued, can move this plant community to a *Bare Ground, Blue Grama, Invaders Plant Community.*

- Very long-term prescribed grazing may eventually result in the *Blue Grama, Threadleaf Sedge with Remnant Mid-Grasses Plant Community*. This change may take generations depending on the availability of an adequate seed/vegetative source. Range or pasture planting may be the only option to return this community to a productive condition in a realistic time frame; however, this may not be economically feasible due to shallow soils and low production potential.

Bare Ground, Blue Grama, Invaders Plant Community

This plant community occurs where the rangeland is grazed year-round, at high stock densities. Physical impact such as trampling, soil compaction, and trailing typically contribute to this transition. The plant composition is made of annuals with a few species of perennial forbs and grasses that are very tolerant to frequent and severe defoliation. The dominant grasses include blue grama, threadleaf sedge, and threeawns. Annual grasses such as cheatgrass and sixweeks fescue have increased. The dominant forbs include curlycup gumweed, green sagewort, phlox, sandwort, hairy goldaster, and annuals. Broom snakeweed is 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 450 pounds per acre during an average year, but it can range from about 300 pounds per acre in unfavorable years to about 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 550 pounds per acre during an average year, but it can range from about 350 pounds per acre in unfavorable years to about 750 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	5	15	25	30	15	5	5	0	0	0

(monthly percentages of total annual growth)

This plant community is very resistant to change. Even with the best range management, this plant community may never return to the HCPC. If disturbed, it will usually return to the plant community found prior to the treatment, sometimes only affecting production for a short time.

Soil erosion can be highly variable depending on the amount of ground cover. Typically there is a large amount of bare ground unless covered by annuals. Typically, runoff is high and infiltration is low.

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

Very long-term prescribed grazing will move this plant community toward the *Blue Grama/Threadleaf Sedge Sod without Mid-grasses Plant Community* over many years. Range or pasture planting may be the only option to return this community to a productive condition in a realistic time frame; however, this may not be economically feasible due to the shallowness of the soils and the low production potential.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Rhizomatous Wheatgrasses, Little bluestem/Bluebunch, 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.

Blue Grama, Threadleaf Sedge w/ Remnant 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, Threadleaf Sedge w/o 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.

Low Plant Density, Excess Litter Community: This community has low habitat value for most wildlife species. Horned larks may nest in this community.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occuring plants in MLRA 67 North

Common Name	Scientific Name	Symbol	Cattle	Sheep	Horses	Antelope	Deer	Elk
GRASSES/GRASSLIKES								
alkali bluegrass	Poa juncifolia	POJU	UDUD	NDNU	UDUD	UDUU	UDUU	DPDD
alkali cordgrass	Spartina gracilis	SPGR	UDPU	UPDU	UPDU	UUDU	UUDU	UDPU
alkali muhly	Muhlenbergia asperifolia	MUAS	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
alkali sacaton	Sporobolus airoides	SPAI	UDPU	UPDU	UPDU	UUDU	UUDU	UDPU
Baltic rush	Juncus balticus	JUBA	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
basin wildrye	Leymus cinereus	LECI4	DPDD	UPDU	DPDD	UDUU	UDUU	DPDD
big bluestem	Andropogon gerardii	ANGE	UDPD	UDDU	UDPD	UUDU	UUDU	UDPD
blowout grass	Redfieldia flexuosa	REFL	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
blue grama	Bouteloua gracilis	BOGR2	UDPU	UDPU	UDPU	UUDU	UUDU	UUDU
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
bluegrasses	Poa spp.	POA	UPUU	UPND	UPUU	UPND	UPND	UPUU
bluejoint reedgrass	Calamagrostis canadensis	CACA4	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
buffalograss	Buchloe dactyloides	BUDA	UDPU	UDPU	UDPU	UUDU	UUDU	UUDU
bulrush	Scirpus spp.	SCIRP	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Canada wildrye	Elymus canadensis	ELCA4	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
Fendler's threeawn	Aristida purpurea var. fendleriana	ARPUF	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
foxtail barley	Hordeum jubatum	HOJU	NDNN	NDNN	NDNN	NDNN	NDNN	NDNN
green needlegrass	Nassella viridula	NAVI4	DPPD	UPDU	DPPD	UDUU	UDUU	DPPD
hairy grama	Bouteloua hirsuta	BOHI2	UDPU	UDPU	UDPU	UUDU	UUDU	UUDU
Indian ricegrass	Achnatherum hymenoides	ACHY	DPPD	UPDU	DPPD	UDUU	UDUU	DPPD
Indiangrass	Sorghastrum nutans	SONU2	UDPD	UDDU	UDPD	UUDU	UUDU	UDPD
inland saltgrass	Distichlis spicata	DISP	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
little bluestem	Schizachyrium scoparium	SCSC	UDPU	UPDU	UPDU	UUDU	UUDU	UDPU
muhly	Muhlenbergia spp.	MUHLE	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
Nebraska sedge	Carex nebrascensis	CANE2	UDUD	UPND	UDUD	UPND	UPND	UDUD
needleandthread	Hesperostipa comata ssp. comata	HECOC8	DPDD	UPDU	DPDD	UDUU	UDUU	DPDD
northern reedgrass	Calamagrostis stricta ssp. inexpansa	CASTI3	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	DPUD	NPND	DPUD	UDUU	UDUU	DPPD
panicgrass	Dichanthelium wilcoxianum	DIWI5	UUDU	NUNN	UUDU	NUNN	NUNN	UUDU
plains bluegrass	Poa arida	POAR3	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
plains muhly	Muhlenbergia cuspidata	MUCU3	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
plains reedgrass	Calamagrostis montanensis	CAMO	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
prairie cordgrass	Spartina pectinata	SPPE	UDPD	UDDU	UDPD	UUDU	UUDU	UDPD
prairie junegrass	Koeleria macrantha	KOMA	UDUU	NDNU	UDUU	UDUU	UDUU	UDUU
prairie sandreed	Calamovilfa longifolia	CALO	UDPU	UDUU	UDDU	UUDU	UUDU	UUDU
reed canarygrass	Phalaris arundinacea	PHAR3	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
rushes	Juncus spp.	JUNCU	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
sand bluestem	Andropogon hallii	ANHA	UDPD	UDDU	UDPD	UUDU	UUDU	UDPD
sand dropseed	Sporobolus cryptandrus	SPCR	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
sand lovegrass	Eragrostis trichodes	ERTR3	UDPU	UUDU	UDDU	UUDU	UUDU	UDDU
sand paspalum	Paspalum setaceum	PASE5	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
Sandberg bluegrass	Poa secunda	POSE	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
sandhill muhly	Muhlenbergia pungens	MUPU2	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
sedge	Carex spp.	CAREX	UDUD	UPND	UDUD	UPND	UPND	UDUD
sideoats grama	Bouteloua curtipendula	BOCU	UDPU	UPDU	UPDU	UUDU	UUDU	UUDU
slender wheatgrass	Elymus trachycaulus ssp. trachycaulus	ELTRT	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
spikerush	Eleocharis spp.	ELEOC	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
switchgrass	Panicum virgatum	PAVI2	UDPD	UDDU	UDPD	UUDU	UUDU	UDPD
thickspike wheatgrass	Elymus lanceolatus ssp. lanceolatus	ELLAL	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
threadleaf sedge	Carex filifolia	CAFI	UDUD	UPND	UDUD	UPND	UPND	UDUD
threeawn	Aristida spp.	ARIST	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
western wheatgrass	Pascopyrum smithii	PASM	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
FORBS								
American licorice	Glycyrrhiza lepidota	GLLE3	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
American vetch	Vicia americana	VIAM	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
arrowgrass	Triglochin spp.	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
aster	Aster spp.	ASTER	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
biscuitroot	Lomatium spp.	LOMAT	UDUU	UDDU	UDUU	UDDU	UDDU	UDDU
blue-eyed grass	Sisyrinchium spp.	SISYR	UUDU	UUPU	UUDU	UUDU	UUDU	UUDU
breadroot	Pediomelum spp.	PEDIO2	NUUN	UDUU	NUUN	UDUU	UDUU	UDUU
broadleaf cattail	Typha latifolia	TYLA	UUDU	UUUU	UUDU	UUUU	UUDU	UUDU
buckwheat	Eriogonum spp.	ERIOG	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
bush morningglory	Ipomoea leptophylla	IPLE	UUUU	UUUU	NNNN	UUUU	UUUU	UUUU
cinquefoil	Potentilla spp.	POTEN	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
cudweed sagewort	Artemisia ludoviciana	ARLU	UUUU	UUDU	UUUU	UUDU	UUDU	UUDU
curlycup gumweed	Grindelia squarrosa	GRSQ	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
deathcamas	Zigadenus venenosus	ZIVE	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
dotted gayfeather	Liatris punctata	LIPU	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
evening primroses	Oenothera spp.	OENOT	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
false boneset	Brickellia eupatorioides	BREU	NDUN	NDUN	NNNN	NDUN	NDUN	NDUN
fringed sagewort	Artemisia frigida	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
goldenrod	Solidago spp.	SOLID	NUNN	NUNN	NNNN	NUNN	NUNN	NUNN

Animal Preferences (Quarterly - 1,2,3,4) for commonly occuring plants in MLRA 67 North

green sagewort	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	HEVI4	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
heath aster	Symphyotrichum 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	Psoralidium 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	UUDU	UDDU	UUDU	UPPU	UDDD	UDDD
scurfpea	Psoralidium 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	Psoralidium 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
TREES, SHRUBS, AND HALF-SHRUBS								
antelope bitterbrush	Purshia tridentata	PUTR2	PDDD	PDDD	DDUD	PDDP	PDPP	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	CHVI8	DUUD	DUUD	UNNU	PUDD	PUDD	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	ARFI2	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	DUDD	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.

Plant Community 12-14" Precipitation	**Production (lbs./acre)**	**Carrying Capacity (AUM/acre)**
Rhiz. Wheatgrass, Little Bluestem/Bluebunch, Blue Grama, Needleandthread	900	0.30
Blue Grama, Threadleaf Sedge, w/ Remnant Mid-Grasses	700	0.22
Blue Grama/Threadleaf Sedge Sod w/o Mid-Grasses	550	0.17
Bare Ground, Blue Grama, Invaders	450	0.10
Low Plant Density, Excess Litter	800	0.25

Plant Community 15-17" Precipitation	**Production (lbs./acre)**	**Carrying Capacity (AUM/acre)**
Rhiz. Wheatgrass, Little Bluestem/Bluebunch, Blue Grama, Needleandthread	1100	0.35
Blue Grama, Threadleaf Sedge, w/ Remnant Mid-Grasses	850	0.27
Blue Grama/Threadleaf Sedge Sod w/o Mid-Grasses	650	0.20
Bare Ground, Blue Grama, Invaders	550	0.15
Low Plant Density, Excess Litter	1000	0.30

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
(R067XY122WY) – Loamy 12-17 ” P.Z.
(R067XY176WY) – Very Shallow 12-17” P.Z.

Similar Sites
(R067XY166WY) – Shallow Sandy 12-17” P.Z. has less western wheatgrass
(R067XY122WY) – Loamy 12-17” P.Z. is more productive
(R067XY176WY) – Very Shallow 12-17” P.Z. is less 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

Data Source	Number of Records	Sample Period	State	County
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, Wheatland
Nebraska: Bridgeport, Harrisburg, Kimball, Oshkosh, Scottsbluff, 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	Date
State Range Management Specialist	Date
State Range Management Specialist	Date