

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Gravelly 12-17" Precipitation Zone

Site ID: R067XY112WY

Major Land Resource Area: 67 – North Central High Plains

Physiographic Features

This site occurs on terraces, hillslopes, alluvial fans and outwash fans.

Landform: hillslopes, fans, outwash fans **Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	4000	6700
Slope (percent):	0	40
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.

	<u>Minimum</u>	<u>Maximum</u>
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:	<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 and well drained to excessively drained. Soils formed in calcareous alluvium and have moderately rapid to rapid permeability. Runoff is slow to medium, depending primarily on slope gradient.

Major Soil Series correlated to this site include: Aberone, Brownsto, Dix

Other Soil Series correlated to this site include: none

Parent Material Kind: alluvium

Parent Material Origin: sandstone, shale

Surface Texture: sandy loam

Surface Texture Modifier: gravelly

Subsurface Texture Group: loamy

Surface Fragments (% Cover): 20 - 50

Subsurface Fragments (% Volume): 35 - 60

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	well	excessive
Permeability Class:	moderately rapid	rapid
Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) ≤ 20" :	0	2
Sodium Absorption Ratio ≤ 20" :	0	3
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" :	1.0	4.3
Calcium Carbonate Equivalent (percent) ≤ 20" :	10	40

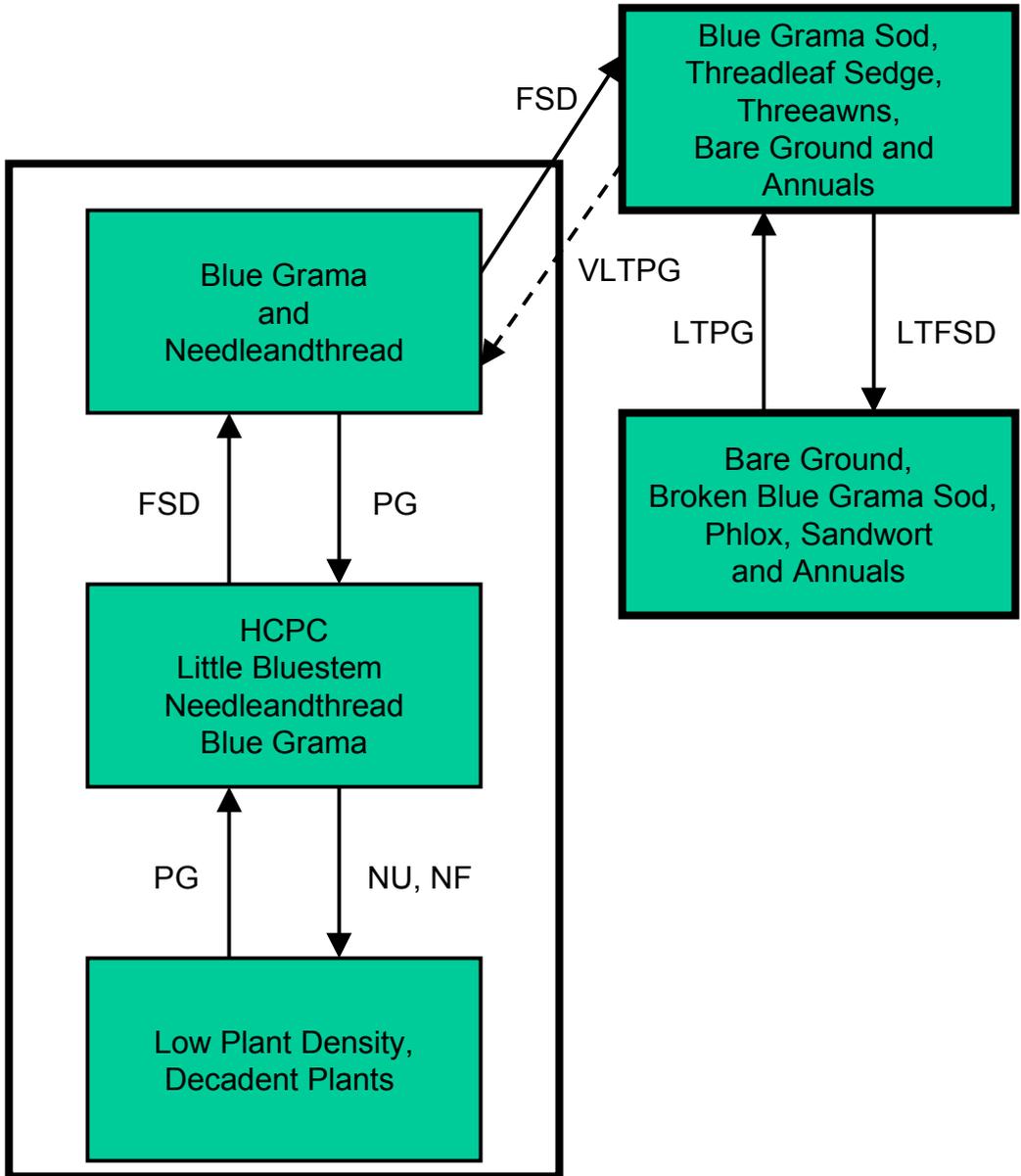
Plant Communities

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, bluebunch wheatgrass, and needleandthread will decrease in both frequency and production. Grasses such as blue grama, threeawn and threadleaf sedge will increase. Under continued frequent and severe defoliation, with no rest periods for the plants to recover, western wheatgrass will also begin to decrease. If continued, the plant community will become sodbound, and all mid to tall grasses can eventually be removed from the plant community. Over the long-term, continuous use in combination with high stock densities will result in a broken sod, 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

HCPC - Historic Climax Plant Community

LTFSD-Long Term Frequent and Severe Defoliation

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

Plant Community Composition and Group Annual Production
Little Bluestem, Needleandthread, Blue Grama (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 550		
GRASSES AND GRASS-LIKES					
WARM-SEASON MID-TALL GRASSES			1	165 - 247.5	30 - 45
little bluestem	Schizachyrium scoparium	SCSC	1	137.5 - 192.5	25 - 35
sideoats grama	Bouteloua curtipendula	BOCU	1	28 - 55	5 - 10
COOL-SEASON MID-GRASSES			2	55 - 165	10 - 30
needleandthread	Hesperostipa comata	HECO26	2	55 - 83	10 - 15
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	2	0 - 83	0 - 15
WARM-SEASON SHORT GRASSES			3	55 - 83	10 - 15
blue grama	Bouteloua gracilis	BOGR2	3	55 - 83	10 - 15
RHIZOMATOUS WHEATGRASSES:			4	28 - 55	5 - 10
thickspike wheatgrass	Elymus lanceolatus	ELLA3	4	28 - 55	5 - 10
western wheatgrass	Pascopyrum smithii	PASM	4	28 - 55	5 - 10
MISCELLANEOUS GRASSES			5	28 - 55	5 - 10
buffalograss	Buchloe dactyloides	BUDA	5	0 - 28	0 - 5
hairy grama	Bouteloua hirsuta	BOHI2	5	0 - 28	0 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	5	0 - 28	0 - 5
plains muhly	Muhlenbergia cuspidata	MUCU3	5	0 - 28	0 - 5
plains reedgrass	Calamagrostis montanensis	CAMO	5	0 - 28	0 - 5
prairie junegrass	Koeleria macrantha	KOMA	5	0 - 28	0 - 5
prairie sandreed	Calamovilfa longifolia	CALO	5	0 - 28	0 - 5
sand dropseed	Sporobolus cryptandrus	SPCR	5	0 - 28	0 - 5
Sandberg bluegrass	Poa secunda	POSE	5	0 - 28	0 - 5
threeawns	Aristida spp.	ARIST	5	0 - 11	0 - 2
other perennial grasses (native)		2GP	5	0 - 28	0 - 5
SEDGES			6	28 - 55	5 - 10
threadleaf sedge	Carex filifolia	CAFI	6	28 - 55	5 - 10
other sedges	Carex spp.	CAREX	6	0 - 28	0 - 5
FORBS			7	83 - 110	15 - 20
buckwheats	Eriogonum spp.	ERIOG	7	0 - 11	0 - 2
dotted gayfeather	Liatris punctata	LIPU	7	0 - 11	0 - 2
eveningprimroses	Oenothera spp.	OENOT	7	0 - 11	0 - 2
fringed sagewort	Artemisia frigida	ARFR4	7	0 - 11	0 - 2
greenthreads	Thelesperma spp.	THELE	7	0 - 11	0 - 2
groundsels	Senecio spp.	SENEC	7	0 - 11	0 - 2
hairy goldaster	Heterotheca villosa	HEVI4	7	0 - 11	0 - 2
lemon scurfpea	Psoralidium lanceolatum	PSLA3	7	0 - 11	0 - 2
nailworts	Paronychia spp.	PARON	7	0 - 11	0 - 2
penstemons	Penstemon spp.	PENST	7	0 - 11	0 - 2
phlox	Phlox spp.	PHLOX	7	0 - 11	0 - 2
prairie clovers	Dalea spp.	DALEA	7	0 - 11	0 - 2
pussytoes	Antennaria spp.	ANTEN	7	0 - 11	0 - 2
sandworts	Arenaria spp.	ARENA	7	0 - 11	0 - 2
scarlet gaura	Gaura coccinea	GACO5	7	0 - 11	0 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	7	0 - 11	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 11	0 - 2
other perennial forbs (native)		2FP	7	0 - 28	0 - 5
SHRUBS AND HALF-SHRUBS			8	0 - 28	0 - 5
yucca	Yucca glauca	YUGL	8	0 - 28	0 - 5
brittle cactus	Opuntia fragilis	OPFR	8	0 - 11	0 - 2
broom snakeweed	Gutierrezia sarothrae	GUSA2	8	0 - 11	0 - 2
plains pricklypear	Opuntia polyacantha	OPPO	8	0 - 11	0 - 2
other shrubs and half-shrubs (native)		2SHRUB	8	0 - 28	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
Little Bluestem, Needleandthread, Blue Grama (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 600		
GRASSES AND GRASS-LIKES					
WARM-SEASON MID-TALL GRASSES			1	180 - 270	30 - 45
little bluestem	Schizachyrium scoparium	SCSC	1	150 - 210	25 - 35
sideoats grama	Bouteloua curtipendula	BOCU	1	28 - 60	5 - 10
COOL-SEASON MID-GRASSES			2	55 - 180	10 - 30
needleandthread	Hesperostipa comata	HECO26	2	60 - 83	10 - 15
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	2	0 - 83	0 - 15
WARM-SEASON SHORT GRASSES			3	60 - 83	10 - 15
blue grama	Bouteloua gracilis	BOGR2	3	60 - 83	10 - 15
RHIZOMATOUS WHEATGRASSES:			4	28 - 60	5 - 10
thickspike wheatgrass	Elymus lanceolatus	ELLA3	4	28 - 60	5 - 10
western wheatgrass	Pascopyrum smithii	PASM	4	28 - 60	5 - 10
MISCELLANEOUS GRASSES			5	28 - 60	5 - 10
buffalograss	Buchloe dactyloides	BUDA	5	0 - 28	0 - 5
hairy grama	Bouteloua hirsuta	BOHI2	5	0 - 28	0 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	5	0 - 28	0 - 5
plains muhly	Muhlenbergia cuspidata	MUCU3	5	0 - 28	0 - 5
plains reedgrass	Calamagrostis montanensis	CAMO	5	0 - 28	0 - 5
prairie junegrass	Koeleria macrantha	KOMA	5	0 - 28	0 - 5
prairie sandreed	Calamovilfa longifolia	CALO	5	0 - 28	0 - 5
sand dropseed	Sporobolus cryptandrus	SPCR	5	0 - 28	0 - 5
Sandberg bluegrass	Poa secunda	POSE	5	0 - 28	0 - 5
threeawns	Aristida spp.	ARIST	5	0 - 12	0 - 2
other perennial grasses (native)		2GP	5	0 - 28	0 - 5
SEDGES			6	28 - 60	5 - 10
threadleaf sedge	Carex filifolia	CAFI	6	28 - 60	5 - 10
other sedges	Carex spp.	CAREX	6	0 - 28	0 - 5
FORBS			7	83 - 120	15 - 20
buckwheats	Eriogonum spp.	ERIOG	7	0 - 12	0 - 2
dotted gayfeather	Liatris punctata	LIPU	7	0 - 12	0 - 2
eveningprimroses	Oenothera spp.	OENOT	7	0 - 12	0 - 2
fringed sagewort	Artemisia frigida	ARFR4	7	0 - 12	0 - 2
greenthreads	Thelesperma spp.	THELE	7	0 - 12	0 - 2
groundsels	Senecio spp.	SENEC	7	0 - 12	0 - 2
hairy goldaster	Heterotheca villosa	HEVI4	7	0 - 12	0 - 2
lemon scurfpea	Psoralidium lanceolatum	PSLA3	7	0 - 12	0 - 2
nailworts	Paronychia spp.	PARON	7	0 - 12	0 - 2
penstemons	Penstemon spp.	PENST	7	0 - 12	0 - 2
phlox	Phlox spp.	PHLOX	7	0 - 12	0 - 2
prairie clovers	Dalea spp.	DALEA	7	0 - 12	0 - 2
pussytoes	Antennaria spp.	ANTEN	7	0 - 12	0 - 2
sandworts	Arenaria spp.	ARENA	7	0 - 12	0 - 2
scarlet gaura	Gaura coccinea	GACO5	7	0 - 12	0 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	7	0 - 12	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 12	0 - 2
other perennial forbs (native)		2FP	7	0 - 28	0 - 5
SHRUBS AND HALF-SHRUBS			8	0 - 28	0 - 5
yucca	Yucca glauca	YUGL	8	0 - 28	0 - 5
brittle cactus	Opuntia fragilis	OPFR	8	0 - 12	0 - 2
broom snakeweed	Gutierrezia sarothrae	GUSA2	8	0 - 12	0 - 2
plains pricklypear	Opuntia polyacantha	OPPO	8	0 - 12	0 - 2
other shrubs and half-shrubs (native)		2SHRUB	8	0 - 28	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.

Little Bluestem, Needleandthread and 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 75-85% grasses, 15-20% forbs, and 0-5% woody plants. Mid-grasses dominate the community. The principal grasses are little bluestem, blue grama and needleandthread. Secondary grasses are sideoats grama, bluebunch wheatgrass and western wheatgrass. Threadleaf sedge occurs as an understory. Dominant forbs are prairie clovers, dotted gayfeather, fringed sagewort, winterfat, hairy goldaster, buckwheats, and lemon scurfpea. Other plants in the community are yucca and pricklypear cactus. Currant and skunkbush sumac are found in rock outcrop areas where there is somewhat of a microclimate.

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	360	435	510
FORB	80	100	120
SHRUB	10	15	20
TREE	0	0	0
TOTAL	450	550	650

15-17” P.Z.

	LOW	AVG	HIGH
GRASS/GRASSLIKE	385	480	575
FORB	80	105	130
SHRUB	10	15	20
TREE	0	0	0
TOTAL	475	600	725

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	20	25	25	15	5	0	0	0

(monthly percentages of total annual growth)

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

- Frequent and severe defoliation of mid-grasses will move this plant community to the *Blue Grama and Needleandthread Plant Community*. The highly palatable plants are removed causing a decrease in diversity and productivity.
- No Use and No Fire will move this plant community to the *Low Plant Density, Decadent Plant Community*. Lack of use causes the plants to become less vigorous, crowns of plants begin to die, and plant canopy begins to open up with more bare ground apparent.

Blue Grama and Needleandthread Plant Community

This plant community developed with frequent and severe defoliation during the growing season. The dominant grasses include blue grama, and needleandthread. Little bluestem is still present as a secondary grass in the community. Significant forbs include phlox, sandwort, hairy goldaster, western ragweed, slimflower scurfpea, fringed sagewort and green sagewort. Other plants are yucca, broom snakeweed, and pricklypear cactus. Compared to HCPC, little bluestem has decreased. Needleandthread, blue grama, and undesirable forbs have increased.

Management changes cannot easily move this plant community toward HCPC. Soil erosion is moderate. Infiltration is minimal because runoff is high. Areas that are devoid of vegetation are subject to extreme erosion and runoff.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 400 pounds per acre during an average year, but it can range from about 300 pounds per acre in unfavorable years to about 500 pounds per acre in above average years.

In the 15 to 17 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 350 pounds per acre in unfavorable years to about 550 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	15	25	20	20	15	5	0	0	0

(monthly percentages of total annual growth)

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

- Frequent and severe defoliation of mid-grasses will move this plant community to the *Blue Grama Sod, Threadleaf Sedge, Threeawns, Bare Ground, Annuals Plant Community*. Weedy species are starting to invade, and almost all mid-grasses are removed resulting in a decrease in palatable forage.
- Prescribed Grazing will shift this plant community towards the *Little Bluestem, Needleandthread, Blue Grama Plant Community (HCPC)*. The advantage of having this plant community at HCPC is increased desirable plant diversity, production and soil organic matter.

Low Plant Density, Decadent Plant Community

This plant community developed under many years with no defoliation and no fire. In advanced stages, plant vigor can become greatly reduced. Organic matter tends to oxidize in the air rather than being incorporated into the soil. Bunchgrasses typically develop dead centers and rhizomatous wheatgrasses form small communities because of a lack of stimulation by grazers. Decadence and mortality will increase with time. Compared to the HCPC little bluestem and perennial forbs have decreased.

Management changes can easily shift this plant community. Areas that are devoid of vegetation due to mortality are subject to high erosion by wind and water.

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 400 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 450 pounds per acre in unfavorable years to about 650 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	30	30	15	5	0	0	0

(monthly percentages of total annual growth)

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

- Prescribed Grazing will shift this plant community towards the *Little Bluestem, Needleandthread, Blue Grama Plant Community (HCPC)*. The advantage of having this Plant Community at HCPC is increased desirable plant diversity, production, plant vigor and soil organic matter.

Blue Grama Sod, Threadleaf Sedge, Threawns, Bare Ground, Annuals Plant Community

This plant community developed under frequent and severe defoliation during the growing season. The dominant grasses include blue grama, threadleaf sedge, threawn, and annual grasses. Mid-grasses are still evident as remnant plants. The dominant forbs are fringed sagewort, western ragweed, phlox, sandwort, buckwheat and green sagewort. Other plants are yucca and pricklypear cactus. Compared to HCPC, nearly all the mid-grasses are gone and weedy species have invaded the area. Undesirable grasses, forbs and other plants have increased.

Management changes cannot easily move this plant community toward HCPC. Soil erosion is severe. Infiltration is minimal because runoff is high. Areas that are devoid of vegetation are subject to extreme erosion and runoff.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 275 pounds per acre during an average year, but it can range from about 225 pounds per acre in unfavorable years to about 325 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 300 pounds per acre during an average year, but it can range from about 250 pounds per acre in unfavorable years to about 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	15	35	25	15	5	5	0	0	0

(monthly percentages of total annual growth)

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

- Long Term Frequent and Severe Defoliation of Mid-Grasses will move this plant community towards the *Bare Ground, Broken Blue Grama sod, Phlox, Sandwort and Annuals Plant Community*. The blue grama is the primary species and mid-grasses are no longer in the community resulting in a community that is low in diversity and production.
- Very Long Term Prescribed Grazing will move this plant community towards the *Blue Grama and Needleandthread (HCPC) Plant Community*. Moving towards HCPC will increase production, desirable plant diversity and reduce soil erosion.

Bare Ground, Broken Blue Grama Sod, Phlox, Sandwort and Annuals Plant Community

This plant community is caused by long-term frequent and severe defoliation during the growing season. The dominant plant is blue grama. Yucca and cactus occur as secondary plants. Mid-grasses are non-existent in this plant community. Compared to HCPC, all desirable grasses and forbs are removed.

Management changes cannot easily move this plant community toward HCPC. Soil erosion is severe. Infiltration is minimal because runoff is high. Areas that are devoid of vegetation are subject to extreme erosion and runoff.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 275 pounds per acre during an average year, but it can range from about 225 pounds per acre in unfavorable years to about 325 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 300 pounds per acre during an average year, but it can range from about 250 pounds per acre in unfavorable years to about 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	20	40	30	10	0	0	0	0	0

(monthly percentages of total annual growth)

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

- Long Term Prescribed Grazing will move this plant community towards *Blue Grama sod, Threadleaf Sedge, Threeawns, Bare Ground and Annuals Plant Community*. Moving towards HCPC will increase production, desirable plant diversity and reduce soil erosion.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Little bluestem, Needleandthread, Blue grama Plant Community: 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 nighthawks will utilize this community for nesting.

Blue grama, Needleandthread Plant 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, Threadleaf sedge, Threeawns, Bare ground, Annuals Plant 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, Broken blue grama sod, Phlox, Sandwort and Annuals Plant Community: Sparse vegetation and greater amounts of bare ground provide suitable habitat for 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. Pronghorn may find limited forage in this community.

Low Plant Density, Decadent plants Community: This community has low habitat value for most wildlife species. Horned larks may nest in this community. Jackrabbits are frequent users of this community.

Rangeland Interpretations
Page 12

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

Common Name	Scientific Name	Symbol	Cattle	Sheep	Horses	Antelope	Deer	Elk
GRASSES/GRASSLIKES								
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>	ELTRT	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
FORBS								
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	UDUU	UDDU
blue-eyed grass	<i>Sisyrinchium spp.</i>	SISYR	UDUU	UPPU	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	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN

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

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
TREES, SHRUBS, AND HALF-SHRUBS								
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	PDDP	PDDP	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.

Plant Community 12-14" Precipitation	Production (lbs./acre)	Carrying Capacity (AUM/acre)
Little Bluestem, Needleandthread, Blue Grama (HCPC)	550	0.17
Blue Grama and Needleandthread	400	0.13
Blue Grama Sod, Threadleaf Sedge, Threawns, Bare Ground & Annuals	275	0.09
Bare Ground, Broken Blue Grama Sod, Phlox, Sandwort & Annuals	275	0.05
Increased Bare Ground, Decadent Plants	500	0.15

Plant Community 15-17" Precipitation	Production (lbs./acre)	Carrying Capacity (AUM/acre)
Little Bluestem, Needleandthread, Blue Grama (HCPC)	600	0.20
Blue Grama and Needleandthread	450	0.15
Blue Grama Sod, Threadleaf Sedge, Threawns, Bare Ground & Annuals	300	0.10
Bare Ground, Broken Blue Grama Sod, Phlox, Sandwort & Annuals	300	0.07
Increased Bare Ground, Decadent Plants	550	0.17

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 moderate to moderately high depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for higher 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.

Similar Sites

(R067XY114WY) – Gravelly Loamy 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, 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