

# United States Department of Agriculture Natural Resources Conservation Service

## Ecological Site Description

**Site Type:** Rangeland

**Site Name:** Subirrigated 12-17” Precipitation Zone

**Site ID:** R067AY174WY

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

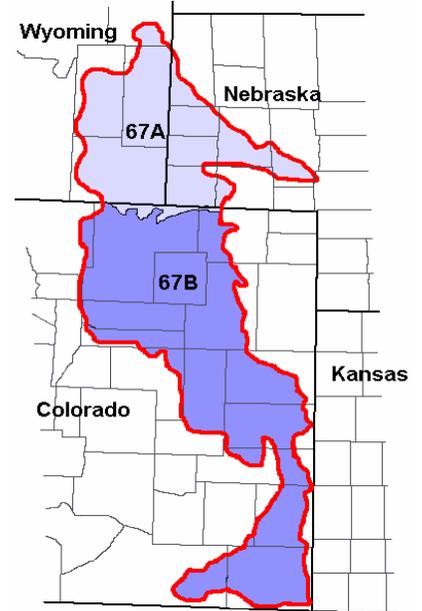
### Physiographic Features

This site occurs on nearly level bottomlands and alluvial fans adjacent to streams, springs and ponds.

**Landform:** alluvial fans, stream terraces

**Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	3800	5100
<b>Slope (percent):</b>	0	6
<b>Water Table Depth (inches):</b>	12	40
<b>Flooding:</b>		
<b>Frequency:</b>	rare	occasional
<b>Duration:</b>	very brief	very brief
<b>Ponding:</b>		
<b>Depth (inches):</b>	0	0
<b>Frequency:</b>	none	none
<b>Duration:</b>	none	none
<b>Runoff Class:</b>	negligible	low



### 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:** C (Rosgen)

## Representative Soil Features

The soils of this site are deep to very deep moderately well drained and formed in alluvium. These soils have water tables below the surface for all of the growing season. The water table is non-saline and non-alkaline.

Major Soil Series correlated to this site include: Cattle, Chalkcreek, Dalecreek, Kovich (cool), Merden (cool), Fluvaquents, Torrifluvents, Platte, Otero variant, Yockey, Bankard, Gering, Las Animas, McGrew

Other Soil Series correlated to this site include: none

**Parent Material Kind:** alluvium

**Parent Material Origin:** sandstone, shale

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

**Surface Texture Modifier:** none

**Subsurface Texture Group:** loamy

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

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

**Subsurface Fragments ≤ 3” (% Volume):** 0

**Subsurface Fragments > 3” (% Volume):** 0

	<u>Minimum</u>	<u>Maximum</u>
<b>Drainage Class:</b>	poorly	moderately well
<b>Permeability Class:</b>	moderately slow	moderately rapid
<b>Depth (inches):</b>	20	>60
<b>Electrical Conductivity (mmhos/cm) ≤20”:</b>	0	8
<b>Sodium Absorption Ratio ≤20”:</b>	0	10
<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>	2.8	6.2
<b>Calcium Carbonate Equivalent (percent) ≤20”:</b>	0	10

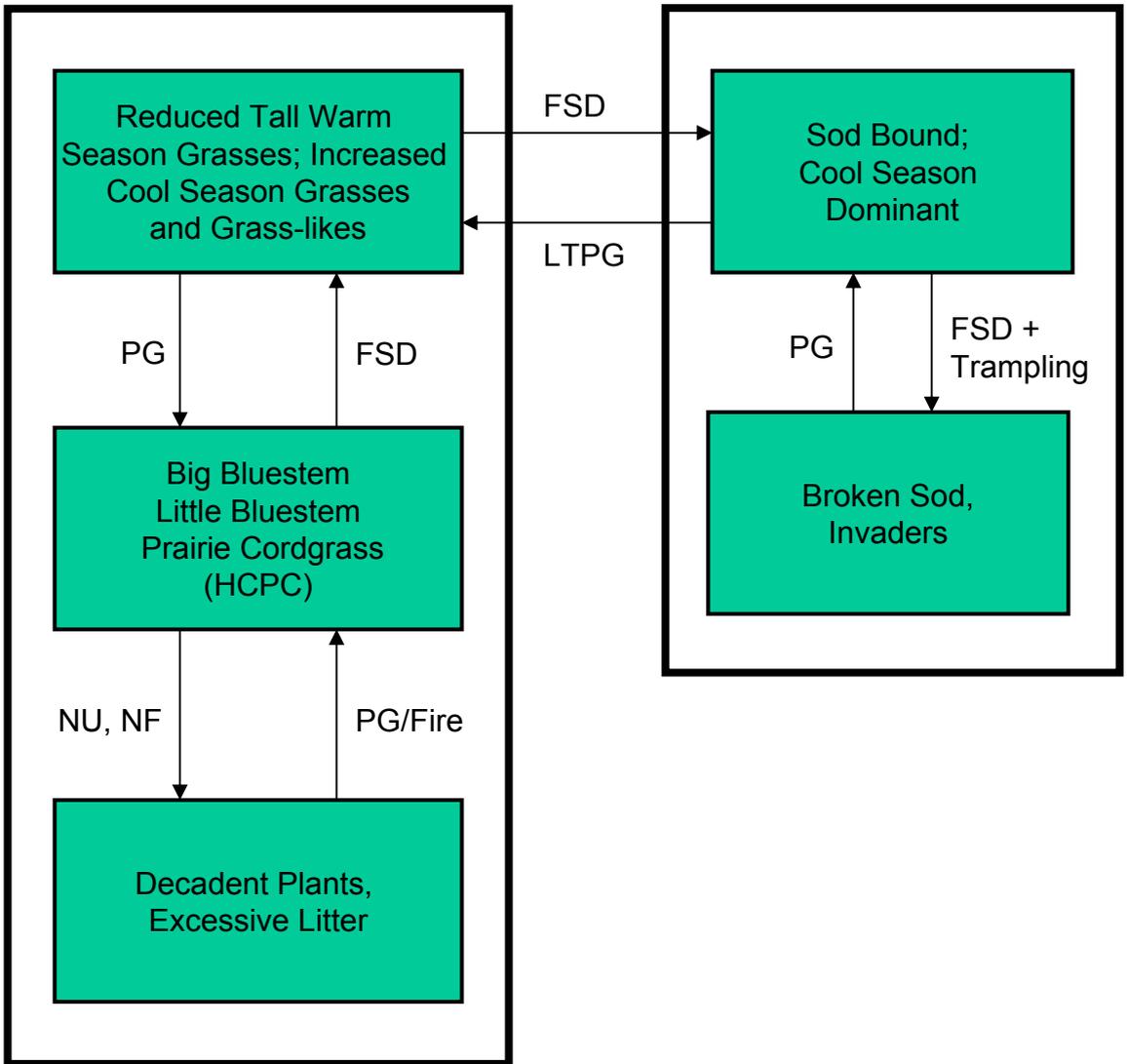
## **Plant Communities**

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

As this site deteriorates from a combination of frequent and severe grazing, species such as Baltic rush, scouring rush and other various grass-like species will increase forming a cool season dominated plant community. Kentucky bluegrass will invade and eventually become sod-bound. Grasses such as big bluestem, little bluestem, prairie cordgrass, Indiangrass, and switchgrass will decrease in frequency and production and can eventually be removed from the site. As the site continues to deteriorate, bare ground may increase depending on water table depth. Kentucky bluegrass will persist in a broken sod appearance. Plants such as Dalmatian toadflax, kochia, and leafy spurge will invade the site. Excessive litter, decadence and plant mortality can result from the lack of fire or non-use.

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 severe defoliation,  
**HCPC** - Historic Climax Plant Community,  
**LTPG** - long-term prescribed grazing (>20 years),  
**NF, NU** - no fire, non-use,  
**PG** - prescribed grazing with adequate recovery opportunity

**Plant Community Composition and Group Annual Production**  
**Big Bluestem, Little Bluestem, Prairie Cordgrass Plant Community (HCPC)**

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			<b>Total: 4000</b>		
<b>GRASSES AND GRASS-LIKES</b>					
<b>WARM-SEASON MID-TALL GRASSES</b>			<b>1</b>	<b>2400 - 2600</b>	<b>60 - 65</b>
big bluestem	Andropogon gerardii	ANGE	1	800 - 1000	20 - 25
little bluestem	Schizachyrium scoparium	SCSC	1	600 - 800	15 - 20
prairie cordgrass	Spartia pectinata	SPPE	1	400 - 600	10 - 15
Indiangrass	Sorghastrum nutans	SONU2	1	200 - 600	5 - 15
switchgrass	Panicum virgatum	PAVI2	1	200 - 400	5 - 10
<b>COOL-SEASON MID-TALL GRASSES</b>			<b>2</b>	<b>400 - 800</b>	<b>10 - 20</b>
western wheatgrass	Pascopyrum smithii	PASM	2	200 - 400	5 - 10
slender wheatgrass	Elymus trachycaulus	ELTR7	2	200 - 400	5 - 10
basin wildrye	Leymus cinereus	LECI4	2	0 - 400	0 - 10
<b>SEDGES AND RUSHES</b>			<b>3</b>	<b>200 - 400</b>	<b>5 - 10</b>
sedges	Carex spp.	CAREX	3	200 - 400	5 - 10
Baltic rush	Juncus balticus	JUBA	3	0 - 80	0 - 2
bulrush	Scirpus spp.	SCIRP	3	0 - 80	0 - 2
rushes	Juncus spp.	JUNCU	3	0 - 80	0 - 2
spikerush	Eleocharis spp.	ELEOC	3	0 - 80	0 - 2
<b>MISCELLANEOUS GRASSES</b>			<b>4</b>	<b>200 - 400</b>	<b>5 - 10</b>
alkali sacaton	Sporobolus airoides	SPAI	4	0 - 200	0 - 5
bluegrasses	Poa spp.	POA	4	0 - 200	0 - 5
Canada wildrye	Elymus canadensis	ELCA4	4	0 - 200	0 - 5
foxtail barley	Hordeum jubatum	HOJU	4	0 - 200	0 - 5
switchgrass	Panicum virgatum	PAVI2	4	0 - 200	0 - 5
other perennial grasses (native)		2GP	4	0 - 200	0 - 5
<b>FORBS</b>			<b>5</b>	<b>200 - 400</b>	<b>5 - 10</b>
American licorice	Glycyrrhiza lepidota	GLLE3	5	0 - 80	0 - 2
arrowgrass	Triglochin spp.	TRIGL	5	0 - 80	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	5	0 - 80	0 - 2
false boneset	Brickellia eupatorioides	BREU	5	0 - 80	0 - 2
heath aster	Symphyotrichum ericoides	SYER	5	0 - 80	0 - 2
maximilian sunflower	Helianthus maximiliani	HEMA2	5	0 - 80	0 - 2
milkvetches	Astagalus spp.	ASTRA	5	0 - 80	0 - 2
Pennsylvania smartweed	Polygonum pennsylvanicum	POPE2	5	0 - 80	0 - 2
Pursh seepweed	Suaeda calceoliformis	SUCA2	5	0 - 80	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	5	0 - 80	0 - 2
scouringrush	Equisetum spp.	EQUIS	3	0 - 80	0 - 2
other perennial forbs (native)		2FP	5	0 - 200	0 - 5
<b>SHRUBS</b>			<b>6</b>	<b>0 - 400</b>	<b>0 - 10</b>
willows	Salix spp.	SALIX	6	0 - 400	0 - 10
roses	Rosa spp.	ROSA5	6	0 - 200	0 - 5
silver buffaloberry	Shepherdia argentea	SHAR	6	0 - 200	0 - 5
western snowberry	Symphoricarpos occidentalis	SYOC	6	0 - 200	0 - 5
other shrubs and half-shrubs (native)		2SHRUB	6	0 - 200	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**  
**Big Bluestem, Little Bluestem, Prairie Cordgrass Plant Community (HCPC)**

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			<b>Total: 4500</b>		
<b>GRASSES AND GRASS-LIKES</b>					
<b>WARM-SEASON MID-TALL GRASSES</b>			<b>1</b>	<b>2700 - 2925</b>	<b>60 - 65</b>
big bluestem	Andropogon gerardii	ANGE	1	900 - 1125	20 - 25
little bluestem	Schizachyrium scoparium	SCSC	1	675 - 900	15 - 20
prairie cordgrass	Spartia pectinata	SPPE	1	450 - 675	10 - 15
Indiangrass	Sorghastrum nutans	SONU2	1	225 - 675	5 - 15
switchgrass	Panicum virgatum	PAVI2	1	225 - 450	5 - 10
<b>COOL-SEASON MID-TALL GRASSES</b>			<b>2</b>	<b>450 - 900</b>	<b>10 - 20</b>
western wheatgrass	Pascopyrum smithii	PASM	2	225 - 450	5 - 10
slender wheatgrass	Elymus trachycaulus	ELTR7	2	225 - 450	5 - 10
basin wildrye	Leymus cinereus	LECI4	2	0 - 450	0 - 10
<b>SEDGES AND RUSHES</b>			<b>3</b>	<b>225 - 450</b>	<b>5 - 10</b>
sedges	Carex spp.	CAREX	3	225 - 450	5 - 10
Baltic rush	Juncus balticus	JUBA	3	0 - 90	0 - 2
bulrush	Scirpus spp.	SCIRP	3	0 - 90	0 - 2
rushes	Juncus spp.	JUNCU	3	0 - 90	0 - 2
spikerush	Eleocharis spp.	ELEOC	3	0 - 90	0 - 2
<b>MISCELLANEOUS GRASSES</b>			<b>4</b>	<b>225 - 450</b>	<b>5 - 10</b>
alkali sacaton	Sporobolus airoides	SPAI	4	0 - 225	0 - 5
bluegrasses	Poa spp.	POA	4	0 - 225	0 - 5
Canada wildrye	Elymus canadensis	ELCA4	4	0 - 225	0 - 5
foxtail barley	Hordeum jubatum	HOJU	4	0 - 225	0 - 5
switchgrass	Panicum virgatum	PAVI2	4	0 - 225	0 - 5
other perennial grasses (native)		2GP	4	0 - 225	0 - 5
<b>FORBS</b>			<b>5</b>	<b>225 - 450</b>	<b>5 - 10</b>
American licorice	Glycyrrhiza lepidota	GLLE3	5	0 - 90	0 - 2
arrowgrass	Triglochin spp.	TRIGL	5	0 - 90	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	5	0 - 90	0 - 2
false boneset	Brickellia eupatorioides	BREU	5	0 - 90	0 - 2
heath aster	Symphyotrichum ericoides	SYER	5	0 - 90	0 - 2
maximilian sunflower	Helianthus maximiliani	HEMA2	5	0 - 90	0 - 2
milkvetches	Astagalus spp.	ASTRA	5	0 - 90	0 - 2
Pennsylvania smartweed	Polygonum pennsylvanicum	POPE2	5	0 - 90	0 - 2
Pursh seepweed	Suaeda calceoliformis	SUCA2	5	0 - 90	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	5	0 - 90	0 - 2
scouringrush	Equisetum spp.	EQUIS	3	0 - 90	0 - 2
other perennial forbs (native)		2FP	5	0 - 225	0 - 5
<b>SHRUBS</b>			<b>6</b>	<b>0 - 450</b>	<b>0 - 10</b>
willows	Salix spp.	SALIX	6	0 - 450	0 - 10
roses	Rosa spp.	ROSA5	6	0 - 225	0 - 5
silver buffaloberry	Shepherdia argentea	SHAR	6	0 - 225	0 - 5
western snowberry	Symphoricarpos occidentalis	SYOC	6	0 - 225	0 - 5
other shrubs and half-shrubs (native)		2SHRUB	6	0 - 225	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.

### Big Bluestem, Little Bluestem, Prairie Cordgrass 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 occurred infrequently. The potential vegetation is about 80-95% grasses and grass-like, 5-10% forbs, and 0-10% woody plants by air-dry weight.

Tall and mid warm-season grasses dominate this community. The major grasses include big bluestem, little bluestem, prairie cordgrass, Indiangrass and switchgrass. Other grasses and grass-like occurring on the community include western wheatgrass, Canada wildrye, Baltic rush, spikerushes, and bulrushes. Key forbs and shrubs include American licorice, maximilian sunflower, clovers, milkvetches and willows.

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	3065	3500	3935
FORB	260	300	340
SHRUB	175	200	225
TREE	0	0	0
TOTAL	3500	4000	4500

15-17”P.Z.

	LOW	AVE	HIGH
GRASS/GRASSLIKE	3495	3935	4375
FORB	305	340	375
SHRUB	200	225	250
TREE	0	0	0
TOTAL	4000	4500	5000

The following is the growth curve of this plant community expected during a normal 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	15	10	5	5	0	0

(monthly percentages of total annual growth)

This plant community is diverse, stable, productive and is well adapted to the Northern Great Plains. The high water table supplies much of the moisture for plant growth. Plant litter is properly distributed with little movement and natural plant mortality is very low. 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 will shift this plant community to the *Reduced Tall/Mid Warm Season Grasses; Increased Cool Season Grasses and Grass-likes Plant Community*.
- Non-use and no fire will convert this plant community to the *Decadent Plants, Excessive Litter Plant Community*. Initially, excess litter begins to build-up. Eventually native plants can show signs of mortality and decadence.

### **Reduced Tall Warm Season Grasses; Increased Cool Season Grasses and Grass-likes Plant Community**

This plant community developed under frequent and severe defoliation without periodic rest. Big bluestem, prairie cordgrass, Indiangrass, switchgrass, and Canada wildrye have been significantly reduced. Little bluestem may initially increase or decrease depending upon the season of use. Kentucky bluegrass has begun to invade. Forbs and shrubs are still present in small amounts. This plant community is at risk of losing tall warm season grasses, palatable forbs and shrubs.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 2,800 pounds per acre during an average year, but it can range from about 2,200 pounds per acre in unfavorable years to about 3,400 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 3,200 pounds per acre during an average year, but it can range from about 2,600 pounds per acre in unfavorable years to about 3,800 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	3	5	15	30	20	20	5	2	0	0

(monthly percentages of total annual growth)

This community indicates key management concerns. Prescribed grazing at this point will stabilize the community at or near the HCPC, while increased disturbance can easily move the community to a more degraded state.

While plant diversity has been reduced, the soil is stable. The water cycle, nutrient cycle and energy flow is slightly reduced but continues to adequately function.

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

- Frequent and severe defoliation shifts this plant community to the *Sod Bound; Cool Season Dominant Plant Community*.

- Prescribed grazing with adequate recovery opportunity between grazing events will restore this community back to the *Big Bluestem, Little Bluestem, Prairie Cordgrass Plant Community (HCPC)*.

### **Decadent Plants, Excessive Litter Plant Community**

This plant community occurs after an extended period of non-use, and where fire has been eliminated. The dominant plants tend to be similar to those found in the Historic Climax Plant Community, however in advanced stages, frequency and production can be lower.

Litter amounts have increased causing plants to become decadent. Much of the plant nutrients are tied up in excessive litter. Organic matter oxidizes in the air rather than being incorporated into the soil due to the absence of animal impact. Typically, bunchgrasses (little bluestem) develop dead centers and rhizomatous grasses (prairie cordgrass) form small colonies because of a lack of tiller stimulation.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 3,500 pounds per acre during an average year, but it can range from about 3,100 pounds per acre in unfavorable years to about 3,900 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 3,800 pounds per acre during an average year, but it can range from about 3,400 pounds per acre in unfavorable years to about 4,200 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	35	25	15	5	0	0	0

(monthly percentages of total annual growth)

This plant community is not resistant to change. Grazing or fire can easily move it toward the HCPC. Soil erosion is not a concern due to increased litter levels and landscape position.

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

- Prescribed grazing or fire will shift this plant community towards the *Big Bluestem, Little Bluestem, Prairie Cordgrass Plant Community (HCPC)*.

### **Sod Bound; Cool Season Dominant Plant Community**

This plant community developed with further frequent and severe defoliation. The plant community is predominantly cool season grasses and grass-like. Kentucky bluegrass has fully invaded the community and persists in a sod-bound condition. Baltic rush, various sedges, and foxtail barley have increased. Remnant amounts of western wheatgrass may still persist in localized colonies. Big bluestem, little bluestem, prairie cordgrass, Indiangrass, and switchgrass have been removed. Forbs such as annual kochia and Russian thistle have also invaded.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 2,000 pounds per acre during an average year, but it can range from about 1,600 pounds per acre in unfavorable years to about 2,400 pounds per acre in above average years.

Site Type: Rangeland  
MLRA: 67 – North Central High Plains

**Subirrigated 12-17” P.Z.  
R067AY174WY**

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 2,300 pounds per acre during an average year, but it can range from about 1,800 pounds per acre in unfavorable years to about 2,800 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	10	40	25	15	5	0	0	0

(monthly percentages of total annual growth)

This community remains stable but has lost much of its production and diversity. The nutrient cycle is impaired due to the loss of warm season grass species, deep-rooted forbs (legumes and others) and shrubs. Soil compaction can be a concern if continuously grazed during wet cycles. It will take a long time to bring this plant community back to the HCPC with management alone. Renovation would be very costly due to the high water table.

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

- Continued frequent and severe defoliation with trampling will eventually shift this plant community to the *Broken Sod, Invaders Plant Community*.
- Long-term prescribed grazing will move this plant community to the *Reduced Tall Warm Season Grasses, Increased Cool Season Grasses and Grass-likes Plant Community* and will eventually return to the HCPC or associated successional plant stages assuming an adequate seed/vegetative source is available. This process will require a long period of time and may be difficult to attain depending on the degree of degradation.

### **Broken Sod, Invaders Community**

This plant community develops with further frequent and severe defoliation and trampling during the growing season. High stock densities have resulted in trampling of the vegetation and compaction of the soil surface. Kentucky bluegrass still dominates the community, however areas of sod have been removed resulting in a broken sod-bound appearance. Bare ground may be a concern if water table levels are low. Dalmatian toadflax, cheatgrass and leafy spurge tend to invade.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 1,600 pounds per acre during an average year, but it can range from about 1,300 pounds per acre in unfavorable years to about 1,900 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 1,800 pounds per acre during an average year, but it can range from about 1,400 pounds per acre in unfavorable years to about 2,200 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	10	40	25	15	5	0	0	0

(monthly percentages of total annual growth)

Compared to the Historic Climax Plant Community, all perennial plants have been greatly reduced with only remnants of the most grazing tolerant species remaining. Plant diversity and production are very low. Planned rest periods during the growing season will improve the vigor of the plant species present.

Wind and water erosion may occur if bare ground has increased. Litter amounts are greatly reduced. Mineral crusting caused by raindrop impact disrupts surface soil aggregates, increasing ponding and slowing infiltration. Continued heavy use will cause severe compaction problems. Animal wastes can contaminate ground water or runoff.

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

- Prescribed grazing will move this plant community back to the *Sod Bound; Cool Season Dominant Plant Community*.

## **Ecological Site Interpretations**

### **Animal Community – Wildlife Interpretations**

**Big Bluestem, Little Bluestem, Prairie Cordgrass Community (HCPC):** The lack of shrubs in this plant community affects the expected wildlife species. Bird species expected include lark and grasshopper sparrow, chestnut collared longspur, lark bunting, western meadowlark, and ferruginous and Swainson’s hawks. This site provides excellent nesting habitat for pheasant and waterfowl if other habitat elements such as cropland and shallow water are nearby.

**Reduced Tall Warm Season Grasses; Increased Cool Season Grasses and Grass-likes Community:** All HCPC species are expected in these plant communities. However, the reduction in the tall grass species in these plant communities make them less attractive to many HCPC species.

**Sod Bound; Cool Season Dominant Community:** The shift away from tall grasses to short and mid grasses and grass-like species results in a change in bird species to killdeer, McCown's longspur, horned lark, and long-billed curlew.

**Broken Sod, Invaders Community:** The shift away from tall grasses to short and mid grasses and grass-like species results in a change in bird species to killdeer, McCown's longspur, horned lark, and long-billed curlew.

**Decadent Plants, Excessive Litter Community:** All HCPC species are expected in this plant community, however, the reduction in the tall grass species in these plant communities make them less attractive to many species.

**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
<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	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
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	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
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	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
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>	CASTI3	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	UUDU	NUNN	UUDU	NUNN	NUNN	UUDU
plains bluegrass	<i>Poa arida</i>	POAR3	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
plains muhly	<i>Muhlenbergia cuspidata</i>	MUCU3	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
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	UUDU	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	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
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
<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	UUDU	UDDU	UUDU	UDDU	UDDU	UDDU
blue-eyed grass	<i>Sisyrinchium spp.</i>	SISYR	UUDU	UUPU	UUDU	UUDU	UUDU	UUDU
breadroot	<i>Pediomelum spp.</i>	PEDIO2	NUUN	UDUU	NUUN	UDUU	UDUU	UDUU
broadleaf cattail	<i>Typha latifolia</i>	TYLA	UUDU	UUUU	UUDU	UUUU	UUDU	UUDU
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	UUDU	UUUU	UUDU	UUDU	UUDU
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

**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
<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>
Big Bluestem, Little Bluestem, Prairie Cordgrass (HCPC)	4000	1.40
Reduced Tall Warm Season; Increased Cool Season Grasses	2800	1.00
Sod Bound; Cool Season Dominant	2000	0.70
Broken Sod, Invaders	1600	0.50
Decadent Plants, Excess Litter	3500	1.20

<b>Plant Community 15-17” Precipitation</b>	<b>Production (lbs./acre)</b>	<b>Carrying Capacity (AUM/acre)</b>
Big Bluestem, Little Bluestem, Prairie Cordgrass (HCPC)	4500	1.50
Reduced Tall Warm Season; Increased Cool Season Grasses	3200	1.10
Sod Bound; Cool Season Dominant	2300	0.80
Broken Sod, Invaders	1800	0.60
Decadent Plants, Excess Litter	3800	1.30

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

Climate 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 moderately rapid. Runoff potential for this site varies from moderate to high 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

- (R067AY124WY) – Loamy Lowland 12-17” P.Z.
- (R067AY178WY) – Wetland 12-17” P.Z.
- (R067AY152WY) – Sandy Lowland 12-17” P.Z.

### Similar Sites

- (R067AY142WY) – Saline Subirrigated 12-17” P.Z. has more salt tolerant species

### 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 Type: Rangeland  
MLRA: 67 – North Central High Plains

**Subirrigated 12-17” P.Z.  
R067AY174WY**

## Site Description Approval

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State Range Management Specialist

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Date

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State Range Management Specialist

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Date

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State Range Management Specialist

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Date

## Ecological Reference Worksheet

Author(s)/participant(s): \_\_\_\_\_  
 Contact for lead author: \_\_\_\_\_ Reference site used? Yes/No  
 Date: \_\_1/05\_\_ MLRA: \_\_67A\_\_ Ecological Site: R067AY174WY Subirrigated (Sb)

\_\_\_\_ This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

<p><b>Indicators.</b> For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for <b>each</b> community within the reference state, when appropriate &amp; (3) cite data. Continue descriptions on separate sheet.</p>
<p><b>1. Number and extent of rills:</b> Rills should not be present</p>
<p><b>2. Presence of water flow patterns:</b> Barely observable</p>
<p><b>3. Number and height of erosional pedestals or terracettes:</b> Essentially non-existent</p>
<p><b>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are <i>not</i> bare ground):</b> Bare ground is less than 5%</p>
<p><b>5. Number of gullies and erosion associated with gullies:</b> Active gullies should not be present</p>
<p><b>6. Extent of wind scoured, blowouts and/or depositional areas:</b> None</p>
<p><b>7. Amount of litter movement (describe size and distance expected to travel):</b> Little to no plant litter movement. Plant litter remains in place and is not moved by erosional forces.</p>
<p><b>8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different):</b> Plant cover and litter is at 95% or greater of soil surface and maintains soil surface integrity. Soil Stability class is anticipated to be 5 or greater.</p>
<p><b>9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different):</b> Use Soil Series description for depth and color of A-horizon</p>
<p><b>10. Effect of plant community composition (relative proportion of different functional groups) &amp; spatial distribution on infiltration &amp; runoff:</b> Grass canopy and basal cover should reduce raindrop impact and slow overland flow providing increased time for infiltration to occur. Healthy deep rooted native grasses enhance infiltration and reduce runoff. Infiltration is moderately slow to moderately rapid.</p>
<p><b>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):</b> No compaction layer or soil surface crusting should be present.</p>
<p><b>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: &gt;&gt;, &gt;, = to indicate much greater than, greater than, and equal to):</b> Tall and Mid stature Warm Season Grasses &gt; Tall and Mid stature Cool Season Grasses &gt; Short stature Grasses/Grasslike &gt; Forbs &gt; Shrubs</p>
<p><b>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):</b> Very Low</p>
<p><b>14. Average percent litter cover and depth :</b> Average litter cover is 50-55% with depths of 0.75 to 1.5 inches</p>
<p><b>15. Expected annual production (this is all above-ground production, not just forage production):</b> 12"-14" Precipitation Zone = 4000 lbs/ac 15"-17" Precipitation Zone = 4500 lbs/ac</p>
<p><b>16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do, continue to increase regardless of the management of the site and may eventually dominate the site":</b> Smooth Brome, Kentucky Bluegrass, Russian Olive, and Species found on Noxious Weed List</p>
<p><b>17. Perennial plant reproductive capability:</b> All species are capable of reproducing</p>