

## United States Department of Agriculture Natural Resources Conservation Service

### Ecological Site Description

**Site Type:** Rangeland

**Site Name:** Impervious Clay (IC) 5-9” Big Horn Basin Precipitation Zone

**Site ID:** 032XY118WY

**Major Land Resource Area:** 32 – Northern Intermountain Desertic Basins

### Physiographic Features

This site occurs on nearly level up to 30% slopes.

**Landform:** Hillsides, ridges & escarpments

**Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	3700	6000
<b>Slope (percent):</b>	0	30
<b>Water Table Depth (inches):</b>	none within 60	
<b>Flooding:</b>		
<b>Frequency:</b>	none	none
<b>Duration:</b>	none	none
<b>Ponding:</b>		
<b>Depth (inches):</b>	0	0
<b>Frequency:</b>	none	none
<b>Duration:</b>	none	none
<b>Runoff Class:</b>	negligible	very high

### Climatic Features

Annual precipitation ranges from 5-9 inches per year. The normal precipitation pattern shows peaks in May and June and a secondary peak in September. This amounts to about 50% of the mean annual precipitation. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall is about 20 inches annually. 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.

High winds are generally blocked from the basin by high mountains, but can occur in conjunction with an occasional thunderstorm.

Growth of native cool-season plants begins about April 1 and continues to about July 1. Cool weather and moisture in September may produce some green up of cool season plants that will continue to late October.

The following information is from the “Emblem” climate station:

	<u>Minimum</u>	<u>Maximum</u>	<u>5 yrs. out of 10 between</u>
<b>Frost-free period (days):</b>	98	171	May 13 – September 19
<b>Freeze-free period (days):</b>	120	184	May 1 – October 5
<b>Mean Annual Precipitation (inches):</b>	3.22	10.97	

Mean annual precipitation: 7.42 inches

Mean annual air temperature: 45.01°F (31.2°F Avg. Min. to 58.7°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 “Basin”, “Deaver”, “Lovell”, and “Worland”.

## Influencing Water Features

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

**Stream Type:** None

## Representative Soil Features

The soils of this site are very shallow (less than 10”) to very deep, well to poorly drained soils formed in alluvium or alluvium over residuum. Layers of the soil most influential to the plant community varies from 3 to 6 inches thick. These soils have slow to very slow permeability. The topsoil, except for thin ineffectual layers, will be heavy clays and/or soils that develop large cracks when dry and are very sticky when wet. These sites typically have moderate saline and /or alkaline soils, but high amounts of soluble salt can occur. The soil characteristics having the most influence on plants are the very slow infiltration rate, which reduces the available moisture, and the amount of soluble salts.

Major Soil Series correlated to this site include:

Other Soil Series correlated to this site in MLRA 32 include:

**Parent Material Kind:** alluvial and residuum

**Parent Material Origin:** shale, calcareous sandstone

**Surface Texture:** clay, fine silty clay, fine sandy clay loam, clay loam

**Surface Texture Modifier:** none

**Subsurface Texture Group:** clay, silty clay, clay loam, sandy clay loam

**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>	poor	well
<b>Permeability Class:</b>	slow	very slow

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<b>Depth (inches):</b>	1	>60
<b>Electrical Conductivity (mmhos/cm) <math>\leq 20</math>"</b> :	0	18
<b>Sodium Absorption Ratio <math>\leq 20</math>"</b> :	0	30
<b>Soil Reaction (1:1 Water) <math>\leq 20</math>"</b> :	7.9	11.0
<b>Soil Reaction (0.1M CaCl<sub>2</sub>) <math>\leq 20</math>"</b> :	NA	NA
<b>Available Water Capacity (inches) <math>\leq 30</math>"</b> :	0.56	6.3
<b>Calcium Carbonate Equivalent (percent) <math>\leq 20</math>"</b> :	0	15

## Plant Communities

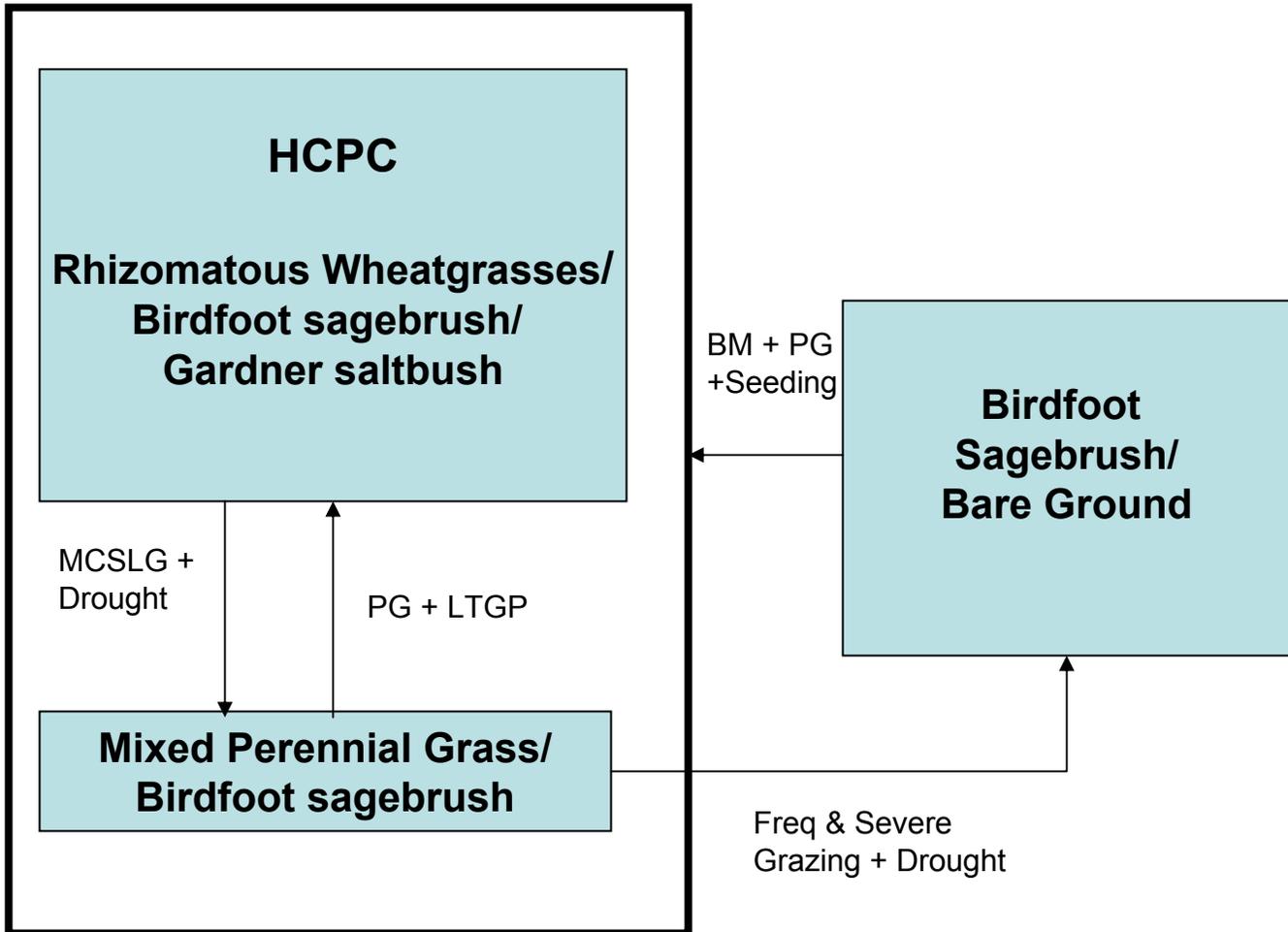
### Ecological Dynamics of the Site:

Potential vegetation on this site is dominated by salt tolerant, drought resistant, mid cool-season perennial grasses and shrubs. The expected potential composition for this site is about 50% grasses, 10% forbs and 40% woody plants. The composition and production will vary naturally due to historical use, fluctuating precipitation and fire frequency.

As this site deteriorates, species such as Sandberg bluegrass and birdfoot sagebrush will increase. Plains pricklypear and weedy annuals will invade. Cool season grasses such as rhizomatous wheatgrass, bottlebrush squirreltail, and Indian ricegrass will decrease in frequency and production.

The Historic Climax Plant Community (description follows the plant community 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 (states) 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.



- BM** - Brush Management (fire, chemical, mechanical)
- Freq. & Severe Grazing** - Frequent and Severe Utilization of the Cool-season Mid-grasses during the Growing Season
- GLMT** - Grazing Land Mechanical Treatment
- LTPG** - Long-term Prescribed Grazing
- MCSLG** - Moderate, Continuous Season-long Grazing
- NU, NF** - No Use and No Fire
- PG** - Prescribed Grazing (proper stocking rates with adequate recovery periods during the growing season)
- VLTPG** - Very Long-term Prescribed Grazing (could possibly take generations)
- WF** - Wildfire

**Plant Community Composition and Group Annual Production  
 Reference Plant Community (HCPC)**

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 200		
<b>GRASSES AND GRASS-LIKES</b>					
<b>GRASSES/GRASSLIKES</b>					
Bottlebrush squirreltail	Elymus elymoides	ELELE	1	30 - 50	15 - 25
Western wheatgrass	Pascopyrum smithii	PASM	2	10 - 30	5 - 15
Indian ricegrass	Achnatherum hymenoides	ACHY	3	10 - 30	5 - 15
Sandberg bluegrass	Poa secunda	POSE	4	0 - 10	0 - 5
other perennial grasses (native)		2GP	5	0 - 10	0 - 5
<b>FORBS</b>			<b>6</b>	<b>0 - 20</b>	<b>0 - 10</b>
Woody aster	Xylorhiza spp.	XYLOR	6	0 - 10	0 - 5
other perennial forbs (native)		2FP	6	0 - 10	0 - 5
<b>TREES/SHRUBS</b>					
Birdfoot sagebrush	Artemisia pedatifida	ARPE6	7	40 - 80	20 - 40
Bud sagebrush	Picrothamnus spp.	PICRO	8	0 - 20	0 - 10
Gardner's saltbrush	Atriplex gardneri	ATGA	9	0 - 20	0 - 10
Winterfat	Krascheninnikovia lanata	KRAL2	10	0 - 10	0 - 5
other shrubs & half shrubs (native)		2SHRUB	11	0 - 10	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 tables shown above have 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 (DPC’s) will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

**Rhizomatous Wheatgrasses/Birdfoot Sagebrush/Gardner Saltbush Plant Community**

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and very droughty soils due to the very slow infiltration rate. Potential vegetation is dominated by salt tolerant, drought resistant, mid cool-season perennial grasses and shrubs. The expected potential composition for this site is about 50% grasses, 10% forbs and 40% woody plants.

The major grasses include rhizomatous wheatgrasses, bottlebrush squirreltail, and Indian ricegrass. A variety of forbs and half-shrubs also occur, as shown in the preceding table. Birdfoot sagebrush and Gardner saltbush comprise almost half of the total annual production. Winterfat is a common component found on this site. A variety of forbs also occurs in this state and plant diversity is high (see Plant Composition Table).

The total annual production (air-dry weight) of this state is about 200 pounds per acre, but it can range from about 100 lbs/acre in unfavorable years to about 300 lbs./acre in above average years.

The following is the growth curve of this plant community expected during a normal year:

Growth curve number: WY0501

Growth curve name: 5-9BH, UPLAND SITES

Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

(Monthly percentages of total annual growth)

This state is extremely stable and well adapted to the Northern Great Plains climatic conditions. The diversity in plant species allows for high drought resistance. This is a sustainable plant community (site/soil stability, watershed function, and biologic integrity).

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

- Moderate, continuous season long grazing will convert this state to a *Mixed Perennial Grass/Birdfoot Sagebrush Plant Community*. Prolonged Drought will exacerbate this transition.

**Mixed Perennial Grass/Birdfoot Sagebrush Plant Community**

This plant community is the result of moderate continues season long grazing and is exacerbated by prolong drought conditions. Birdfoot sagebrush composes a significant percentage of the annual

production of plant community. Cool-season grasses make up the majority of the understory with the balance made up of short warm-season grasses, and miscellaneous forbs.

Dominant grasses include rhizomatous wheatgrasses, and bottlebrush squirreltail and Sandberg bluegrass. Forbs commonly found in this plant community include wild onion, scarlet globemallow, fringed sagewort, hairy goldaster, wild parsley, and phlox. Birdfoot Sagebrush can make up to 50% of the annual production. Plains pricklypear cactus can also occur.

When compared to the Historic Climax Plant Community, birdfoot sagebrush has increased. Production of cool-season grasses, particularly Indian ricegrass, has been reduced, as have shrubs such as winterfat and Gardner saltbush. This diverse plant community provides support for domestic livestock and wildlife such as antelope.

The total annual production (air-dry weight) of this state is about 150 pounds per acre, but it can range from about 50 lbs./acre in unfavorable years to about 225 lbs./acre in above average years.

**Ground Cover and Structure:**

Growth curve number: WY0501  
Growth curve name: 5-9BH, UPLAND SITES  
Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

This plant community is resistant to change. The herbaceous species present are well adapted to grazing; however, species composition can be altered through long-term overgrazing. The herbaceous component is mostly intact and plant vigor and replacement capabilities are sufficient. Water flow patterns and litter movement may be occurring but only on steeper slopes. Incidence of pedestalling is minimal. Soils are mostly stable and the surface shows minimum soil loss. The watershed is functioning and the biotic community is intact.

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

- Prescribed grazing or possibly long-term prescribed grazing, will convert this plant community to the *HCPC*. The probability of this occurring is high especially if rotational grazing along with short deferred grazing is implemented as part of prescribed method of use. Brush management is not usually necessary at the time these grazing systems are implemented.
- Frequent and severe grazing, will convert the plant community to the *Birdfoot Sagebrush/Bare Ground Vegetative State*. The probability of this occurring is high on areas where birdfoot sagebrush is not adversely impacted by heavy browsing and prolong drought has occurred.

**Birdfoot Sagebrush/Bare Ground Plant Community**

This plant community is the result of frequent and severe grazing and is exacerbated by prolong periods of drought. Birdfoot sagebrush dominates this plant community, as the annual production is in excess of 50%. The preferred cool season grasses have been eliminated or greatly reduced.

The dominant grass is Sandberg bluegrass. Weedy annual species such as cheatgrass, halogeton, and Russian thistle will occupy the site if a seed source is available. Cactus has

increased. Plant diversity is poor. The interspaces between plants have expanded significantly leaving mostly bare ground. When compared to the historic climax plant community the perennial cool-season grasses are absent and birdfoot sage and annuals dominate.

The total annual production (air-dry weight) of this state is about 50 pounds per acre, but it can range from about 25 lbs/acre in unfavorable years to about 100 lbs./acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number: WY0501  
Growth curve name: 5-9BH, UPLAND SITES  
Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

(Monthly percentages of total annual growth)

This plant community is resistant to change as the stand becomes more decadent. Continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. Plant diversity is greatly altered and the herbaceous component is not intact. Recruitment of perennial grasses is not occurring and the replacement potential is absent. The biotic integrity is missing.

Soil erosion is accelerated because of increased bare ground. Water flow patterns and pedestalling are obvious. Infiltration is reduced and runoff is increased. Rill channels are noticeable in the interspaces and gullies are being establishing where rills have concentrated down slope. The watershed may or may not be functional.

Transitional pathways leading to other plant communities are as follows:

- Brush Management with prescribed grazing where there are some remnants of perennial grasses may return this state to near *Historic Climax Plant Community*. *If perennial cool-season grasses are not available on site, seeding is recommended.*

## Ecological Site Interpretations

### Animal Community – Wildlife Interpretations

**Historic Climax Plant Community:** The composition of grasses and shrubs in this plant community favors feeders, such as antelope. Because of the low growing shrub component this is not suitable for thermal and escape cover for deer, but may be preferred by antelope or other wildlife. When found adjacent to sagebrush dominated states, this plant community may provide brood rearing/foraging areas for sage grouse, as well as lek sites. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Prairie dogs and other small mammals prefer these areas as tall, dense stands of vegetation impede recognition and escape from predators.

**Mixed Perennial Grass/Birdfoot Sagebrush:** This plant community exhibits a low level of plant species diversity but is an important winter range for antelope. When found adjacent to sagebrush dominated states, this plant community may provide brood rearing/foraging areas for sage grouse, as well as lek sites. Other birds that would frequent this plant community include western meadowlarks,

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horned larks, and golden eagles. Prairie dogs and other small mammals prefer these areas as tall, dense stands of vegetation impede recognition and escape from predators.

**Birdfoot Sagebrush/Bare Ground:** This plant community has a low level of diversity. Due to the dominance of annual weeds and grasses, feed for large mammals is limited. Areas of bare ground may provide leks for birds such as sage grouse or habitat for Prairie dogs and other small mammals.

**Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 32, 5-9 inch Bighorn Basin**

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Cattle	Sheep	Horses	Deer	Antelope
<b>GRASSES/GRASSLIKES</b>							
Alkali bluegrass	<i>Poa juncifolia</i> (syn. <i>P. secunda</i> )	POJU (POSE)	DDDD	PPPP	DDDD	PPPP	PPPP
Alkali cordgrass	<i>Spartina gracilis</i>	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU
Alkali sacaton	<i>Sporobolus airoides</i>	SPA1	PPPP	DDDD	PPPP	DDDD	DDDD
Baltic rush	<i>Juncus balticus</i>	JUBA	DDDD	UUUU	DDDD	UUUU	UUUU
Basin wildrye	<i>Leymus cinereus</i>	LECI4	PPPP	PPPP	PPPP	DDDD	DDDD
Beaked sedge	<i>Carex rostrata</i>	CAR06	DDDD	UUUU	DDDD	UUUU	UUUU
Blue grama	<i>Bouteloua gracilis</i>	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	PSSF6	PPPP	PPPP	PPPP	DDDD	DDDD
Bottlebrush squirreltail	<i>Elymus elymoides</i>	ELEL5	DDDD	DDDD	DDDD	UUUU	DDDD
Canada wildrye	<i>Elymus canadensis</i>	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD
Golden sedge	<i>Carex aurea</i>	CAAU3	DDDD	DDDD	DDDD	UUUU	UUUU
Indian ricegrass	<i>Achnatherum hymenoides</i>	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP
Inland saltgrass	<i>Distichlis spicata</i>	DISP	UUUU	UUUU	UUUU	UUUU	UUUU
Inland sedge	<i>Carex interior</i>	CAIN11	DDDD	DDDD	DDDD	UUUU	UUUU
Nebraska sedge	<i>Carex nebrascensis</i>	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
Needleandthread	<i>Hesperostipa comata</i>	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP
Nuttall's alkilgrass	<i>Puccinellia nuttalliana</i>	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP
Prairie junegrass	<i>Koeleria macrantha</i>	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD
Prairie sandreed	<i>Calamovilfa longifolia</i>	CALO	PPPP	UUUU	PPPP	UUUU	UUUU
Red threeawn	<i>Aristida purpurea</i>	ARPUL	UUUU	UUUU	UUUU	UUUU	UUUU
Sand dropseed	<i>Sporobolus cryptandrus</i>	SPCR	DDDD	DDDD	DDDD	UUUU	UUUU
Sandberg bluegrass	<i>Poa secunda</i>	POSE	DDDD	DDDD	DDDD	DDDD	DDDD
Slender wheatgrass	<i>Elymus trachycalyx</i>	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD
Streambank wheatgrass	<i>Elymus lanceolatus</i>	ELLA3	DDDD	DDDD	DDDD	DDDD	DDDD
Thickspike wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	ELLAL	DDDD	DDDD	DDDD	DDDD	DDDD
Threadleaf sedge	<i>Carex filifolia</i>	CAFI	DDDD	DDDD	DDDD	DDDD	DDDD
Threeawns	<i>Aristida</i> spp.	ARIST	UUUU	UUUU	UUUU	UUUU	UUUU
Tufted hairgrass	<i>Deschampsia caespitosa</i>	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD
Upland sedge	<i>Carex</i> spp.	CAREX	DDDD	DDDD	DDDD	DDDD	DDDD
Water sedge	<i>Carex aquatilis</i>	CAAQ	DDDD	UUUU	DDDD	UUUU	UUUU
Western wheatgrass	<i>Pascopyrum smithii</i>	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
<b>FORBS</b>							
Alkali seepweed	<i>Suaeda</i> spp.	AGOSE	UUUU	UUUU	UUUU	UUUU	UUUU
Arrowgrass	<i>Triglochin</i> spp.	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT
Asters	<i>Eucephalus</i> spp.	EUCEP2	UUUU	UUUU	UUUU	UUUU	UUUU
Biscuitroot	<i>Lomatium</i> spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
Blue-eyed grass	<i>Sisyrinchium</i> spp.	SISYR	UUUU	UUUU	UUUU	UUUU	UUUU
Buckwheats	<i>Eriogonum</i> spp.	ERIOG	UUUU	DDDD	UUUU	UUUU	UUUU
Dock	<i>Rumex</i> spp.	RUMEX	UUUU	UUUU	UUUU	UUUU	UUUU
Evening primrose	<i>Oenothera caespitosa</i>	OECA10	UUUU	UUUU	UUUU	UUUU	UUUU
False carrot	<i>Turgenia</i> spp.	TURGE	UUUU	DDDD	UUUU	UUUU	UUUU
Fleabanes	<i>Erigeron</i> spp.	ERIGE2	DDDD	DDDD	DDDD	DDDD	DDDD
Horsetails	<i>Equisetum</i> spp.	EQUIS	UUUU	UUUU	TTTT	UUUU	UUUU
Iris	<i>Iris</i> spp.	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU
Larkspur (poisonous in spring before flowering)	<i>Delphinium</i> spp.	DELPH	DDDD	DDDD	DDDD	DDDD	DDDD
Milkvetch	<i>Astragalus</i> spp.	ASTRA	DDDD	DDDD	DDDD	DDDD	DDDD
Nailwort	<i>Paronychia</i> spp.	PARON	UUUU	UUUU	UUUU	UUUU	UUUU
Paintbrush	<i>Castilleja</i> spp.	CAST	DDDD	DDDD	DDDD	DDDD	DDDD
Penstemons	<i>Penstemon</i> spp.	PENST	PPPP	PPPP	PPPP	PPPP	PPPP
Phlox	<i>Phlox</i> spp.	PHLOX	UUUU	UUUU	UUUU	UUUU	UUUU
Princesplume	<i>Stanleya</i> spp.	STANL	TTTT	TTTT	TTTT	TTTT	TTTT
Pussytoes	<i>Antennaria</i> spp.	ANTEN	UUUU	UUUU	UUUU	UUUU	UUUU
Salsify	<i>Tragopogon porrifolius</i>	TRPO	UUUU	UUUU	UUUU	UUUU	UUUU
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	SPCO	DDDD	DDDD	DDDD	DDDD	DDDD
Stemless hymenoxys	<i>Tetraeneuris acaulis</i>	TEACA2	UUUU	UUUU	UUUU	UUUU	UUUU
Stonecrop	<i>Sedum</i> spp.	SEDUM	UUUU	UUUU	UUUU	UUUU	UUUU
Toadflax	<i>Comandra umbellata</i>	COUMP	UUUU	UUUU	UUUU	UUUU	UUUU
Wild onion	<i>Allium textile</i>	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD
Woody aster	<i>Xylorhiza</i> spp.	XYLOR	TTTT	TTTT	TTTT	TTTT	TTTT
<b>TREES, SHRUBS &amp; HALF-SHRUBS</b>							
Big sagebrush	<i>Artemisia tridentata</i>	ARTR2	DDDD	DDDD	UUUU	DDDD	DDDD
Birdfoot sagebrush	<i>Artemisia pedatifida</i>	ARPE6	UUUU	UUUU	UUUU	UUUU	UUUU
Black sagebrush	<i>Artemisia nova</i>	ARNO4	UUUU	PPPP	UUUU	PPPP	PPPP
Bud sagebrush	<i>Picrothamnus desertorum</i>	PIDE4	PPPP	PPPP	DDDD	PPPP	PPPP
Cottonwoods (sprouts)	<i>Populus</i> spp.	POPUL	PPPP	PPPP	PPPP	PPPP	UUUU
Fourwing saltbush	<i>Atriplex canescens</i>	ATCA2	PPPP	PPPP	PPPP	PPPP	PPPP
Gardners saltbush	<i>Atriplex gardneri</i>	ATGA	PPPP	PPPP	DDDD	PPPP	PPPP
Greasewood (toxic in large amounts)	<i>Sarcobatus vermiculatus</i>	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD
Junipers	<i>Juniperus scopulorum</i>	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU
Green rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	CHV18	DDDD	DDDD	UUUU	PPPP	PPPP
Rubber rabbitbrush	<i>Ericameria nauseosa</i>	ERNA10	UUUU	PPPP	UUUU	DDDD	PPPP
Shadscale	<i>Atriplex confertifolia</i>	ATCO	UUUU	UUUU	UUUU	UUUU	UUUU
Silver buffaloberry	<i>Shepherdia argentea</i>	SHAR	UUUU	UUUU	UUUU	UUUU	UUUU
Silver sagebrush	<i>Artemisia cana</i>	ARCA13	DDDD	DDDD	DDDD	PPPP	PPPP
Skunkbush sumac	<i>Rhus trilobata</i>	RHTR	DDDD	DDDD	UUUU	DDDD	DDDD
Spiny hopsage	<i>Grayia spinosa</i>	GRSP	UUUU	UUUU	UUUU	UUUU	UUUU
Wildrose	<i>Rosa woodsii</i> var. <i>woodsii</i>	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
Willows	<i>Salix</i> spp.	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU
Winterfat	<i>Krascheninnikovia lanata</i>	KRAL2	PPPP	PPPP	PPPP	PPPP	PPPP
Yucca	<i>Yucca</i> spp.	YUCCA	DDDD	DDDD	UUUU	DDDD	DDDD

N = not used; U = undesirable; D = desirable; P = preferred; T = toxic

## Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. 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 this 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. If distribution problems occur, stocking rates must be reduced to maintain plant health and vigor.

Plant Community	Production (lb./ac)	Carrying Capacity* (AUM/ac)
Historic Climax Plant Community	100-300	.08
Mixed Perennial Grass/Birdfoot Sagebrush	50-225	.06
Birdfoot Sagebrush/Bare Ground	25-100	.02

\* - Continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

## Hydrology Functions

Water is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group C and D. Infiltration ranges from slow to very slow. Runoff potential for this site varies from high to very 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 opportunities for upland game species. The wide variety of plants which 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

Clayey	032XY104WY
Saline Upland	032XY144WY
Saline Lowland	032XY138WY

### Similar Sites

### Inventory Data References (narrative)

Information presented here has been derived from NRCS inventory data. Field observations from range trained personnel were also used. Other sources used as references include: USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, and USDA NRCS Soil Surveys from various counties.

### 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	19	1965-1986	WY	Park & others

### State Correlation

This site occurs entirely within Wyoming.

### Type Locality

### Field Offices

Cody, Greybull, Lovell, Powell, Thermopolis, Worland

### Relationship to Other Established Classifications

### Other References

### Site Description Approval

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State Range Management Specialist

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Date