

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Sandy (Sy) 15-19” Northern Plains Precipitation Zone,

Site ID: 043BY450WY

Major Land Resource Area: 43B – Central Rocky Mountains

Physiographic Features

This site occurs on nearly level to 30% slopes.

Landform: Hill sides, alluvial fans, ridges & stream terraces

Aspect: N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	3700	7500
Slope (percent):	0	30
Water Table Depth (inches):	None within 60 inches	
Flooding:		
Frequency:	None	None
Duration:	None	None
Ponding:		
Depth (inches):	0	0
Frequency:	None	None
Duration:	None	None
Runoff Class:	negligible	moderately high

Climatic features

Annual precipitation ranges from 15" to 19" per year. May is generally the wettest month. July, August and September are somewhat drier with daily amounts rarely exceeding one inch. Snowfall is quite heavy in the mountainous area. Annual snowfall averages close to 70 inches.

Sunshine is abundant in the latter part of the summer, the greatest amount being in July and August. Sunshine possibility during these two months averages 70 to 75% possibility with only a 65% possibility for June and September. Winter averages about 40% sunshine.

Because of the varied topography, the wind will vary considerably for different parts of the area. The wind is usually much lighter at the lower elevations and in the valleys as compared with the higher terrain. The average winter wind velocity is 8.5 mph, while the summer wind velocity averages 7.5 mph. Winds during storms and on ridges may exceed 45 mph.

Temperatures show a wide range between summer and winter, and between daily maximums and minimums. Summer nights are cool and temperatures drop into the forties at most places before sunrise. Summer daytime temperatures are usually in the seventies and occasionally reach eighty, but rarely reach the mid nineties. Winters are cold with daily lows below freezing most of the time. January has the coldest temperatures with a range of near 10 deg. F at night to the mid thirties in the afternoon. Temperatures of well below zero to -30 deg. F are not uncommon in the winter months.

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The growing season for the cool season plants will generally start about April 15 to May 1 and continue to about October 10.

The following information is from the “Sheridan Airport” climate station:

Frost-free period (32 °F): 95-156 days; (5 yrs. out of 10, these days will occur between May 21 – September 19)

Freeze-free period 28 °F): 116-187 days; (5 yrs. out of 10, these days will occur between May 4 – September 29)

Mean annual precipitation: 14.7 inches

Mean annual air temperature: 45.0 °F (31.2 °F Avg. Min. – 58.8 °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: “Parkman 5 WNW”

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

Representative Soil Features

The soils of this site are deep to moderately deep (greater than 20”to bedrock), well drained and rapidly permeable. The surface soil must be at least 3 to 6 “thick (depending on texture and permeability of the subsoil) and will include the following soil textures: fine sandy loam, sandy loam or loamy very fine sand. Coarser topsoils may be included if underlain by finer textured subsoils.

Parent Material Kind: alluvium, eolian deposits, residuum

Parent Material Origin: sandstone, unspecified

Surface Texture: fine sandy loam, sandy loam

Surface Texture Modifier: none

Subsurface Texture Group: sandy 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>
Drainage Class:	well drained	excessively well drained
Permeability Class:	moderately rapid	rapid
Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) ≤20”:	0	4
Sodium Absorption Ratio ≤20”:	0	5
Soil Reaction (1:1 Water) ≤20”:	6.6	8.4
Soil Reaction (0.1M CaCl2) ≤20”:	NA	NA
Available Water Capacity (inches) ≤30”:	2	6.1
Calcium Carbonate Equivalent (percent) ≤20”:	0	5

Plant Communities

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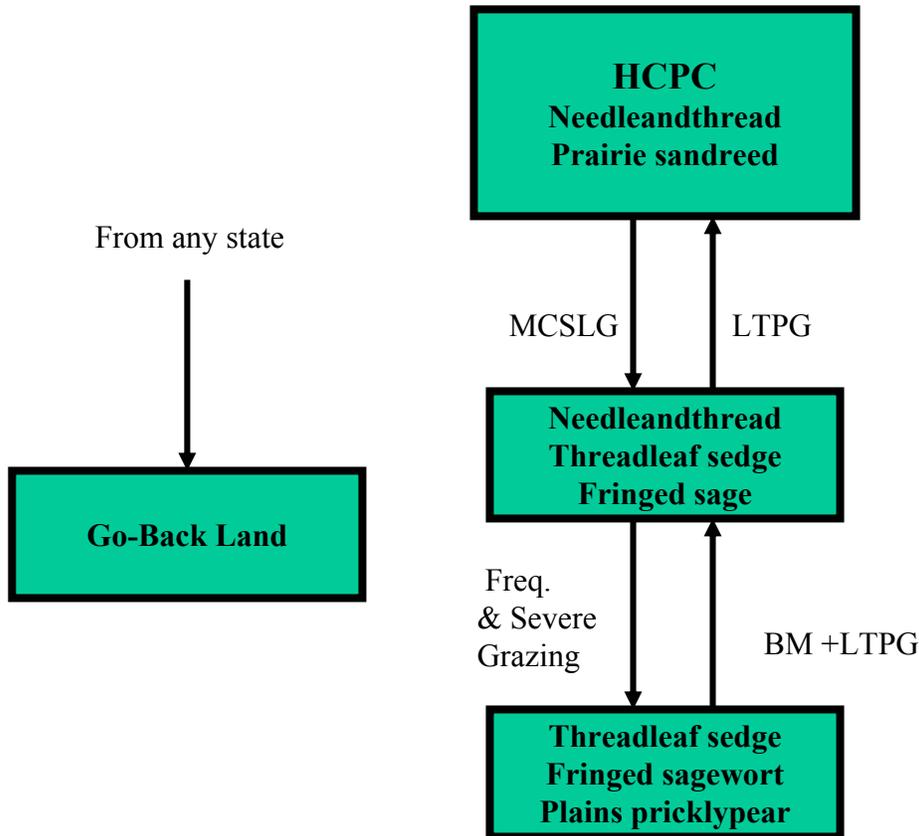
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Ecological Dynamics of the Site:

As this site deteriorates from improper grazing management, species such as threadleaf sedge, needleandthread, fringed sagewort and silver sagebrush will increase. Species such as cheatgrass will invade. Mid grasses such as prairie sandreed 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)

Na - found adjacent to a saline site

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: 2200		
GRASSES AND GRASS-LIKES					
GRASSES/GRASSLIKES			1		
Sand bluestem	Andropogon hallii	ANHA	1	220 - 660	10 - 30
Prairie sandreed	Calamovilfa longifolia	CALO	1	220 - 660	10 - 30
Needleandthread	Hesperostipa comata	HECO26	1	220 - 550	10 - 25
Green needlegrass	Nassella viridula	NAVI4	1	110 - 220	5 - 10
Western wheatgrass	Pascopyrum smithii	PASM	1	110 - 220	5 - 10
Little bluestem	Schizachyrium scoparium	SCSC	1	110 - 220	5 - 10
Indian ricegrass	Achnatherum hymenoides	ACHY	1	110 - 220	5 - 10
MISC. GRASSES/GRASSLIKES			2	110 - 330	5 - 15
Blue wildrye	Elymus glaucus	ELGL	2	0 - 110	0 - 5
Canby bluegrass	Poa canbyi (syn. P. secunda)	POCA (POSE)	2	0 - 110	0 - 5
Sandberg bluegrass	Poa secunda	POSE	2	0 - 110	0 - 5
Onespike oatgrass	Danthonia unispicata	DAUN	2	0 - 110	0 - 5
Sand dropseed	Sporobolus cryptandrus	SPCR	2	0 - 110	0 - 5
Needleleaf sedge	Carex duriuscula	CADU6	2	0 - 110	0 - 5
Idaho fescue	Festuca idahoensis	FEID	2	0 - 110	0 - 5
Richardson needlegrass	Achnatherum richardsonii	ACRI8	2	0 - 110	0 - 5
Pumpelly bromegrass	Bromus inermis spp. Pumpellianus	BRINP5	2	0 - 110	0 - 5
Blue grama	Bouteloua gracilis	BOGR2	2	0 - 110	0 - 5
Prairie junegrass	Koeleria macrantha	KOMA	2	0 - 110	0 - 5
Threadleaf sedge	Carex filifolia	CAFI	2	0 - 110	0 - 5
other perennial grasses (native)		2GP	2	0 - 110	0 - 5
FORBS			3	110 - 220	5 - 10
Penstemons	Penstemon spp.	PENST	3	0 - 110	0 - 5
Prairie clovers	Dalea	DALEA	3	0 - 110	0 - 5
Western yarrow	Achillea lanulosa	ACHIL	3	0 - 110	0 - 5
Silverleaf scurphea	Pediomelum argophyllum	PEAR6	3	0 - 110	0 - 5
Field chickweed	Cerastium arvense	CEAR4	3	0 - 110	0 - 5
Prairie coneflower	Ratibida columnifera	RACO3	3	0 - 110	0 - 5
Green sagewort	Artemisia dracunculus	ARDR4	3	0 - 110	0 - 5
Cudweed sagewort	Artemisia ludoviciana	ARLU	3	0 - 110	0 - 5
Phlox	Phlox spp.	PHLOX	3	0 - 110	0 - 5
Pussytoes	Antennaria rosea	ANRO2	3	0 - 110	0 - 5
American vetch	Vicia americana	VIAM	3	0 - 110	0 - 5
American licorice	Glycyrrhiza lepidota	GLLE3	3	0 - 110	0 - 5
Fringed sagewort	Artemisia frigida	ARFR4	3	0 - 110	0 - 5
Hairy goldenaster	Heterotheca villosa	HEVI2	3	0 - 110	0 - 5
Dotted gayfeather	Liatris punctata	LIPU	3	0 - 110	0 - 5
other perennial forbs (native)		2FP	3	0 - 110	0 - 5
TREES/SHRUBS			4		
Big sagebrush	Artemisia tridentata	ARTR2	4	0 - 110	0 - 5
Silver sagebrush	Artemisia cana	ARCA13	4	0 - 110	0 - 5
MISC. SHRUBS			5		
other shrubs & half shrubs (native)		2SHRUB	5	0 - 110	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.

Needleandthread, Prairie Sandreed Plant Community

The interpretive plant community for this site is the Historic Climax Plant Community. This site evolved with grazing by large herbivores and is well suited for grazing by domestic livestock. Potential vegetation is about 85% grasses or grass-like plants, 10% forbs, and 5% woody plants. The state is a mix of warm and cool season midgrasses. The major grasses include needleandthread, prairie sandreed, sand bluestem, little bluestem, and Indian ricegrass. Other grasses occurring on the state include rhizomatous wheatgrass, Sandberg bluegrass, blue grama, and threadleaf sedge. Silver sagebrush is a conspicuous element of this state, occurs in a mosaic pattern, and makes up 5% of the annual production.

Annual production ranges from 1500 to 3000 pounds depending on climatic conditions.

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

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	0	10	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

This plant community is extremely stable and well adapted to the Northern Great Plains climatic conditions. The diversity in plant species allows for high drought tolerance. 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, improper grazing will convert the plant community to the *Needleandthread, Threadleaf sedge, Fringed sagewort Vegetation State*.
- Long-term, heavy, improper grazing will convert the plant community to the *Threadleaf sedge, Fringed sagewort, Cactus Vegetation State*.
- When cropped annually and then abandoned without reseeding, the state is converted to the *Go-back Land Vegetation State*.

Needleandthread, Threadleaf Sedge, Fringed Sage Plant Community

This plant community is the result of moderate improper grazing. The understory of grass includes needleandthread, threadleaf sedge, and prairie junegrass. Fringed sagewort has increased. When

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compared to the Historic Climax Plant Community, prairie sandreed and Indian ricegrass have decreased. Threadleaf sedge and needleandthread have increased. This community is well suited to grazing by both domestic livestock and wildlife, during the spring summer and fall.

Total annual production is from 600 to 1500 pounds.

The communities’ soil, biotic integrity and watershed is intact, although more than normal runoff may occur due to the sod forming vegetation. Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing over a long-term will return this state to near *Historic Climax Plant Community condition*. The sod forming nature of threadleaf sedge and needleandthread will make the transition to *Historic Climax Plant Community difficult*.
- Heavy long-term improper use will convert this state to the *Threadleaf sedge, Fringed sagewort, Plains Pricklypear Vegetation State*.

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	0	10	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

Threadleaf Sedge, Fringed Sagewort, Plains Pricklypear Plant Community

This plant community is the result of long-term, heavy, continuous, improper grazing. It is dominated by a sod of threadleaf sedge and needleandthread. Fringed sagewort has increased. Plains Pricklypear can become dense enough so that livestock cannot graze forage growing within the cactus clumps. When the historic climax community is replaced by sod forming communities, grass production is reduced.

Production on this state is approximately 500 to 1000 pounds depending on climatic conditions.

The soil is generally well protected on this state. The biotic integrity may be reduced due to low vegetative production. The sod formed by these grasses is resistant to water infiltration. While the site is protected by this sod, off-site areas are affected by excessive runoff which may cause gully erosion. This sod is resistant to change and may require practices such as long-term proper grazing use to return to a mid grass community. Transitional pathways leading to other plant communities are as follows:

The following is the growth curve of the 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	0	10	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

Long-term prescribed grazing with fringed sagewort control will return this plant community to the *needleandthread, threadleaf sedge, fringed sage* plant community.

Go-back Land Plant Community

This plant community occurs on land that has been cropped annually in the past and then abandoned without reseeding. Natural succession has resulted in a plant community dominated by varying combinations of red threeawn, cheatgrass, needleandthread, Sandberg bluegrass, and some blue

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grama. Forage production is low since grasses such as red threeawn and cheatgrass are not used efficiently by livestock.

Annual production ranges from 800-1200 pounds.

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	0	0	0	0	0	0	0	0	0	0

(Monthly percentages of total annual growth)

The potential for accelerated erosion can be highly variable depending on amount of bare ground present. Biological diversity is low.

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

- Prescribed grazing may increase desirable native cool season grass production. It may be difficult to return to near *Historic Climax Plant Community* condition, in a timely manner, because of past soil loss.
- Where there is a lack of perennial grass, reseeding to tame or native species may be necessary to return these lands to production in the form of pastureland.

Introduced Pasture

Where there is a lack of perennial grasses, reseeding to tame or native species may be necessary to return these lands to production in the form of pastureland. These pastures are normally seeded to crested wheatgrass, pubescent wheatgrass, or Russian wildrye. They require considerable investment to establish and have a variable life expectancy. They do produce up to 50% more than native range, but their value as forage is somewhat limited due to the single species usually seeded. In some cases, the single species or certain groups of species (e.g., wheatgrasses) may be more vulnerable to infestation by associated insects and/or diseases (e.g., black grass bugs).

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Needleandthread, Prairie Sandreed (HCPC): The predominance of grasses in this plant community favors grazers and mixed-feeders, such as bison, elk, and antelope. Suitable thermal and escape cover for deer may be limited due to the low quantities of woody plants. However, topographical variations could provide some escape cover. 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. Many grassland obligate small mammals would occur here.

Needleandthread, Threadleaf Sedge, Fringed Sage Plant Community:

This plant community may be useful for the same large grazers that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals. It may provide some foraging opportunities for sage grouse when it occurs proximal to woody cover. Good grasshopper habitat equals good foraging for birds.

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Threadleaf Sedge, Fringed Sage, Plains Pricklypear Plant Community:

This plant community may be useful for the same large grazers that would use the Historic Climax Plant Community. Production is low and plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals. It may provide some foraging opportunities for sage grouse when it occurs proximal to woody cover.

Go-back Land Plant Communities: These communities provide limited foraging for antelope and other grazers. They may be used as a foraging site by sage grouse if proximal to woody cover and if the Historic Climax Plant Community or the Western Wheatgrass/Cheatgrass Plant Community is limiting. Generally, these are not target plant communities for wildlife habitat management.

Introduced Pasture: These communities are highly variable depending on the species planted. Refer to Forage Suitability Groups for more information.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 43B, 15-19 inch Northern Plains

COMMON NAME/	SCIENTIFIC NAME	SCI. SYMBOL	Cattle	Sheep	Horses	Mule Deer	Antelope
GRASSES AND GRASS-LIKES							
Alpine timothy	Phelum alpinum	PHAL2	PPPP	PPPP	PPPP	DDDD	UUUU
Baltic rush	Juncus balticus	JUBA	DDDD	UUUU	DDDD	UUUU	UUUU
Basin wildrye	Leymus cinereus	LECI4	PPPP	PPPP	PPPP	DDDD	DDDD
Bearded wheatgrass	Elymus caninus	ELCA	PPPP	DDDD	PPPP	DDDD	DDDD
Big bluegrass	Poa ampla (syn. to Poa secunda)	POAM (POSE)	PPPP	PPPP	PPPP	DDDD	DDDD
Blue grama	Bouteloua gracilis	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
Blue wildrye	Elymus glaucus	ELGL	PPPP	DDDD	DDDD	DDDD	DDDD
Bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD
Bluejoint Reedgrass	Calamagrostis canadensis	CACA4	DDDD	PPPP	PPPP	UUUU	UUUU
Bottlebrush squirreltail	Elymus elymoides	ELELE	DDDD	DDDD	DDDD	UUUU	UUUU
Canada wildrye	Elymus canadensis	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD
Canby bluegrass	Poa canbyi (syn. to Poa secunda)	POCA (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP
Columbia needlegrass	Achnatherum nelsonii	ACNE3	PPPP	PPPP	DDDD	DDDD	DDDD
Cusic bluegrass	Ribes spp.	RIBES	DDDD	DDDD	DDDD	PPPP	DDDD
Dunehead sedge	Carex phaeocephala	CAPH2	UUUU	UUUU	UUUU	UUUU	UUUU
Fowl bluegrass	Poa palustris	POPA2	DDDD	DDDD	DDDD	UUUU	UUUU
Green needlegrass	Nassella viridula	NAV14	PPPP	PPPP	PPPP	PPPP	PPPP
Idaho fescue	Festuca idahoensis	FEID	PPPP	PPPP	PPPP	PPPP	PPPP
Indian ricegrass	Achnatherum hymenoides	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP
Letterman needlegrass	Achnatherum lettermanii	ACLE9	PPPP	PPPP	DDDD	DDDD	DDDD
Little bluestem	Schizachyrium scoparium	SCSC	PPPP	PPPP	PPPP	DDDD	DDDD
Montana wheatgrass	Elymus albicans	ELAL7	DDDD	DDDD	DDDD	DDDD	DDDD
Mountain bromegrass	Bromus marginatus	BRMA4	PPPP	PPPP	DDDD	DDDD	UUUU
Mountain muhly	Muhlenbergia montana	MUMO	DDDD	DDDD	DDDD	DDDD	UUUU
Nebraska sedge	Carex nebraskensis	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
Needleandthread	Hesperostipa comata ssp. comata	HECOC8	DPDD	UPDU	DPDD	UDUU	UDUU
Needleleaf sedge	Carex duriuscula	CADU6	UUUU	UUUU	UUUU	UUUU	UUUU
Nodding bromegrass	Bromus anomalus (syn. B. porteri)	BRAN13 (BRPO)	PPPP	PPPP	DDDD	DDDD	UUUU
Northern Reedgrass	Calamagrostis stricta ssp. inexpansa	CASTI3	UPDU	UDUU	UPDU	UDUU	UDUU
Onespike oatgrass	Danthonia unispicata	DAUN	DDDD	PPPP	DDDD	PPPP	DDDD
Plains muhly	Muhlenbergia cuspidata	MUCU3	DDDD	DDDD	DDDD	UUUU	UUUU
Plains reedgrass	Calamagrostis montanensis	CAMO	DDDD	DDDD	DDDD	DDDD	DDDD
Prairie cordgrass	Spartina pectinata	SPPE	PPPP	DDDD	PPPP	UUUU	UUUU
Prairie junegrass	Koeleria macrantha	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD
Pumpelly bromegrass	Bromus inermis spp. Pumpellianus	BRINP5	PPPP	PPPP	DDDD	DDDD	UUUU
Red threeawn	Aristida purpurea	ARPUL	UUUU	UUUU	UUUU	UUUU	UUUU
Reedgrasses	Calamagrostis spp.	CALAM	DDDD	UUUU	DDDD	UUUU	UUUU
Rhizomatous wheatgrasses	Pascopyrum smithii	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
Richardson needlegrass	Achnatherum richardsonii	ACRI8	PPPP	PPPP	DDDD	DDDD	DDDD
Sand bluestem	Andropogon halli	ANHA	PPPP	DDDD	PPPP	UUUU	UUUU
Sand dropseed	Sporobolus cryptandrus	SPCR	DDDD	DDDD	DDDD	UUUU	UUUU
Sandberg bluegrass	Poa secunda	POSE	DDDD	DDDD	DDDD	DDDD	DDDD
Sideoats grama	Bouteloua curtipendula	BOCU	PPPP	PPPP	PPPP	DDDD	UUUU
Slender wheatgrass	Elymus trachycaulus ssp. trachycaulus	ELTRT	DPDD	UPDD	DPDD	UDUU	UDUU
Slough sedge	Carex atherodes	CAAT2	DDDD	DDDD	DDDD	DDDD	DDDD
Spike fescue	Leucopoa kingii	LEKI2	PPPP	DDDD	PPPP	PPPP	DDDD
Spike sedge	Carex nardina	CANA2	DDDD	DDDD	DDDD	UUUU	UUUU
Spike trisetum	Trisetum spicatum	TRSP2	PPPP	DDDD	PPPP	PPPP	DDDD
Tall mannagrass	Glyceria elata (syn. G. striata)	GLEL (GLST)	DDDD	UUUU	DDDD	UUUU	UUUU
Thickspike wheatgrass	Elymus lanceolatus	ELLAL	DDDD	DDDD	DDDD	DDDD	DDDD
Threadleaf sedge	Carex filifolia	CAFI	DDDD	DDDD	DDDD	DDDD	PPPP
Tufted hairgrass	Deschampsia caespitosa	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD
Water sedge	Carex aquatilis	CAAQ	DDDD	UUUU	DDDD	UUUU	UUUU
Western wheatgrass	Pascopyrum smithii	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
FORBS							
American bistort	Polygonum bistortoides	POBI6	DDDD	DDDD	DDDD	DDDD	DDDD
American vetch	Vicia americana	VIAM	PPPP	PPPP	PPPP	PPPP	PPPP
Arrowgrass	Triglochin spp.	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT
Arrowleaf balsamroot	Triglochin spp.	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT
Aster	Asters	ASTER	UUUU	UUUU	UUUU	UUUU	UUUU
Balsamroot	Balsamorhiza spp.	BALSA	PPPP	PPPP	PPPP	PPPP	PPPP
Biscuitroot	Lomatium spp.	LOMAT	UDUU	UDDU	UDUU	UDDU	UDDU
Bluebells	Mertensia	MERTE	DDDD	PPPP	DDDD	DDDD	DDDD
Blue-eyed grass	Sisyrinchium spp.	SISYR	DDDD	PPPP	DDDD	DDDD	DDDD
Buckwheat	Eriogonum spp.	ERIOG	UUUU	UUUU	UUUU	UUUU	UUUU
Common commandra	Comandra spp.	COMAN	UUUU	UUUU	UUUU	UUUU	UUUU
Cudweed sagewort	Artemisia ludoviciana	ARLU	UUUU	UUUU	UUUU	UUUU	UUUU

Deathcamas	Zigadenus venenosus	ZIVE	TTTT	TTTT	TTTT	TTTT	TTTT
Dock	Rumex spp.	RUMEX	UUUU	UUUU	UUUU	UUUU	UUUU
Dotted gayfeather	Liatris punctata	LIPU	UPPU	UPPU	UPPU	UPPU	UPPU
Field chickweed	Cerastium arvense	CEAR4	UUUU	UUUU	UUUU	UUUU	UUUU
Flax	Linum spp.	LINUM	UUUU	UUUU	UUUU	UUUU	UUUU
Fleabane	Erigeron spp.	ERIGE2	UUUU	UUUU	UUUU	UUUU	UUUU
Fringed sagewort	Artemisia frigida	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU
Goldenrod	Solidago spp.	SOLID	NUNN	NUNN	NNNN	NUNN	NUNN
Green sagewort	Artemisia campestris	ARCA12	NNNN	NUUN	NNNN	NUUN	NUUN
Gromwell	Buglossoides spp.	BUGLO	UUUU	UUUU	UUUU	UUUU	UUUU
Groundsel	Senecio spp.	SENEC	NNNN	NNNN	NNNN	NNNN	NNNN
Hairy goldenaster	Heterotheca villosa	HEVI4	UUUU	UUUU	UUUU	UUUU	UUUU
Hawksbeard	Crepis acuminata	CRAC2	UUUU	PPPP	UUUU	DDDD	DDDD
Horsetails	Equisetum spp.	EQUIS	UUUU	UUUU	UUUU	UUUU	UUUU
Iris	Iris spp.	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU
Larkspur	Delphinium spp.	DELPH	TTTT	TTTT	TTTT	TTTT	TTTT
Locoweeds	Oxytropis spp.	OXYTR	TTTT	TTTT	TTTT	TTTT	TTTT
Lupine	Lupinus spp.	LUPIN	DDDD	DDDD	DDDD	DDDD	DDDD
Mint	Menthan spp.	MENTH	UUUU	UUUU	UUUU	UUUU	UUUU
Mountain thermopsis	Thermopsis montana	THMOM3	UUUU	UUUU	UUUU	UUUU	UUUU
Nailwort	Paronychia spp.	PARON	NNNN	NNNN	NNNN	NNNN	NNNN
Pale agoseris	Agoseris glauca	AGGL	DDDD	PPPP	DDDD	DDDD	DDDD
Penstemons	Penstemon spp.	PENST	UPPU	UPPU	UPPU	UPPU	UPPU
Phlox	Phlox spp.	PHLOX	NNNN	NNNN	NNNN	NNNN	NNNN
Prairie clovers	Dalea spp.	DALEA	UPPU	UPPU	UPPU	UPPU	UPPU
Prairie coneflower	Ratibida columnifera	RACO3	DDDD	PPPP	DDDD	PPPP	PPPP
Flax	Linum spp.	LINUM	UUUU	UUUU	UUUU	UUUU	UUUU
Pussytoes	Antennaria spp.	ANTEN	NNNN	NNNN	NNNN	NNNN	NNNN
Sandwort	Arenaria spp.	ARENA	NNNN	NNNN	NNNN	NNNN	NNNN
Silverleaf scurfpea	Pediomelum argophyllum	PEAR6	UUUU	UUUU	UUUU	UUUU	UUUU
Stemless mock goldenweed	Stenotus acaulis	STAC	UUUU	UUUU	UUUU	UUUU	UUUU
Sticky geranium	Geranium viscosissimum	GEVI2	PPPP	PPPP	DDDD	PPPP	DDDD
Stoncrop	Sedum spp.	SEDUM	UUUU	UUUU	UUUU	UUUU	UUUU
Toadflax	Comandra umbellata	COUMP	UUUU	UUUU	UUUU	UUUU	UUUU
Violets	Viola spp.	VIOLA	DDDD	DDDD	DDDD	DDDD	DDDD
Water hemlock	Cicuta spp.	CICUT	TTTT	TTTT	TTTT	TTTT	TTTT
Waterleaf	Hydrophyllum	HYDRO4	DDDD	PPPP	DDDD	PPPP	DDDD
Western virginsbower	Clematis lequisticifolia	CLLI2	UUUU	DDDD	UUUU	DDDD	DDDD
Western wallflower	Erysimum capitatum	ERCAC	DDDD	DDDD	DDDD	DDDD	DDDD
Western yarrow	Achillea millefolium	ACMI2	NUUN	NUUN	NNNN	NUUN	NUUN
TREES/SHRUBS							
American plum	Prunus americana	PRAM	DDDD	DDDD	DDDD	DDDD	UUUU
Big sagebrush	Artemisia tridentata	ARTR2	UUUU	DDDD	UUUU	DDDD	DDDD
Black sagebrush	Artemisia nova	ARNO4	UUUU	PPPP	UUUU	PPPP	PPPP
Boxelder	Acer negundo	ACNE2	UUUU	UUUU	UUUU	UUUU	UUUU
Chokecherry	Prunus virginiana	PRVI	DDDD	DDDD	DDDD	PPPP	DDDD
Common Juniper	Juniperus communis	JUSCO6	UUUU	UUUU	UUUU	UUUU	UUUU
Cottonwoods	Tanacetum vulgare	TAVU	UUUU	UUUU	UUUU	UUUU	UUUU
Green ash	Fraxinus pennsylvanica	FRPE	UUUU	UUUU	UUUU	UDDU	UDDU
Hawthorn	Crataegus spp.	CRATA	UUUU	UUUU	UUUU	UUUU	UUUU
Juniper	Juniperus scopulorum	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU
Mountain mahogany	Cercocarpus spp.	CERCO	DDDD	PPPP	UUUU	PPPP	UUUU
Ponderosa pine	Pinus ponderosa	PIPO	UTTU	UNNU	UNNU	UNNU	UNNU
Rocky-Mountain juniper	Juniperus scopulorum	JUSC2	UNNU	UNNU	UNNU	UNNU	DUUD
Rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	DDDD	UUUU	DDDD	DDDD
Silver sagebrush	Artemisia cana	ARCAC5	DDDD	DDDD	DDDD	PPPP	PPPP
Skunkbush sumac	Rhus trilobata	RHTR	DDDD	DDDD	DDDD	DDDD	DDDD
Snowberry	Symphoricarpos occidentalis	SYOC	UUUU	UUUU	UUUU	DDDD	UUUU
Threetip sagebrush	Artemisia tripartita	ARTR4	UUUU	DDDD	UUUU	UUUU	DDDD
Wild rose	Rosa woodsii var. woodsii	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
Willows	Salix L.	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU
Winterfat	Krascheninnikovia lanata	KRLA2	PPPP	PPPP	PPPP	PPPP	PPPP
Yucca	Yucca glauca	YUGL	DDDD	DDDD	DDDD	DDDD	DDDD

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)
Needleandthread, Prairie Sandreed	1500-3000	.6
Needleandthread, Threadleaf Sedge, Fringed Sage	600-1500	.35
Threadleaf Sedge, Fringed Sage, Plains Pricklypear	500-1000	.25
Go-back Land	800-1200	.35

* - 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 B, with localized areas in hydrologic group C. Infiltration potential for this site varies from moderately rapid to rapid depending on soil hydrologic group and ground cover. Runoff varies from low to moderate. 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

Shallow Sandy	043BY466WY
Loamy	043BY422WY

Similar Sites

() – Sandy 10-14” Northern Plains P.Z., 058BY150WY has lower production.

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. 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		1971-1994	WY	
Ocular estimates		1990-1999	WY	

Site Correlation

Type Locality

Field Offices - Buffalo, Sheridan

Relationship to Other Established Classifications

Other References

Site Description Approval

State Range Management Specialist

Date