United States Department of Agriculture
Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Lowland (LL) 15-17" Northern Plains Precipitation Zone,

Site ID: 058BY228WY

Major Land Resource Area: 58B – Northern Rolling High Plains

Physiographic Features

This site is located on nearly level land adjacent to streams that run water at least during the major part of the growing season.

Landform: alluvial fans, drainage ways & stream terraces **Aspect:** N/A

	Minimum	Maximum
Elevation (feet):	3400	4600
Slope (percent):	0	6
Water Table Depth (inches):	12	>60
Flooding:		
Frequency:	occasional	frequent
Duration:	brief	long
Ponding:		
Depth (inches):	0	0
Frequency:	None	None
Duration:	None	None
Runoff Class:	negligible	low

Climatic features

Annual precipitation ranges from 15-17 inches per year. Wide fluctuations may occur in yearly precipitation and result in more drought 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 "Echeta 2 NW" climate station:
Frost-free period (32 °F): 70-142 days; (5 yrs. out of 10, these days will occur between June 7 – September 16)
Freeze-free period (28 °F): 106-154 days; (5 yrs. out of 10, these days will occur between May 14 – September 23)
Mean annual precipitation: 15.82 inches
Mean annual air temperature: 45.2 °F (30.0°F Avg. Min. - 60.4°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: "Recluse 14 NNW".

Influencing Water Features

Wetland Description: **System** **Subsystem** **Class** **Sub-class**

Stream Type: C

Representative Soil Features

The soils of this site are deep and very deep well-drained soils formed in mixed alluvium. These soils have moderate permeability. The surface soil will be highly variable and vary from 2 to 8 inches in thickness. Layers of the soil most influential to the plant community vary from 3 to 6 inches thick. The surface soil will be one or more of the following textures: very fine sandy loam, fine sandy loam, sandy loam, loam, silt loam, clay loam, clay, or silty clay. A fluctuating water table occurs in these areas and ranges from 1 to 5 feet but is usually deeper than 3 feet.

Major Soil Series correlated to this site include: Boruff, Soda wells, Pathfinder and Rockypoint,

Other Soil Series correlated in MLRA 58B to this site include: Coaliams

Parent Material Kind: alluvium
Parent Material Origin: sandstone, shale
Surface Texture: loam, clay loam, clay, fine sandy loam, sandy loam, loamy sand
Surface Texture Modifier: none is most common, but gravelly or cobbly may occur
Subsurface Texture Group: loam
Surface Fragments ≤ 3" (% Cover): typically 0, occasionally up to 10
Surface Fragments > 3" (%Cover): typically o, occasionally up to 10
Subsurface Fragments ≤ 3" (% Volume): typically o, occasionally up to 10
Subsurface Fragments > 3" (% Volume): typically o, occasionally up to 10

	Minimum	Maximum
Drainage Class:	poorly drained	well drained
Permeability Class:	moderately slow	rapid
Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) ≤20":	0	8
Sodium Absorption Ratio ≤20":	0	10
Soil Reaction (1:1 Water) ≤20":	6.6	8.4
Soil Reaction (0.1M CaCl2) ≤20":	NA	NA
Available Water Capacity (inches) ≤30":	1	6.2
Calcium Carbonate Equivalent (percent) ≤20":	0	5

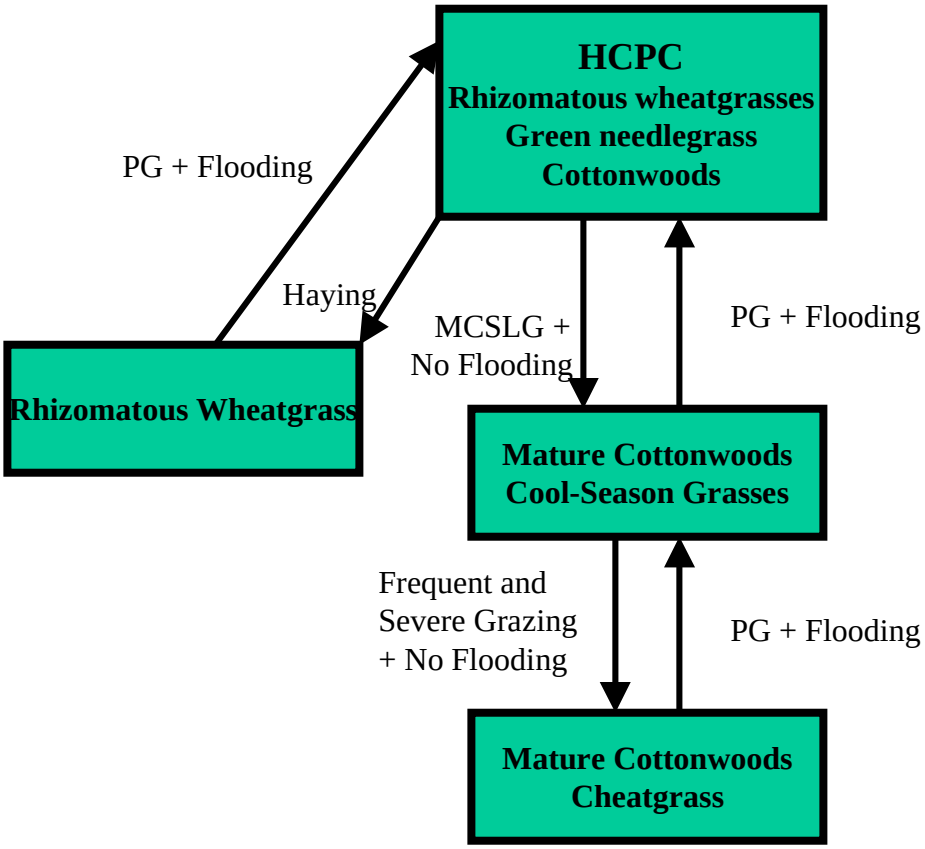
Plant Communities

Ecological Dynamics of the Site:

As this site deteriorates, species such as blue grama, snowberry and silver sagebrush will increase. Cool season grasses such as green needlegrass and rhizomatous wheatgrasses will decrease in frequency and production. Mature cottonwoods do not reproduce.

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-tem 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 - Moderate Sodium in Soil

PLANT COMMUNITY DYNAMICS
REFERENCE PLANT COMMUNITY

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Grp	Allowable Annual Production lbs./acre			% Comp (MAX.)
				below normal	normal	above normal	
				2500	*3000*	*3500*	
GRASSES/GRASSLIKES							
RHIZOMATOUS WHEATGRASSES:			1	250	300	350	10%
thickspike wheatgrass	Elymus lanceolatus	ELLAL	1	250	300	350	10%
western wheatgrass	Pascopyrum smithii	PASM	1	250	300	350	10%
OTHER GRASSES							
slender wheatgrass	Elymus trachycaulus	ELTR7	2	250	300	350	10%
green needlegrass	Nassella viridula	NAVI4	3	375	450	525	15%
bearded wheatgrass	Elymus cananis	ELCA4	4	250	300	350	10%
MISCELLANEOUS GRASSES/GRASSLIKES*		PPGG	5	625	750	875	25%
mat muhly	Muhlenbergia richardsonis	MURI	5	125	150	175	5%
Canada wildrye	Elymus canadensis	ELCA4	5	125	150	175	5%
needleandthread	Hesperostipa comata	HECO26	5	125	150	175	5%
bottlebrush squirreltail	Elymus elymoides	ELEL5	5	125	150	175	5%
blue grama	Boutelous gracilis	BOGR2	5	125	150	175	5%
prairie junegrass	Koeleria macrantha	KOMA	5	125	150	175	5%
Sandberg bluegrass	Poa secunda	POSE	5	125	150	175	5%
FORBS							
MISCELLANEOUS FORBS*		PPFF	6	375	450	525	15%
American vetch	Vicia americana	VIAM	6	125	150	175	5%
prairie coneflower	Ratibida columnifera	RACO3	6	125	150	175	5%
asters	Asters	ASTER	6	125	150	175	5%
biscuitroots	Lomatium spp.	LOMAT	6	125	150	175	5%
breadroot scurfpea	Pediomelum esculentum	PEES	6	125	150	175	5%
fringed sagewort	Artemisia frigida	ARFR4	6	125	150	175	5%
western yarrow	Achillea lanulosa	ACHIL	6	125	150	175	5%
rosy pussytoes	Antennaria rosea	ANRO2	6	125	150	175	5%
milkvetches	Astragalus	ASTRA	6	125	150	175	5%
scarlet gaura	Gaura coccinea	GACO5	6	125	150	175	5%
purple prairie clover	Dalea purpurea	DAPU5	6	125	150	175	5%
white prairie clover	Dalea candida	DACA7	6	125	150	175	5%
American licorice	Glycyrrhiza lepidota	GLLE3	6	125	150	175	5%
green sagewort	Artemisia dracunculus	ARDR4	6	125	150	175	5%
twogrooved milkvetch	Astragalus bisulcatus	ASBI2	6	125	150	175	5%
bluebells	Mertensia	MERTE	6	125	150	175	5%
wild onion	Allium textile	ALTE	6	125	150	175	5%
stemless goldenweed	Haplopappus acaulis	HAAC	6	125	150	175	5%
hawksbeard	Crepis acuminata	CRAC2	6	125	150	175	5%
sulphur flower buckwheat	Eriogonum umbellatum	ERUM	6	125	150	175	5%
TREES, SHRUBS & HALF-SHRUBS							
cottonwoods	Populus deltoides	PODEM	7	250	300	350	10%
silver sagebrush	Artemisia cana	ARCAC5	8	125	150	175	5%
rubber rabbitbrush	Ericameria nauseosa	ERNA10	9	125	150	175	5%
silverberry	Eleagnus commutata	ELCO	10	125	150	175	5%
wildrose	Rosa woodsii var. woodsii	ROWOW	11	125	150	175	5%
western snowberry	Symphoricarpos occidentalis	SYOC	12	125	150	175	5%

* Common native perennials are listed. Other native perennials may also be counted but no species in the group may be counted for more than 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/ Green Needlegrass/ Cottonwoods Plant Community

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and is well suited for grazing by domestic livestock. Potential vegetation is about 55% grasses or grass-like plants, 15% forbs and 30% woody plants. The understory is dominated by cool season midgrasses. The major grasses include rhizomatous wheatgrasses, needleandthread, green needlegrass and slender wheatgrass. Other grasses occurring on the state include Sandberg bluegrass, Canada wildrye and prairie junegrass. Cottonwoods of various age classes are a conspicuous part of the overstory.

The total annual production (air-dry weight) of this state is about 3000 pounds per acre, but it can range from about 2500 lbs./acre in unfavorable years to about 3500 lbs./acre in above average years.

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	25	40	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, continuous season-long grazing and lack of flooding will convert this plant community to the *Mature cottonwoods/Cool-Season Grass Vegetation State.*
- Frequent and Severe Grazing and lack of flooding will convert this plant community to the *Mature cottonwoods/Cheatgrass Vegetation State.*
- Haying will convert this state to the *Rhizomatous Wheatgrass Vegetation State.*

Mature cottonwoods/Cool-Season Grass Plant Community

This plant community evolved under moderate grazing by domestic livestock. Cool-season grasses make up the majority of the understory with the balance made up of short warm-season grasses, annual cool-season grass, and miscellaneous forbs. Mature Cottonwoods make up the overstory.

Dominant grasses include rhizomatous wheatgrasses, Kentucky bluegrass, needleandthread, and green needlegrass. Grasses of secondary importance include prairie junegrass, Sandberg bluegrass and slender wheatgrass. Forbs, commonly found in this plant community, include Louisiana sagewort (cudweed), plains wallflower, hairy goldaster, slimflower scurfpea, and scarlet globemallow. Silver sagebrush, wild rose, and snowberrry canopy cover may be 20-40%.

When compared to the Historical Climax Plant Community, western wheatgrass and green needlegrass have decreased. Needleandthread and Sandberg bluegrass have increased. Silver sagebrush has increased. Reproduction of cottonwoods is limited. The overstory of cottonwoods and understory of grass and forbs provide a diverse plant community that will support domestic livestock and wildlife such as birds, mule deer and antelope.

The total annual production (air-dry weight) of this state is about 2500 pounds per acre, but it can range from about 2000 lbs./acre in unfavorable years to about 3000 lbs./acre in above average years.

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	25	40	10	5	5	5	0	0

(Monthly percentages of total annual growth)

The state is stable and protected from excessive erosion. The biotic integrity of this plant community is usually intact. However, the lack of cottonwood reproduction will reduce the wildlife habitat. The watershed is usually functioning.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing and flooding will result in a plant community very similar to the *Historic Climax Plant Community.*

- Frequent and Severe Grazing and lack of flooding will convert this plant community to the *Mature cottonwoods/Cheatgrass Vegetation State.*

Mature Cottonwoods/Cheatgrass Plant Community
This plant community is the result of long-term improper grazing use. Rhizomatous wheatgrasses, cheatgrass, and blue grama dominate this state. Silver sagebrush and snowberry have increased. Mature cottonwoods make up the overstory. Noxious weeds such as Canada thistle and leafy spurge may invade it.

When compared to the Historic Climax Plant Community rhizomatous wheatgrasses and green needlegrass have decreased. Silver sagebrush has increased. Cottonwoods have not reproduced.

The total annual production (air-dry weight) of this state is about 1500 pounds per acre, but it can range from about 800 lbs./acre in unfavorable years to about 1800 lbs./acre in above average years.

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	15	30	30	10	5	5	5	0	0

(Monthly percentages of total annual growth)

The soil of this state is protected. The watershed is functioning but may produce excessive runoff. The biotic integrity is threatened by invasive species.

Transitional pathways leading to other plant communities are as follows

- Prescribed Grazing and flooding over the long-term will return this state to near *Historic Climax Plant Community,* except that silver sagebrush and mature cottonwoods will persist.

Rhizomatous Wheatgrass Plant Community

This plant community is the result of haying. The state is dominated by western wheatgrass with some green needlegrass. The overstory is mature cottonwoods.

When compared to the Historic Climax Plant Community this state has lost much of its diversity. Woody vegetation is mainly mature cottonwoods. There are few forbs. The soil is protected by western wheatgrass sod.

The total annual production (air-dry weight) of this state is about 2000 pounds per acre, but it can range from about 1500 lbs./acre in unfavorable years to about 2500 lbs./acre in above average years.

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	15	30	30	10	5	5	5	0	0

(Monthly percentages of total annual growth)

The soil of this state is protected from erosion. The biotic community is restricted by the lack of diversity. Watershed values are protected due to the lack of steep slopes on this site.

Transitional pathways leading to other plant communities are as follows.

- Prescribed grazing and flooding may return this state to the *Historic Climax Plant Community* over the long term.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Historic Climax Plant Community: 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.

Mature Cottonwoods/Cool-Season Grass: 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. The overstory of large cottonwoods provides habitat for a variety of birds ranging from raptors to neo-tropical migrants.

Mature Cottonwoods/Cheatgrass: The plant community composition is less diverse, and thus, less apt to meet the seasonal needs of large herbivores such as deer and antelope. It may provide some foraging opportunities for sage grouse when it occurs proximal to woody cover. Good grasshopper habitat equals good foraging for birds. The overstory of large cottonwoods provides habitat for a variety of birds ranging from raptors to neo-tropical migrants.

Rhizomatous wheatgrass
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.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occuring plants in MLRA 58B, 15-17 inch Northern Plains

COMMON NAME/	SCIENTIFIC NAME	SCI. SYMBOL	*Cattle*	*Sheep*	*Horses*	*Mule Deer*	*Antelope*
GRASSES/GRASSLIKES							
alkali bluegrass	Poa secunda ssp. juncifolia	POSEJ	DDDD	PPPP	DDDD	PPPP	PPPP
alkali cordgrass	Spartina gracilis	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU
alkali sacaton	Sporobolus airoides	SPAI	PPPP	DDDD	PPPP	DDDD	DDDD
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 bluestem	Andropogon gerardii	ANGE	PPPP	PPPP	PPPP	DDDD	DDDD
blue grama	Bouteloua gracilis	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD
bluejoint reedgrass	Calamagrostis canadensis	CACA4	PPPP	DDDD	PPPP	UUUU	UUUU
bottlebrush squirreltail	Elymus elymoides	ELELE	DDDD	DDDD	DDDD	UUUU	UUUU
buffalograss	Buchloe dactyloides	BUDA	DDDD	DDDD	DDDD	DDDD	DDDD
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
Cusick's bluegrass	Poa cusickii	POCU3	PPPP	PPPP	PPPP	PPPP	PPPP
Fendler threeawn	Aristida purpurea	ARPUL	UUUU	UUUU	UUUU	UUUU	UUUU
green needlegrass	Nassella viridula	NAVI4	PPPP	PPPP	PPPP	PPPP	PPPP
hairy grama	Bouteloua hirsuta	BOHI2	DDDD	DDDD	DDDD	DDDD	DDDD
Indian ricegrass	Achnatherum hymenoides	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP
inland saltgrass	Distichlis spicata	DISP	UUUU	UUUU	UUUU	UUUU	UUUU
inland sedge	Carex interior	CAIN11	DDDD	DDDD	DDDD	UUUU	UUUU
little bluestem	Schizachyrium scoparium	SCSC	PPPP	PPPP	PPPP	DDDD	DDDD
mat muhly	Muhlenbergia richardsonis	MURI	UUUU	UUUU	UUUU	UUUU	UUUU
Nebraska sedge	Carex nebraskensis	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
needleandthread	Hesperostipa comata	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP
needleleaf sedge	Carex duriuscula	CADU6	UUUU	UUUU	UUUU	UUUU	UUUU
northern reedgrass	Calamagrostis stricta	CAST13	PPPP	DDDD	PPPP	UUUU	UUUU
Nuttall's alkaligrass	Puccinellia nuttaliana	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP
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
prairie sandreed	Calamovilfa longifolia	CALO	PPPP	DDDD	PPPP	UUUU	UUUU
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	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD
spike sedge	Carex nardina	CANA2	DDDD	DDDD	DDDD	UUUU	UUUU
sun sedge	Carex inops ssp. heliophila	CAINH2	PPPP	DDDD	PPPP	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
western wheatgrass	Pascopyrum smithii	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
FORBS							
American licorice	Glycyrrhiza lepidota	GLLE3	UUUU	UUUU	UUUU	UUUU	UUUU
American vetch	Vicia americana	VIAM	PPPP	PPPP	PPPP	PPPP	PPPP
arrowgrass	Triglochin spp.	TRIGL	T	T	T	T	T
asters	Asters	ASTER	UUUU	UUUU	UUUU	UUUU	UUUU
biscuitroots	Lomatium spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
bluebells	Mertensia	MERTE	DDDD	PPPP	DDDD	DDDD	DDDD
blue-eyed grass	Sisyrinchium spp.	SISYR	DDDD	PPPP	DDDD	DDDD	DDDD
breadroot scurfpea	Pediomelum esculentum	PEES	DDDD	DDDD	DDDD	DDDD	DDDD
cattail, broad-leaf	Typha latifolia	TYLA	DDDD	UUUU	DDDD	UUUU	UUUU
cattail, narrow-leaf	Typha angustifolia	TYAN	DDDD	UUUU	DDDD	UUUU	UUUU
fringed sagewort	Artemisia frigida	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU
green sagewort	Artemisia dracunculus	ARDR4	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
milkvetches	Astragalus	ASTRA	DDDD	DDDD	DDDD	DDDD	DDDD
poison hemlock	Conium maculatum	COMA2	T	T	T	T	T
prairie coneflower	Ratibida columnifera	RACO3	DDDD	PPPP	DDDD	PPPP	PPPP
prairie thermopsis	Thermopsis rhombifolia	THRHA	UUUU	UUUU	UUUU	UUUU	UUUU
purple prairie clover	Dalea purpurea	DAPU5	PPPP	PPPP	PPPP	PPPP	PPPP
Pursh seepweed	Suaeda calceoliformis	SUCA2	UUUU	UUUU	UUUU	UUUU	UUUU
rosy pussytoes	Antennaria rosea	ANRO2	UUUU	UUUU	UUUU	UUUU	UUUU
scarlet gaura	Gaura coccinea	GACO5	UUUU	UUUU	UUUU	UUUU	UUUU
stemless goldenweed	Haplopappus acaulis	HAAC	UUUU	UUUU	UUUU	UUUU	UUUU
sulphur flower buckwheat	Eriogonum umbellatum	ERUM	UUUU	UUUU	UUUU	UUUU	UUUU
twogrooved milkvetch	Astragalus bisulcatus	ASBI2	T	T	T	T	T
water hemlocks	Cicuta spp.	CICUT	T	T	T	T	T
western yarrow	Achillea lanulosa	ACHIL	UUUU	UUUU	UUUU	UUUU	UUUU
white prairie clover	Dalea candida	DACA7	PPPP	PPPP	PPPP	PPPP	PPPP
wild onion	Allium textile	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD
woodyaster	Xylorhiza spp.	XYLOR	T	T	T	T	T
TREES, SHRUBS & HALF-SHRUBS							
big sagebrush	Artemisia tridentata	ARTR2	UUUU	DDDD	UUUU	DDDD	DDDD
birdfoot sagebrush	Artemisia pedatifida	ARPE6	UUUU	UUUU	UUUU	UUUU	UUUU
black greasewood	Sarcobatus vermiculatus	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD
bur oak	Quercus macrocarpa	QUMA2	UUUU	DDDD	UUUU	PPPP	DDDD
fourwing saltbush	Atriplex canescens	ATCA2	PPPP	PPPP	PPPP	PPPP	PPPP
Gardners saltbush	Atriplex gardneri	ATGA	PPPP	PPPP	DDDD	PPPP	PPPP
green rabbitbrush	Chrysothamnus viscidiflorous	CHVI8	DDDD	DDDD	DDDD	DDDD	DDDD
junipers	Juniperus scopulorum	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU
leadplant	Amorpha canescens	AMCA6	PPPP	PPPP	PPPP	PPPP	PPPP
plains cottonwood (sprouts)	Populous deltoides	PODEM	DDDD	DDDD	DDDD	DDDD	DDDD
ponderosa pine (abortion in cattle)	Pinus ponderosa	PIPO	UUUU	UUUU	UUUU	UUUU	UUUU
rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	DDDD	UUUU	DDDD	DDDD
silver sagebrush	Artemisia cana	ARCAC5	DDDD	DDDD	DDDD	PPPP	PPPP
silverberry	Eleagnus commutata	ELCO	UUUU	UUUU	UUUU	DDDD	UUUU
skunkbush sumac	Rhus trilobata	RHTR	DDDD	DDDD	DDDD	DDDD	DDDD
western snowberry	Symphoricarpos occidentalis	SYOC	UUUU	UUUU	UUUU	DDDD	UUUU
wildrose	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

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	2500-3500	.7
Mature Cottonwoods/Cool-Season Grass	2000-3000	.6
Mature Cottonwoods/Cheatgrass	800-1800	.3
Rhizomatous wheatgrass	1500-2500	.6

* - 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 and C, with localized areas in hydrologic group D. Infiltration ranges from moderately slow to rapid. Runoff potential for this site varies from low to moderate depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where short-grasses form a strong sod and dominate the site. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses such as bluebunch wheatgrass. 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

Overflow	058BY230WY
Subirrigated	058BY274WY

Similar Sites
() Lowland 10-14" Northern Plains P.Z. 058BY128WY
[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. Those involved in developing this site include: Glen Mitchell, Range Management Specialist, NRCS; Chuck Ring, Range Management Specialist, NRCS; and Everet Bainter, Range Management Specialist. 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

Data Source	Number of Records	Sample Period	State	County
SCS-RANGE-417	12	1971-1994	WY	Campbell & others
Ocular estimates	5	1990-1999	WY	Campbell & others

State Correlation
This site occurs entirely within Wyoming.

Type Locality

Field Offices
Gillette, Lusk, Newcastle, Sundance

Relationship to Other Established Classifications

Other References

Site Description Approval

Digitally signed by Everet Bainter, SRMS, Wyoming
cn=Everet Bainter, SRMS, Wyoming, c=US
Date: 2001.04.02 10:31:37 -07'00'
Reason: I am approving this document

4/2/01

State Range Management Specialist | Date