

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Shallow Sandy (SwSy) 10-14” Northern Plains Precipitation Zone,

Site ID: 058BY166WY

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

Physiographic Features

This site occurs on nearly level to 50% slopes.

Landform: Hill sides, ridges and escarpments **Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	3800	5100
Slope (percent):	0	45
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	medium

Climatic features

Annual precipitation ranges from 10-14 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. This is predominantly 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 “Clearmont 5 SW” climate station:

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MLRA: 58B – Northern Rolling High Plains

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Frost-free period (32 °F): 76 - 132 days; (5 yrs. out of 10, these days will occur between May 30 – September 11)

Freeze-free period 28 °F): 110 - 145 days; (5 yrs. out of 10, these days will occur between May 16 – September 21)

Mean annual precipitation: 12.4 inches

Mean annual air temperature: 43.2 °F (28.4°F Avg. Min. – 57.9°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: “Dull Center”

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 shallow (less than 20”to bedrock) well-drained soils formed in eolian deposits or alluvium over residuum or residuum. These soils have moderately rapid to rapid permeability and may occur on all slopes. The bedrock may be of any kind except igneous or volcanic and is virtually impenetrable to plant roots. The surface soil will be one or more of the following textures: fine sandy loam, sandy loam, loamy fine sand, loamy sand, or sand. Thin ineffectual layers of other soil textures are disregarded. Layers of the soil most influential to the plant community vary from 3 to 6 inches thick.

Major Soil Series correlated to this site include: Taluce, Tassel, Niobrara,

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

Parent Material Kind: residuum, alluvium, eolian deposits

Parent Material Origin: sandstone, unspecified

Surface Texture: loamy fine sand, fine sandy loam, sandy loam, loamy sand, sand

Surface Texture Modifier: none

Subsurface Texture Group: sand

Surface Fragments ≤ 3” (% Cover): 0

Surface Fragments > 3” (%Cover): 0

Subsurface Fragments ≤ 3” (% Volume): 0 to 10

Subsurface Fragments > 3” (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	well	excessive
Permeability Class:	rapid	very rapid
Depth (inches):	10	20
Electrical Conductivity (mmhos/cm) ≤20”:	0	2
Sodium Absorption Ratio ≤20”:	0	0
Soil Reaction (1:1 Water) ≤20”:	6.6	7.8
Soil Reaction (0.1M CaCl2) ≤20”:	NA	NA
Available Water Capacity (inches) ≤30”:	0.6	1.4
Calcium Carbonate Equivalent (percent) ≤20”:	0	5

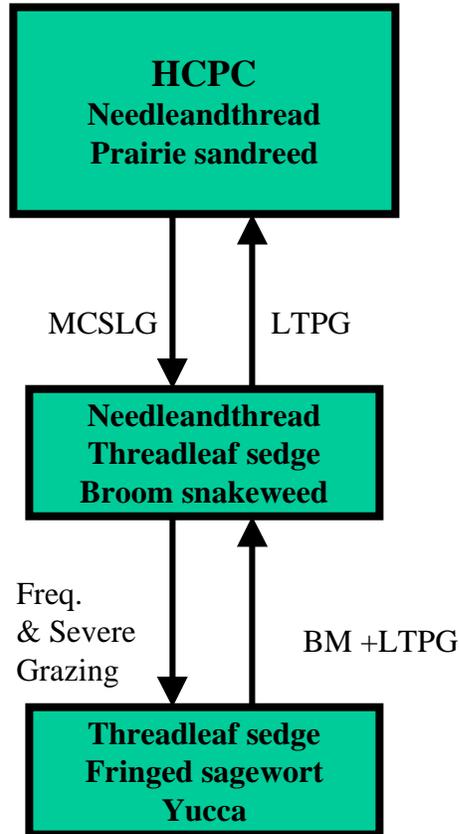
Plant Communities

Ecological Dynamics of the Site:

As this site deteriorates, species such as threadleaf sedge and fringed sagewort will increase. Mid grasses such as prairie sandreed and little bluestem 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 DYNAMICS
REFERENCE PLANT COMMUNITY

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Grp	Allowable Annual Production			% Comp (MAX.)
				lbs./acre			
				below normal 600	normal 1000	above normal 1300	
GRASSES/GRASSLIKES							
RHIZOMATOUS WHEATGRASSES:							
thickspike wheatgrass	Elymus lanceolatus	ELLAL	1	60	100	130	10%
western wheatgrass	Pascopyrum smithii	PASM	1	60	100	130	10%
OTHER GRASSES							
bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	2	60	100	130	10%
Indian ricegrass	Achnatherum hymenoides	ACHY	3	60	100	130	10%
little bluestem	Schizachyrium scoparium	SCSC	5	60	100	130	10%
needleandthread	Hesperostipa comata	HECO26	6	150	250	325	25%
Cusick's bluegrass	Poa cusickii	POCU3	7	60	100	130	10%
prairie sandreed	Calamoviiffa longifolia	CALO	8	120	200	260	20%
sideoats grama	Bouteloua curtipendula	BOCU	9	60	100	130	10%
blue grama	Bouteloua gracilis	BOGR2	10	60	100	130	10%
hairy grama	Bouteloua hirsuta	BOHI2	11	60	100	130	10%
MISCELLANEOUS GRASSES/GRASSLIKES*							
prairie junegrass	Koeleria macrantha	KOMA	12	30	50	65	5%
Sandberg bluegrass	Poa secunda	POSE	12	30	50	65	5%
sand dropseed	Sporobolus cryptandrus	SPCR	12	30	50	65	5%
plains muhly	Muhlenbergia cuspidata	MUCU3	12	30	50	65	5%
threadleaf sedge	Carex filifolia	CAFI	12	30	50	65	5%
FORBS							
MISCELLANEOUS FORBS*							
American vetch	Vicia americana	VIAM	13	90	150	195	15%
prairie coneflower	Ratibida columnifera	RACO3	13	30	50	65	5%
asters	Asters	ASTER	13	30	50	65	5%
biscuitroots	Lomatium spp.	LOMAT	13	30	50	65	5%
breadroot scurfpea	Pediomelum esculentum	PEES	13	30	50	65	5%
western yarrow	Achillea lanulosa	ACHIL	13	30	50	65	5%
rosy pussytoes	Antennaria rosea	ANRO2	13	30	50	65	5%
milkvetches	Astragalus	ASTRA	13	30	50	65	5%
stemless goldenweed	Haplopappus acaulis	HAAC	13	30	50	65	5%
sulphur flower buckwheat	Eriogonum umbellatum	ERUM	13	30	50	65	5%
scarlet gaura	Gaura coccinea	GACO5	13	30	50	65	5%
purple prairie clover	Dalea purpurea	DAPU5	13	30	50	65	5%
white prairie clover	Dalea candida	DACA7	13	30	50	65	5%
bluebells	Mertensia	MERTE	13	30	50	65	5%
wild onion	Allium textile	ALTE	13	30	50	65	5%
fringed sagewort	Artemisia frigida	ARFR4	13	30	50	65	5%
hawksbeard	Crepis acuminata	CRAC2	13	30	50	65	5%
TREES, SHRUBS & HALF-SHRUBS							
Fourwing saltbush	Atriplex canescens	ATCA2	14	60	100	130	10%
OTHER TREES, SHRUBS & HALF-SHRUBS*							
big sagebrush	Artemisia tridentata	ARTR2	15	90	150	195	15%
green rabbitbrush	Chrysothamnus viscidiflorous	CHV18	15	30	50	65	5%
silver sagebrush	Artemisia cana	ARCAC5	15	30	50	65	5%
skunkbush sumac	Rhus trilobata	RHTR+C10	15	30	50	65	5%
winterfat	Krascheninnikovia lanata	KRLA2	15	30	50	65	5%
yucca	Yucca glauca	YUGL	15	30	50	65	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.

Needleandthread, Prairie Sandreed 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 75% grasses or grass-like plants, 15% forbs, and 10% woody plants. The state is a mix of warm and cool season midgrasses. The major grasses include needleandthread, prairie sandreed, little bluestem, and sideoats grama. Other grasses occurring on the state include bluebunch wheatgrass, Sandberg bluegrass, blue grama, and threadleaf sedge.

The total annual production (air-dry weight) of this state is about 1000 pounds per acre, but it can range from about 600 lbs./acre in unfavorable years to about 1300 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	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

The state is 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 the plant community to the *Needleandthread/ Threadleaf sedge/ Broom snakeweed Vegetation State*.
- Frequent and Severe grazing will convert the plant community to the *Threadleaf sedge/Fringed sagewort/Yucca Vegetation State*.

Needleandthread/ Threadleaf sedge/ Broom snakeweed Community

This plant community is the result of moderate continuous season-long grazing. The understory of grass includes needleandthread, threadleaf sedge, and prairie junegrass. When compared to the Historic Climax Plant Community, prairie sandreed and little bluestem have decreased. Threadleaf sedge and needleandthread have increased. Broom snakeweed has invaded. This community is well suited to grazing by both domestic livestock and wildlife, during the spring summer and fall.

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The total annual production (air-dry weight) of this state is about 700 pounds per acre, but it can range from about 500 lbs./acre in unfavorable years to about 900 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	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

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 HCPC condition. The sod forming nature of threadleaf sedge and needleandthread will make the transition to *Historic Climax Plant Community* difficult.
- Frequent and Severe grazing use will convert this state to the *Threadleaf sedge/ Fringed sagewort/ Yucca Vegetation State*.

Threadleaf sedge/ Fringed sagewort/ Yucca Plant Community

This plant community is the result of frequent and severe grazing. A sod of threadleaf sedge and needleandthread dominates it. Broom snakeweed and yucca have increased. When the historic climax plant community is replaced by sod forming communities and woody shrubs, grass production is reduced.

The total annual production (air-dry weight) of this state is about 500 pounds per acre, but it can range from about 400 lbs./acre in unfavorable years to about 550 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	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

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 this sod protects the site, off-site areas are affected by excessive runoff that may cause gully erosion. This sod is resistant to change and may require practices such as long-term prescribed grazing to return to a mid grass community.

Transitional pathways leading to other plant communities are as follows:

- Long-term Prescribed grazing along with fringed sagewort control will return this plant community to near Historic Climax Plant Community condition.

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.

Needleandthread/ Threadleaf sedge/ Broom snakeweed: These communities provide foraging for antelope and other grazers. They may be used as a foraging site by sage grouse if proximal to woody cover. Generally, these are not target plant communities for wildlife habitat management.

Threadleaf sedge/Fringed sagewort/Yucca: These communities provide limited foraging for antelope and other grazers due to low production. They may be used as a foraging site by sage grouse if proximal to woody cover. Generally, these are not target plant communities for wildlife habitat management.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 58B, 10-14 inch Northern Plains

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Cattle	Sheep	Horses	Mule Deer	Antelope
GRASSES/GRASSLIKES							
alkali bluegrass	<i>Poa secunda ssp. juncifolia</i>	POSEJ	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>	LEC14	PPPP	PPPP	PPPP	DDDD	DDDD
bearded wheatgrass	<i>Elymus caninus</i>	ELCA	PPPP	DDDD	PPPP	DDDD	DDDD
big bluestem	<i>Andropogon gerardii</i>	ANGE	PPPP	PPPP	PPPP	DDDD	DDDD
blue grama	<i>Bouteloua gracilis</i>	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD
bluejoint reedgrass	<i>Calamagrostis canadensis</i>	CACA4	PPPP	DDDD	PPPP	UUUU	UUUU
bottlebrush squirreltail	<i>Elymus elymoides</i>	ELE1E	DDDD	DDDD	DDDD	UUUU	UUUU
buffalograss	<i>Buchloe dactyloides</i>	BUDA	DDDD	DDDD	DDDD	DDDD	DDDD
Canada wildrye	<i>Elymus canadensis</i>	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD
Canby bluegrass	<i>Poa canbyi (syn. to Poa secunda)</i>	POCA (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP
Cusick's bluegrass	<i>Poa cusickii</i>	POCU3	PPPP	PPPP	PPPP	PPPP	PPPP
Fendler threeawn	<i>Aristida purpurea</i>	ARPUL	UUUU	UUUU	UUUU	UUUU	UUUU
green needlegrass	<i>Nassella viridula</i>	NAVI4	PPPP	PPPP	PPPP	PPPP	PPPP
hairy grama	<i>Bouteloua hirsuta</i>	BOH12	DDDD	DDDD	DDDD	DDDD	DDDD
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
little bluestem	<i>Schizachyrium scoparium</i>	SCSC	PPPP	PPPP	PPPP	DDDD	DDDD
mat muhly	<i>Muhlenbergia richardsonis</i>	MURI	UUUU	UUUU	UUUU	UUUU	UUUU
Nebraska sedge	<i>Carex nebraskensis</i>	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
needleandthread	<i>Hesperostipa comata</i>	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP
needleleaf sedge	<i>Carex durivuscula</i>	CADU6	UUUU	UUUU	UUUU	UUUU	UUUU
northern reedgrass	<i>Calamagrostis stricta</i>	CAST13	PPPP	DDDD	PPPP	UUUU	UUUU
Nuttall's alkaligrass	<i>Puccinellia nuttaliana</i>	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP
plains muhly	<i>Muhlenbergia cuspidata</i>	MUCU3	DDDD	DDDD	DDDD	UUUU	UUUU
plains reedgrass	<i>Calamagrostis montanensis</i>	CAMO	DDDD	DDDD	DDDD	DDDD	DDDD
prairie cordgrass	<i>Spartina pectinata</i>	SPPE	PPPP	DDDD	PPPP	UUUU	UUUU
prairie junegrass	<i>Koeleria macrantha</i>	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD
prairie sandreed	<i>Calamovilfa longifolia</i>	CALO	PPPP	DDDD	PPPP	UUUU	UUUU
sand bluestem	<i>Andropogon halli</i>	ANHA	PPPP	DDDD	PPPP	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
sideoats grama	<i>Bouteloua curtipendula</i>	BOCU	PPPP	PPPP	PPPP	DDDD	UUUU
slender wheatgrass	<i>Elymus trachycaulus</i>	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD
spike sedge	<i>Carex nardina</i>	CANA2	DDDD	DDDD	DDDD	UUUU	UUUU
thickspike wheatgrass	<i>Elymus lanceolatus</i>	ELLAL	DDDD	DDDD	DDDD	DDDD	DDDD
threadleaf sedge	<i>Carex filifolia</i>	CAFI	DDDD	DDDD	DDDD	DDDD	PPPP
tufted hairgrass	<i>Deschampsia caespitosa</i>	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD
western wheatgrass	<i>Pascopyrum smithii</i>	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
FORBS							
American licorice	<i>Glycyrrhiza lepidota</i>	GLLE3	UUUU	UUUU	UUUU	UUUU	UUUU
American vetch	<i>Vicia americana</i>	VIAM	PPPP	PPPP	PPPP	PPPP	PPPP
arrowgrass	<i>Triglochin spp.</i>	TRIGL	T	T	T	T	T
asters	Asters	ASTER	UUUU	UUUU	UUUU	UUUU	UUUU
biscuitroots	<i>Lomatium spp.</i>	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
bluebells	<i>Mertensia</i>	MERTE	DDDD	PPPP	DDDD	DDDD	DDDD
blue-eyed grass	<i>Sisyrinchium spp.</i>	SISYR	DDDD	PPPP	DDDD	DDDD	DDDD
breadroot scurfpea	<i>Pediomelum esculentum</i>	PEES	DDDD	DDDD	DDDD	DDDD	DDDD
cattail, broad-leaf	<i>Typha latifolia</i>	TYLA	DDDD	UUUU	DDDD	UUUU	UUUU
cattail, narrow-leaf	<i>Typha angustifolia</i>	TYAN	DDDD	UUUU	DDDD	UUUU	UUUU
fringed sagewort	<i>Artemisia frigida</i>	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU
green sagewort	<i>Artemisia dracunculul</i>	ARDR4	UUUU	UUUU	UUUU	UUUU	UUUU
hawkbeard	<i>Crepis acuminata</i>	CRAC2	UUUU	PPPP	UUUU	DDDD	DDDD
horsetails	<i>Equisetum spp.</i>	EQUIS	UUUU	UUUU	UUUU	UUUU	UUUU
iris	<i>Iris spp.</i>	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU
milkvetches	<i>Astragalus</i>	ASTRA	DDDD	DDDD	DDDD	DDDD	DDDD
poison hemlock	<i>Conium maculatum</i>	COMA2	T	T	T	T	T
prairie coneflower	<i>Ratibida columnifera</i>	RACO3	DDDD	PPPP	DDDD	PPPP	PPPP
prairie thermopsis	<i>Thermopsis rhombifolia</i>	THRHA	UUUU	UUUU	UUUU	UUUU	UUUU
purple prairie clover	<i>Dalea purpurea</i>	DAPU5	PPPP	PPPP	PPPP	PPPP	PPPP
Pursh seepweed	<i>Suaeda calceoliformis</i>	SUCA2	UUUU	UUUU	UUUU	UUUU	UUUU
rosy pussytoes	<i>Antennaria rosea</i>	ANRO2	UUUU	UUUU	UUUU	UUUU	UUUU
scarlet gaura	<i>Gaura coccinea</i>	GACO5	UUUU	UUUU	UUUU	UUUU	UUUU
stemless goldenweed	<i>Haplopappus acaulis</i>	HAAC	UUUU	UUUU	UUUU	UUUU	UUUU
sulphur flower buckwheat	<i>Eriogonum umbellatum</i>	ERUM	UUUU	UUUU	UUUU	UUUU	UUUU
twogrooved milkvetch	<i>Astragalus bisulcatus</i>	ASB12	T	T	T	T	T
water hemlocks	<i>Cicuta spp.</i>	CICUT	T	T	T	T	T
western yarrow	<i>Achillea lanulosa</i>	ACHIL	UUUU	UUUU	UUUU	UUUU	UUUU
white prairie clover	<i>Dalea candida</i>	DACA7	PPPP	PPPP	PPPP	PPPP	PPPP
wild onion	<i>Allium textile</i>	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD
TREES, SHRUBS & HALF-SHRUBS							
big sagebrush	<i>Artemisia tridentata</i>	ARTR2	UUUU	DDDD	UUUU	DDDD	DDDD
birdfoot sagebrush	<i>Artemisia pedatifida</i>	ARPE6	UUUU	UUUU	UUUU	UUUU	UUUU
black greasewood	<i>Sarcobatus vermiculatus</i>	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD
fourwing saltbush	<i>Atriplex canescens</i>	ATCA2	PPPP	PPPP	PPPP	PPPP	PPPP
Gardners saltbush	<i>Atriplex gardneri</i>	ATGA	PPPP	PPPP	DDDD	PPPP	PPPP
green rabbitbrush	<i>Chrysothamnus viscidiflorous</i>	CHV18	DDDD	DDDD	DDDD	DDDD	DDDD
junipers	<i>Juniperus scopulorum</i>	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU
plains cottonwood (sprouts)	<i>Populus deltoides</i>	PODEM	DDDD	DDDD	DDDD	DDDD	DDDD
ponderosa pine (abortion in cattle)	<i>Pinus ponderosa</i>	PIPO	UUUU	UUUU	UUUU	UUUU	UUUU
rubber rabbitbrush	<i>Ericameria nauseosa</i>	ERNA10	UUUU	DDDD	UUUU	DDDD	DDDD
silver sagebrush	<i>Artemisia cana</i>	ARCA5	DDDD	DDDD	DDDD	PPPP	PPPP
silverberry	<i>Eleagnus commutata</i>	ELCO	UUUU	UUUU	UUUU	DDDD	UUUU
skunkbush sumac	<i>Rhus trilobata</i>	RHTR	DDDD	DDDD	DDDD	DDDD	DDDD
western snowberry	<i>Symphoricarpos occidentalis</i>	SYOC	UUUU	UUUU	UUUU	DDDD	UUUU
wildrose	<i>Rosa woodsii var. woodsii</i>	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
willows	<i>Salix L.</i>	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU
winterfat	<i>Krascheninnikovia lanata</i>	KRLA2	PPPP	PPPP	PPPP	PPPP	PPPP
yucca	<i>Yucca glauca</i>	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	600-1300	.2
Threadleaf sedge/Needleandthread/Broom snakeweed	500-900	.17
Threadleaf sedge/Fringed sagewort/Yucca	400-700	.1

* - 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. Infiltration ranges from rapid to very 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. 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.

Site Type: Rangeland
MLRA: 58B – Northern Rolling High Plains

**Shallow Sandy 10-14” P.Z.
R058BY166WY**

Relationship to Other Established Classifications

Other References

Site Description Approval

State Range Management Specialist

Date

State Range Management Specialist

Date

Ecological Reference Worksheet

Author(s)/participant(s): _____
Contact for lead author: _____ **Reference site used? Yes/No**
Date: 4/05 **MLRA:** 58B **Ecological Site:** R058BY166WY Shallow Sandy (SwSy) 10-14"NP
 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>Indicators. 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 each community within the reference state, when appropriate & (3) cite data. Continue descriptions on separate sheet.</p>
<p>1. Number and extent of rills: Rills should not be present</p>
<p>2. Presence of water flow patterns: Barely observable</p>
<p>3. Number and height of erosional pedestals or terracettes: Essentially non-existent</p>
<p>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are <i>not</i> bare ground): Bare ground is 40-60% occurring in small areas throughout site</p>
<p>5. Number of gullies and erosion associated with gullies: Active gullies should be restricted to areas of concentrated water flow patterns on steeper slopes</p>
<p>6. Extent of wind scoured, blowouts and/or depositional areas: Small scoured sites may be observed</p>
<p>7. Amount of litter movement (describe size and distance expected to travel): Litter movement is little to none based on topography and water flow patterns</p>
<p>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): Plant cover and litter is at 50% or greater of soil surface and maintains soil surface integrity. Soil Stability class is anticipated to be 3 or greater.</p>
<p>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): Use Soil Series description for depth and color of A-horizon</p>
<p>10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: Grass canopy and basal cover should reduce raindrop impact and slow overland flow providing increased time for infiltration to occur. Infiltration is rapid to very rapid</p>
<p>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): No compaction layer or soil surface crusting should be present.</p>
<p>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to): Mid stature Cool Season Grasses > Mid Stature Warm Season Grasses > Short Grasses/Grasslikes > Shrubs > Forbs</p>
<p>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Very Low</p>
<p>14. Average percent litter cover and depth : Average litter cover is 15-25% with depths of 0.25 to 0.5 inches</p>
<p>15. Expected annual production (this is all above-ground production, not just forage production): 1000 lbs/ac</p>
<p>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”: Threadleaf sedge, Prickly Pear, Broom Snakeweed, Yucca, and Species found on Noxious Weed List</p>
<p>17. Perennial plant reproductive capability: All species are capable of reproducing</p>