

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Saline Upland (SU) 15-17” Northern Plains Precipitation Zone,

Site ID: 058BY244WY

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

Physiographic Features

This site occurs on nearly level to moderately sloping land.

Landform: Hill sides, alluvial fans & stream terraces

Aspect: N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	3400	4600
Slope (percent):	0	15
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 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:

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

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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:	<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 moderately deep (greater than 20” to bedrock) to very deep well-drained soils formed in alluvium from sodic or alkaline materials. Layers of the soil most influential to the plant community vary from 3 to 6 inches thick. These soils have moderate to slow permeability and are moderately to strongly saline and/or alkaline. The surface soil will vary from 2 to 6 inches in thickness. The surface soil will be one or more of the following textures: very fine sandy loam, fine sandy loam, loam, clay loam, silt loam, and silty clay loam. Some soils may contain more soluble salts in the subsoils than in the surface soils.

Major Soil Series correlated to this site include: Cedar butte

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

Parent Material Kind: alluvium

Parent Material Origin: sandstone, shale

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

Surface Texture Modifier: none

Subsurface Texture Group: clay

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	well
Permeability Class:	slow	moderate
Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) ≤20”:	4	16
Sodium Absorption Ratio ≤20”:	10	25
Soil Reaction (1:1 Water) ≤20”:	6.6	9.0
Soil Reaction (0.1M CaCl₂) ≤20”:	NA	NA
Available Water Capacity (inches) ≤30”:	2.8	5.7
Calcium Carbonate Equivalent (percent) ≤20”:	0	10

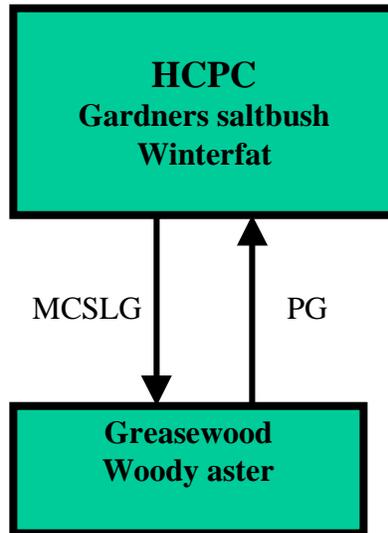
Plant Communities

Ecological Dynamics of the Site:

As this site deteriorates, species such as greasewood and woody aster will increase and annuals will invade. Cool season grasses such as Indian ricegrass, alkali sacaton, and western wheatgrass 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	normal	above normal	
GRASSES/GRASSLIKES				400	600	800	
RHIZOMATOUS WHEATGRASSES:							
thickspike wheatgrass	Elymus lanceolatus	ELLAL	1	60	90	120	15%
western wheatgrass	Pascopyrum smithii	PASM	1	60	90	120	15%
OTHER GRASSES							
alkali sacaton	Sporobolus airoides	SPAI	2	40	60	80	10%
Indian ricegrass	Achnatherum hymenoides	ACHY	3	40	60	80	10%
Sandberg bluegrass	Poa secunda	POSE	4	20	30	40	5%
bottlebrush squirreltail	Elymus elymoides	ELEL5	5	40	60	80	10%
inland saltgrass	Distichlis spicata	DISP	6	60	90	120	15%
FORBS							
MISCELLANEOUS FORBS*							
American vetch	Vicia americana	VIAM	7	20	30	40	5%
prairie coneflower	Ratibida columnifera	RACO3	7	20	30	40	5%
asters	Asters	ASTER	7	20	30	40	5%
milkvetches	Astragalus	ASTRA	7	20	30	40	5%
scarlet gaura	Gaura coccinea	GACO5	7	20	30	40	5%
purple prairie clover	Dalea purpurea	DAPU5	7	20	30	40	5%
white prairie clover	Dalea candida	DACA7	7	20	30	40	5%
American licorice	Glycyrrhiza lepidota	GLLE3	7	20	30	40	5%
wild onion	Allium textile	ALTE	7	20	30	40	5%
woodyaster	Xylorhiza spp.	XYLOR	7	20	30	40	5%
hawksbeard	Crepis acuminata	CRAC2	7	20	30	40	5%
TREES, SHRUBS & HALF-SHRUBS*							
black greasewood	Sarcobatus vermiculatus	SAVE4	8	40	60	80	10%
Gardners saltbush	Atriplex gardneri	ATGA	9	160	240	320	40%
Winterfat	Krascheninnikovia lanata	KRLA2	10	20	30	40	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.

Gardners saltbush/Winterfat 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 suited for grazing by domestic livestock. Potential vegetation is about 50% grasses or grass-like plants, 5% forbs, and 45% woody plants. Saline tolerant shrubs such as Gardner’s saltbush, and winterfat dominate this state. The major grasses include alkali sacaton, rhizomatous wheatgrasses, inland saltgrass, and Indian ricegrass. Other grasses occurring in this state include squirreltail and Sandberg bluegrass. This state provides valuable winter grazing for wildlife and domestic livestock

The total annual production (air-dry weight) of this state is about 600 pounds per acre, but it can range from about 400 lbs./acre in unfavorable years to about 800 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 state is fragile, but well adapted to the Northern Great Plains climatic conditions. The diversity in plant species allows for some drought resistance. This is a sustainable plant community, but is difficult to reestablish when damaged. (Site/soil stability, watershed function, and biologic integrity).

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

- Moderate, Continuous Season-Long grazing will convert this plant community to the *Greasewood/Woody aster Plant Community*.

Greasewood/Woody aster Plant Community

Currently this vegetation state is found under moderate, season-long grazing by livestock. Greasewood, woody aster, cheatgrass and bare ground are a major part of this state. Sparse saline tolerant grasses make up the majority of the understory with the balance made up of annual cool-season grass, and miscellaneous forbs.

Dominant grasses include inland saltgrass, Sandberg bluegrass, and squirreltail. Forbs, commonly found in this plant community, include woody aster, hairy goldaster, prairie thermopsis, and scarlet globemallow. Plains pricklypear and winterfat can also occur.

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When compared to the Historic Climax Plant Community, greasewood, woody aster, and cheatgrass have increased. Indian ricegrass, alkali sacaton, Gardner’s saltbush, and winterfat have decreased.

The total annual production (air-dry weight) of this state is about 375 pounds per acre, but it can range from about 250 lbs./acre in unfavorable years to about 500 lbs./acre in above average years.

The following is the growth curve 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 site is at risk and not well protected from excessive erosion. Grazing for wildlife and cattle has been reduced. The biotic integrity of this plant community is not intact. The amount of bare ground puts the watershed at risk.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing will prevent further deterioration and over the long-term may return this state to near *Historic Climax Plant Community Vegetation State*.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Historic Climax Plant Community: The predominance of woody plants in this plant community provides winter grazing for mixed-feeders, such as bison, elk, and antelope. Suitable thermal and escape cover for deer may be limited due to the low quantities of tall woody plants. When found adjacent to sagebrush dominated states, this plant community may provide lek sites for sage grouse. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Some grassland obligate small mammals would occur here.

Greasewood/woody aster: This plant community exhibits a low level of plant species diversity due to the accumulation of salts in the soil. It may provide some thermal and escape cover for deer and antelope if no other woody community is nearby, but in most cases it is not a desirable plant community to select as a wildlife habitat management objective.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring 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. junceifolia	POSEJ	DDDD	PPPP	DDDD	PPPP	PPPP
alkali cordgrass	Spartina gracilis	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU
alkali sacaton	Sporobolus airoides	SPA1	PPPP	DDDD	PPPP	DDDD	DDDD
Baltic rush	Juncus balticus	JUBA	DDDD	UUUU	DDDD	UUUU	UUUU
basin wildrye	Leymus cinereus	LEC4	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	Āristida purpurea	ARPUL	UUUU	UUUU	UUUU	UUUU	UUUU
green needlegrass	Nassella viridula	NAV14	PPPP	PPPP	PPPP	PPPP	PPPP
hairly grama	Bouteloua hirsuta	BOH12	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 nuttalliana	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	Pediemelum 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 dracuncululus	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 viscidiflorus	CHV18	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)	Populus 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	400-800	.2
Greasewood/woody aster	250-500	.05

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

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts may be present. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

Recreational Uses

This site provides some hunting opportunities for upland game species.

Wood Products

No appreciable wood products are present on the site.

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Other Products

None noted.

Supporting Information

Associated Sites

Very Shallow	058BY276WY
Shale	058BY254WY
Shallow Loamy	058BY262WY

Similar Sites

() – Saline Upland 10-14” Northern Plains P.Z. 058BY144WY
[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

<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	Campbell & others
Ocular estimates		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 Type: Rangeland
MLRA: 58B – Northern Rolling High Plains

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Site Description Approval

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:** R058BY244WY Saline Upland (SU) 15-17"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 25-35%</p>
<p>5. Number of gullies and erosion associated with gullies: Active gullies should not be present</p>
<p>6. Extent of wind scoured, blowouts and/or depositional areas: None</p>
<p>7. Amount of litter movement (describe size and distance expected to travel): Little to no plant litter movement. Plant litter remains in place and is not moved by erosional forces.</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 60% or greater of soil surface and maintains soil surface integrity. Soil Stability class is anticipated to be 4 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. Healthy deep rooted native grasses enhance infiltration and reduce runoff. Infiltration is slow to moderate.</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): Shrubs >> Mid stature Grasses > Short stature Grasses > 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 15-20% with depths of 0.1 to 0.5 inches</p>
<p>15. Expected annual production (this is all above-ground production, not just forage production): 600 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”: Buffalograss, Inland saltgrass, Broom Snakeweed, and Species found on Noxious Weed List</p>
<p>17. Perennial plant reproductive capability: All species are capable of reproducing</p>