

## **United States Department of Agriculture Natural Resources Conservation Service**

### **Ecological Site Description**

**Site Type:** Rangeland

**Site Name:** Saline Subirrigated (SS) 10-14” Precipitation Zone,

**Site ID:** 058BY142WY

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

### **Physiographic Features**

This site normally occurs on nearly level bottomlands and adjacent to streams, springs and ponds.

**Landform:** alluvial fans, drainage ways & stream terraces

**Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	3800	5100
<b>Slope (percent):</b>	0	6
<b>Water Table Depth (inches):</b>	0	30
<b>Flooding:</b>		
<b>Frequency:</b>	occasional	frequent
<b>Duration:</b>	very brief	brief
<b>Ponding:</b>		
<b>Depth (inches):</b>	0	0
<b>Frequency:</b>	none	none
<b>Duration:</b>	none	none
<b>Runoff Class:</b>	negligible	low

### **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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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

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

**Stream Type:** C (Rosgen)

## Representative Soil Features

The soils of this site have a strong saline and/or alkaline water table within reach of plant species during most of the growing season. Salt crusts are commonly found on ridges and mounds during the dry periods. Moisture is not usually the factor limiting plant production. 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:

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

**Parent Material Kind:** alluvium

**Parent Material Origin:** sandstone, shale

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

**Surface Texture Modifier:** none

**Subsurface Texture Group:** loam

**Surface Fragments ≤ 3” (% Cover):** 0

**Surface Fragments > 3” (%Cover):** 0

**Subsurface Fragments ≤ 3” (% Volume):** 0

**Subsurface Fragments > 3” (% Volume):** 0

	<b><u>Minimum</u></b>	<b><u>Maximum</u></b>
<b>Drainage Class:</b>	poorly drained	moderately well
<b>Permeability Class:</b>	moderately slow	moderately rapid
<b>Depth (inches):</b>	20	>60
<b>Electrical Conductivity (mmhos/cm) ≤20”:</b>	4	16
<b>Sodium Absorption Ratio ≤20”:</b>	10	25
<b>Soil Reaction (1:1 Water) ≤20”:</b>	6.6	9.0
<b>Soil Reaction (0.1M CaCl<sub>2</sub>) ≤20”:</b>	NA	NA
<b>Available Water Capacity (inches) ≤30”:</b>	2.8	6.2
<b>Calcium Carbonate Equivalent (percent) ≤20”:</b>	0	10

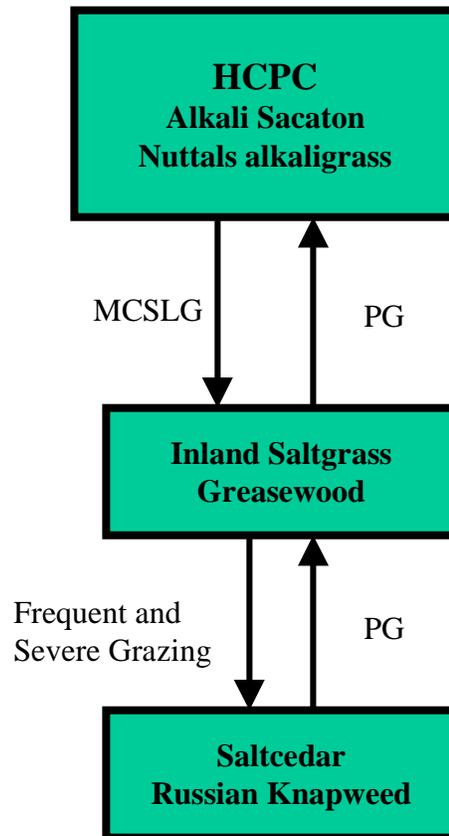
## **Plant Communities**

### **Ecological Dynamics of the Site:**

As this site deteriorates, species such as inland saltgrass, and greasewood increase. Grasses such as alkali sacaton and Nuttall's alkaligrass 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** - Moderate Sodium in Soil

PLANT COMMUNITY DYNAMICS  
REFERENCE PLANT COMMUNITY

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Grp	Allowable Annual Production			% Comp (MAX.)
				lbs./acre			
				below normal 2500	normal 3000	above normal 3500	
<b>GRASSES/GRASSLIKES</b>							
<b>RHIZOMATOUS WHEATGRASSES:</b>							
thickspike wheatgrass	Elymus lanceolatus	ELLAL	1	125	150	175	5%
western wheatgrass	Pascopyrum smithii	PASM	1	125	150	175	5%
<b>OTHER GRASSES</b>							
alkali sacaton	Sporobolus airoides	SPAI	2	1250	1500	1750	50%
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	3	250	300	350	10%
inland saltgrass	Distichlis spicata	DISP	4	250	300	350	10%
<b>MISCELLANEOUS GRASSES/GRASSLIKES*</b>							
alkali bluegrass	Poa secunda ssp. juncifolia	POSEJ	5	125	150	175	5%
alkali cordgrass	Spartina gracilis	SPGR	5	125	150	175	5%
bearded wheatgrass	Elymus caninus	ELCA	5	125	150	175	5%
prairie cordgrass	Spartia pectinata	SPPE	5	125	150	175	5%
bottlebrush squirreltail	Elymus elymoides	ELEL5	5	125	150	175	5%
mat muhly	Muhlenbergia richardsonis	MURI	5	125	150	175	5%
<b>FORBS</b>							
<b>MISCELLANEOUS FORBS*</b>							
Pursh seepweed	Suaeda calceoliformis	SUCA2	6	125	150	175	5%
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%
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%
wild onion	Allium textile	ALTE	6	125	150	175	5%
hawksbeard	Crepis acuminata	CRAC2	6	125	150	175	5%
<b>TREES, SHRUBS &amp; HALF-SHRUBS</b>							
black greasewood	Sarcobatus vermiculatus	SAVE4	7	250	300	350	10%
rubber rabbitbrush	Ericameria nauseosa	ERNA10	8	125	150	175	5%
plains cottonwood	Populus deltoides	PODEM	9	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, Needleandthread, Blue Grama 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 85% grasses or grass-like plants, 5% forbs and 10% woody plants. Saline tolerant grasses dominate the state. The major grasses include alkali sacaton, Nuttal's alkaligrass and inland saltgrass. Grasses of lesser importance are alkali bluegrass, alkali cordgrass, mat muhly, rhizomatous wheatgrasses and squirreltail. Woody plants are greasewood, scattered cottonwoods, and rubber rabbitbrush.

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	5	20	30	15	10	15	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 this plant community to the *Inland saltgrass/Greasewood Vegetation State*.
- Frequent and Severe grazing will convert this plant community to the *Salt cedar/Russian knapweed Vegetation State*.

**Inland saltgrass/greasewood Plant Community**

This plant community evolved under moderate grazing by domestic livestock. Saline resistant grasses make up the majority of the understory. Greasewood and rubber rabbitbrush have increased on the site. Dominant grasses include inland saltgrass, alkali bluegrass, alkali sacaton, mat muhly, and cheatgrass. Forbs, commonly found in this plant community, include Pursh seepweed, Louisiana sagewort (cudweed), plains wallflower, hairy goldaster, and scarlet globemallow. Greasewood and rubber rabbitbrush canopy cover may be 20-40%.

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When compared to the Historical Climax Plant Community, Nuttal's alkaligrass, and alkali sacaton have decreased. Greasewood and rubber rabbitbrush have increased. The overstory of greasewood and understory of grass and forbs provide a diverse plant community, which 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 2150 pounds per acre, but it can range from about 1800 lbs./acre in unfavorable years to about 2500 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	5	20	30	15	10	15	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. The watershed is usually functioning.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing over the long-term will result in a plant community very similar to the *Historic Climax Plant Community*, except that greasewood will persist.
- Frequent and Severe grazing will convert this plant community to the *Salt cedar/Russian knapweed Vegetation State*.

### **Salt cedar/Russian knapweed Plant Community**

This plant community is the result of long-term improper grazing use. Salt cedar and Russian olive dominate this state. Understory grasses are inland saltgrass, cheatgrass, alkali muhly and alkali bluegrass. Russian knapweed has invaded.

The total annual production (air-dry weight) of this state is about 1050 pounds per acre, but it can range from about 900 lbs./acre in unfavorable years to about 1200 lbs./acre in above average years.

The following is the growth curve expected during an average 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	5	20	30	15	10	15	5	0	0

(Monthly percentages of total annual growth)

Bare ground has increased. The soil of this state is not well protected. The watershed is functioning but may produce excessive runoff.

Transitional pathways leading to other plant communities are as follows:

- Prescribed Grazing over the long-term will return this state to near *Historic climax plant community*, except that salt cedar and Russian olive will persist.

## **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.

**Inland saltgrass/Greasewood:** 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.

**Salt cedar/Russian knapweed:** This plant community exhibits a low level of plant species diversity. It may provide thermal and escape cover for deer and antelope. 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, 10-14 inch Northern Plains

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Cattle	Sheep	Horses	Mule Deer	Antelope
<b>GRASSES/GRASSLIKES</b>							
alkali bluegrass	<i>Poa secunda</i> ssp. <i>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>	ELELE	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</i> (syn. to <i>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>	NAV14	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
<b>FORBS</b>							
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</i> spp.	TRIGL	T	T	T	T	T
asters	Asters	ASTER	UUUU	UUUU	UUUU	UUUU	UUUU
biscuitroots	<i>Lomatium</i> spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
bluebells	<i>Mertensia</i>	MERTE	DDDD	PPPP	DDDD	DDDD	DDDD
blue-eyed grass	<i>Sisyrinchium</i> spp.	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</i> spp.	EQUIS	UUUU	UUUU	UUUU	UUUU	UUUU
iris	<i>Iris</i> spp.	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</i> spp.	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
<b>TREES, SHRUBS &amp; HALF-SHRUBS</b>							
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</i> var. <i>woodsii</i>	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
willows	<i>Salix</i> L.	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.

<b>Plant Community</b>	<b>Production (lb./ac)</b>	<b>Carrying Capacity* (AUM/ac)</b>
Historic Climax Plant Community	2500-3500	1.5
Inland saltgrass/Greasewood	1800-2500	1.2
Salt cedar/Russian knapweed	900-1200	.4

\* - 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**

Salinity/alkalinity is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group C and D. Infiltration ranges from moderately slow to moderately well. 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 are present. 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

**Saline Subirrigated 10-14” P.Z.  
R058BY142WY**

## Wood Products

No appreciable wood products are present on the site.

## Other Products

None noted.

## Supporting Information

### Associated Sites

Overflow	058BY130WY
Lowland	058BY128WY

### Similar Sites

() – Saline Subirrigated 15-17” Northern Plains P.Z. 058BY242WY  
[Higher 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	12	1971-1994	WY	Campbell & others
Ocular estimates	5	1990-1999	WY	Campbell & others

### State Correlation

This site has been correlated with Montana in MLRA 58B.

### Type Locality

### Field Offices

Buffalo, Douglas, Gillette, Lusk, Newcastle, Sheridan

### Relationship to Other Established Classifications

### Other References

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

**Saline Subirrigated 10-14” P.Z.  
R058BY142WY**

## 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:** R058BY142WY Saline Subirrigated (SS) 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><b>Indicators.</b> 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 <b>each</b> community within the reference state, when appropriate &amp; (3) cite data. Continue descriptions on separate sheet.</p>
<p><b>1. Number and extent of rills:</b> Rills should not be present</p>
<p><b>2. Presence of water flow patterns:</b> Barely observable</p>
<p><b>3. Number and height of erosional pedestals or terracettes:</b> Essentially non-existent</p>
<p><b>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are <i>not</i> bare ground):</b> Bare ground is 10-20% occurring in small areas throughout site</p>
<p><b>5. Number of gullies and erosion associated with gullies:</b> Active gullies should not be present</p>
<p><b>6. Extent of wind scoured, blowouts and/or depositional areas:</b> None</p>
<p><b>7. Amount of litter movement (describe size and distance expected to travel):</b> Little to no plant litter movement. Plant litter remains in place and is not moved by erosional forces.</p>
<p><b>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):</b> Plant cover and litter is at 80% or greater of soil surface and maintains soil surface integrity. Soil Stability class is anticipated to be 4 or greater.</p>
<p><b>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):</b> Use Soil Series description for depth and color of A-horizon</p>
<p><b>10. Effect of plant community composition (relative proportion of different functional groups) &amp; spatial distribution on infiltration &amp; runoff:</b> 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 moderately slow to moderate.</p>
<p><b>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):</b> No compaction layer is present. Some surface crusting of salts due to fluctuation of water table.</p>
<p><b>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: &gt;&gt;, &gt;, = to indicate much greater than, greater than, and equal to):</b> Mid stature Warm Season Grasses = Short and Mid stature Grasses/Grasslike &gt;Shrubs &gt; Forbs</p>
<p><b>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):</b> Very Low</p>
<p><b>14. Average percent litter cover and depth :</b> Average litter cover is 30-40% with depths of 0.25 to 1.0 inches</p>
<p><b>15. Expected annual production (this is all above-ground production, not just forage production):</b> 3000 lbs/ac</p>
<p><b>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”:</b> Inland saltgrass, Arrowgrass, Baltic Rush, Kochia, Russian thistle, and Species found on Noxious Weed List</p>
<p><b>17. Perennial plant reproductive capability:</b> All species are capable of reproducing</p>