

## United States Department of Agriculture Natural Resources Conservation Service

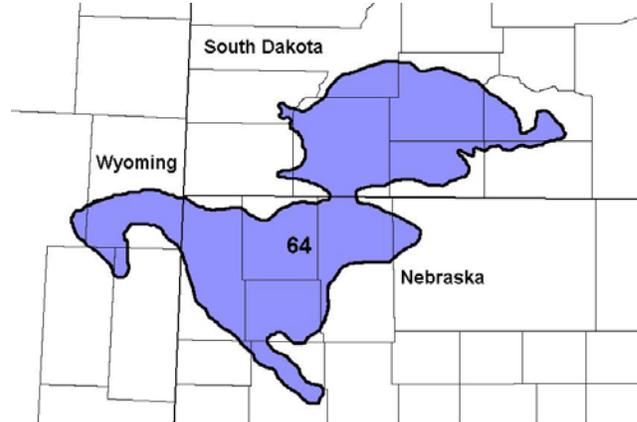
### Ecological Site Description

**Site Type:** Rangeland

**Site Name:** Saline Lowland

**Site ID:** R064XY030NE

**Major Land Resource Area (MLRA):** 64 – Mixed Sandy and Silty Tableland



### Physiographic Features

This site occurs on nearly level to gently sloping alluvial fans and floodplains.

**Landform:** alluvial fan, floodplain      **Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	2,900	4,000
<b>Slope (percent):</b>	0	3
<b>Water Table Depth (inches):</b>	48	>72
<b>Flooding:</b>		
<b>Frequency:</b>	None	Rare
<b>Duration:</b>	None	Very brief
<b>Ponding:</b>		
<b>Depth (inches):</b>	None	None
<b>Frequency:</b>	None	None
<b>Duration:</b>	None	None
<b>Runoff Class:</b>	Low	Very high

### Climatic Features

MLRA 64 is considered to have a continental climate – cold winters and hot summers, low humidity, light rainfall, and much sunshine. Extremes in temperature may also abound. The climate is the result of this MLRA's location near the geographic center of North America. There are few natural barriers on the northern Great Plains and air masses move freely across the plains and account for rapid changes in temperature.

Annual precipitation ranges from 14 to 20 inches per year. The normal average annual temperature is about 47°F. January is the coldest month with average temperatures ranging from about 21°F (Wood, South Dakota (SD)), to about 25°F (Hemingford, Nebraska (NE)). July is the warmest month with temperatures averaging from about 70°F (Keeline 3 W, Wyoming (WY)), to about 76°F (Wood, SD). The range of normal average monthly temperatures between the coldest and warmest months is about 55°F. This large annual range attests to the continental nature of this area's climate. Hourly winds average about 11 miles per hour (mph) annually, ranging from about 13 mph during the spring to about 10 mph during the summer. Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 50 mph.

Growth of cool-season plants begins in early to mid-March, slowing or ceasing in late June. Warm-season plants begin growth about mid-May and continue to early or mid-September. Greenup of cool-season plants may occur in September and October when adequate soil moisture is present.

	<u>Minimum</u>	<u>Maximum</u>
Frost-free period (days):	138	143
Freeze-free period (days):	161	163
Mean Annual Precipitation (inches):	14	20

**Average Monthly Precipitation (inches) and Temperature (°F):**

	Precip. Min.	Precip. Max	Temp. Min.	Temp. Max.
January	0.42	0.52	9.0	35.8
February	0.48	0.61	14.6	40.7
March	0.90	1.22	21.0	47.5
April	1.83	2.15	28.9	61.3
May	2.22	3.38	38.3	72.2
June	2.05	3.27	47.3	82.1
July	1.63	2.73	53.9	90.1
August	1.09	1.96	52.3	89.3
September	1.09	1.58	42.4	79.5
October	0.80	1.38	32.6	66.6
November	0.56	0.65	20.4	49.0
December	0.42	0.50	13.4	38.4

Climate Stations		Period	
Station ID	Location or Name	From	To
NE3755	Hemingford, NE	1964	1999
WY5085	Keeline 3 W, WY	1953	1986
SD9442	Wood, SD	1948	1999

For local climate stations that may be more representative, refer to <http://www.wcc.nrcs.usda.gov>.

**Riparian and Wetland Features**

Wetland Description	<u>System</u>	<u>Subsystem</u>	<u>Class</u>	<u>Subclass</u>
Cowardin, et. al., 1979	Palustrine	N/A	Emergent Wetland	Persistent

**Representative Soil Features**

The soils of this site are very deep moderately well to well-drained soils that formed in alluvium. Surface layers vary from three to six inches thick. These soils have moderately slow to very slow permeability and are moderately to strongly saline and/or alkaline. Higher soluble salt concentrations may be found in the subsoil. The surface layer will be highly variable and vary from 2 to 18 inches in thickness. The surface texture ranges from loamy fine sand to silty clay loam. A fluctuating water table occurs in these areas within four feet of the surface. These areas are subject to occasional overflow. This site should show slight to no evidence of rills, wind scoured areas, or pedestalled plants. Water flow paths are broken, irregular in appearance, or discontinuous with numerous debris dams or vegetative barriers. The soil surface is stable and intact.

More information can be found in the various soil survey reports. Contact the local United States Department of Agriculture (USDA) Service Center for soil survey reports that include more detail specific to your location.

Parent Material Kind: alluvium  
Parent Material Origin: siltstone, sandstone, shale  
Surface Texture: silty clay loam, loam, silt loam, loamy fine sand  
Surface Texture Modifier: none  
Subsurface Texture Group: loamy  
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:	moderately well	well
Permeability Class:	very slow	moderately slow
Depth (inches):	80	80
Electrical Conductivity (mmhos/cm)*:	4	16
Sodium Absorption Ratio*:	0	50
Soil Reaction (1:1 Water)*:	6.1	9.6
Soil Reaction (0.1M CaCl <sub>2</sub> )*:	NA	NA
Available Water Capacity (inches)*:	5	8
Calcium Carbonate Equivalent (percent)*:	0	15

\*These attributes represent from 0-40 inches or to the first restrictive layer.

## Plant Communities

### Ecological Dynamics of the Site

This site developed under northern Great Plains climatic conditions, light to severe grazing by bison and other large herbivores, sporadic natural or man-caused wildfire (often of light intensities), and other biotic and abiotic factors that typically influence soil/site development. Changes will occur in the plant communities due to short-term weather variations, impacts of native and/or exotic plant and animal species, and management actions. While the following plant community descriptions describe more typical transitions between communities that will occur, severe disturbances, such as periods of well below average precipitation, can cause significant shifts in plant communities and/or species composition.

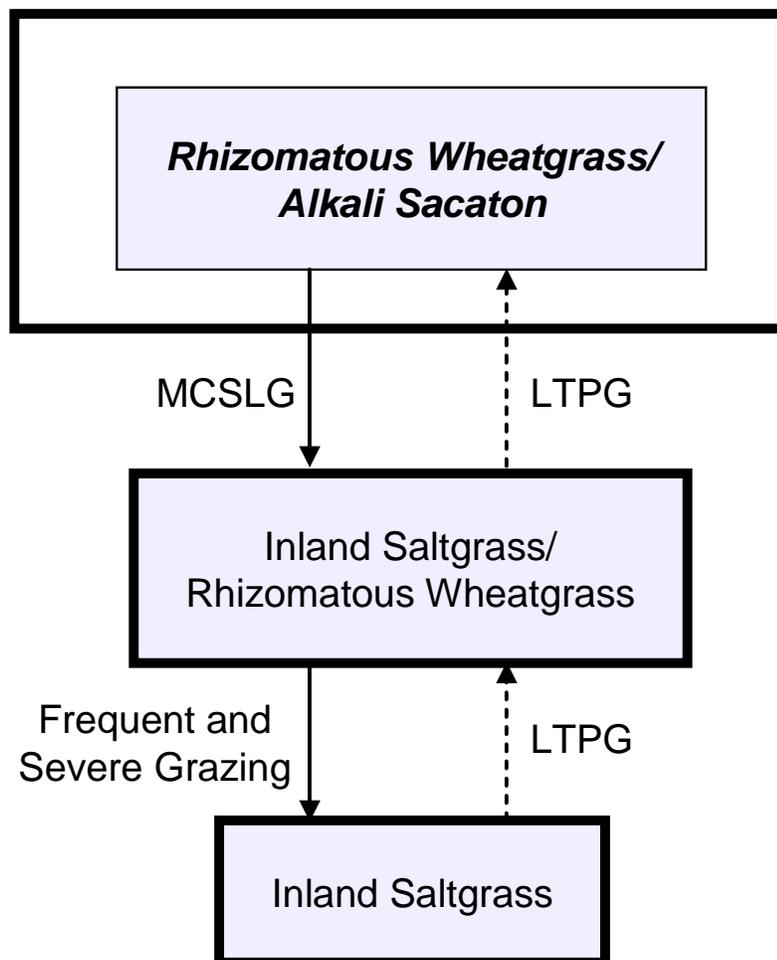
Shrubs such as greasewood and rubber rabbitbrush will occur in higher amounts on the western portions of where this site occurs.

Continuous season-long grazing (during the typical growing season of May through October) and/or repeated seasonal grazing (e.g., every spring, every summer) without adequate recovery periods following each grazing occurrence causes this site to depart from the Rhizomatous Wheatgrass/Alkali Sacaton Plant Community. Species such as inland saltgrass and foxtail barley increase and annual species may invade the site. Grasses such as alkali sacaton, rhizomatous wheatgrasses, and Nuttall's alkaligrass will decrease in frequency and production. The high salt content of the soils greatly influences the plant species present. Plant vigor can vary on a year-to-year basis in relation to current precipitation amounts which influences the translocation of salts in the soil profile. Typically, only salt tolerant plants are found on this site.

Interpretations are primarily based on the Rhizomatous Wheatgrass/Alkali Sacaton Plant Community. It has been determined by study of rangeland relic areas, areas protected from excessive disturbance, and areas under long-term rotational grazing regimes. Trends in plant community dynamics ranging from heavily grazed to lightly grazed areas, seasonal use pastures, and historical accounts also have been used. Plant communities, states, transitional pathways, and thresholds have been determined through similar studies and experience.

The following is a diagram that illustrates the common plant communities that can occur on the site and the transition pathways between communities. The ecological processes will be discussed in more detail in the plant community descriptions following the diagram.

### Plant Communities and Transitional Pathways



**Frequent and Severe Grazing** - Frequent and severe utilization of the cool-season mid grasses during the growing season; **LTPG** - Long-term prescribed grazing; **MCSLG** - Moderate, continuous season-long grazing (moderate levels of grazing a unit for an entire growing season); **PG** - Prescribed grazing (planned, controlled harvest of vegetation with grazing or browsing animals – see FOTG, Section IV, 528).

### Plant Community Composition and Group Annual Production

COMMON/GROUP NAME	SYMBOL	Rhizomatous Wheatgrass/ Alkali Sacaton			Inland Saltgrass/ Rhizomatous Wheatgrass			Inland Saltgrass		
		Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp
<b>GRASSES &amp; GRASS-LIKES</b>										
<b>RHIZOMATOUS WHEATGRASSES</b>										
western wheatgrass	PASM	1	560 - 1120	20 - 40	1	270 - 540	15 - 30	1	12 - 120	1 - 10
thickspike wheatgrass	ELLAL	1	560 - 1120	20 - 40	1	270 - 540	15 - 30	1	12 - 120	1 - 10
<b>CORDGRASS</b>										
alkali cordgrass	SPGR	2	280 - 840	10 - 30	2	36 - 180	2 - 10	2	0 - 36	0 - 3
prairie cordgrass	SPPE	2	280 - 840	10 - 30	2	36 - 180	2 - 10	2	0 - 36	0 - 3
<b>SACATON</b>										
alkali sacaton	SPAI	3	280 - 700	10 - 25	3	0 - 180	0 - 10	3		
<b>OTHER NATIVE</b>										
alkali bluegrass	POJU	4	56 - 140	2 - 5	4	0 - 54	0 - 3	4	480 - 960	40 - 80
Nuttall's alkaligrass	PUNU2	4	280 - 560	10 - 20	4	0 - 90	0 - 5			
slender wheatgrass	ELTRT	4	0 - 140	0 - 5	4	0 - 36	0 - 2			
bottlebrush squirreltail	ELEL5	4	0 - 140	0 - 5	4	0 - 90	0 - 5	4	0 - 60	0 - 5
inland saltgrass	DISP	4	140 - 420	5 - 15	4	270 - 540	15 - 30	4	360 - 840	30 - 70
sedge	CAREX	4	28 - 140	1 - 5	4	90 - 180	5 - 10	4	60 - 180	5 - 15
rush	JUNCU	4	0 - 140	0 - 5	4	18 - 90	1 - 5	4	12 - 60	1 - 5
spikerush	ELEOC	4	0 - 140	0 - 5	4	18 - 90	1 - 5	4	12 - 60	1 - 5
bulrush	SCHOE6	4	0 - 140	0 - 5	4	18 - 90	1 - 5	4	12 - 60	1 - 5
foxtail barley	HOJU	4	0 - 140	0 - 5	4	36 - 180	2 - 10	4	60 - 240	5 - 20
other perennial grasses	2GP	4	0 - 140	0 - 5	4	0 - 54	0 - 3	4	0 - 24	0 - 2
<b>NON-NATIVE GRASSES</b>										
bluegrass	POA				5	0 - 90	0 - 5	5	0 - 120	0 - 10
cheatgrass	BRTE				5	18 - 54	1 - 3	5	12 - 60	1 - 5
<b>FORBS</b>										
American licorice	GLLE3	6	0 - 140	0 - 5	6	18 - 90	1 - 5	6	12 - 60	1 - 5
annual marshelder	IVAN2	6	0 - 140	0 - 5	6	18 - 90	1 - 5	6	12 - 60	1 - 5
aster	ASTER	6	0 - 140	0 - 5	6	18 - 90	1 - 5	6	12 - 60	1 - 5
cocklebur	XANTH2				6	0 - 90	0 - 5	6	0 - 60	0 - 5
curlycup gumweed	GRSQ				6	18 - 90	1 - 5	6	12 - 60	1 - 5
giant sumpweed	IVXA	6	0 - 140	0 - 5	6	0 - 90	0 - 5	6	0 - 60	0 - 5
lambquarters	CHAL7				6	0 - 54	0 - 3	6	0 - 36	0 - 3
povertyweed	IVAX	6	0 - 140	0 - 5	6	18 - 90	1 - 5	6	12 - 60	1 - 5
Pursh seepweed	SUCA2	6	0 - 140	0 - 5	6	18 - 90	1 - 5	6	12 - 60	1 - 5
red saltwort	SARU	6	0 - 140	0 - 5	6	0 - 90	0 - 5	6	0 - 60	0 - 5
other perennial forbs	2FP	6	0 - 140	0 - 5	6	0 - 90	0 - 5	6	0 - 60	0 - 5
other annual forbs	2FA				6	0 - 90	0 - 5	6	0 - 60	0 - 5
<b>SHRUBS</b>										
fourwing saltbush	ATCA2	7	0 - 280	0 - 10	7	0 - 54	0 - 3			
Gardner's saltbush	ATGA	7	0 - 280	0 - 10	7	0 - 54	0 - 3			
rubber rabbitbrush	ERNA10	7	0 - 140	0 - 5	7	18 - 180	1 - 10	7	12 - 120	1 - 10
other shrubs	2SHRUB	7	0 - 140	0 - 5	7	0 - 90	0 - 5	7	0 - 36	0 - 3
<b>TREES</b>										
plains cottonwood	PODEM	8	0 - 140	0 - 5	8	0 - 54	0 - 3	8	0 - 12	0 - 1
<b>Annual Production lbs./acre</b>										
		LOW	RV	HIGH	LOW	RV	HIGH	LOW	RV	HIGH
<b>GRASSES &amp; GRASS-LIKES</b>		1930	2170	2355	900	1494	2060	735	1008	1275
<b>FORBS</b>		135	210	300	85	180	300	55	120	185
<b>SHRUBS</b>		135	350	600	15	99	185	10	66	125
<b>TREES</b>		0	70	145	0	27	55	0	6	15
<b>TOTAL</b>		2200	2800	3400	1000	1800	2600	800	1200	1600

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. RV = Relative value. Refer to PLANTS database for scientific names and codes: <http://plants.usda.gov>

### Plant Community and Vegetation State Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility but they 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” (DPCs). According to the USDA Natural Resources Conservation Service (NRCS) National Range and Pasture Handbook, DPCs 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 Wheatgrass/Alkali Sacaton Plant Community**

Interpretations are based primarily on the Rhizomatous Wheatgrass/Alkali Sacaton Plant Community (this is also considered to be climax). Potential vegetation is about 80 percent grasses or grass-like plants, 10 percent forbs, and 10 percent woody plants. Saline tolerant grasses dominate the plant community. The major grasses include rhizomatous wheatgrasses, alkali sacaton, Nuttall's alkaligrass, alkali and/or prairie cordgrass, and inland saltgrass. Woody plants are greasewood, fourwing saltbush, rubber rabbitbrush, cottonwood, and Gardner's saltbush. Shrubs such as greasewood and rubber rabbitbrush will occur in higher amounts on the western portions of where this site occurs.

This plant community is well adapted to the Northern Great Plains climatic conditions. Individual species can vary greatly in production depending on growing conditions (timing and amount of precipitation and temperature). Community dynamics, nutrient cycle, water cycle, and energy flow are functioning at the sites potential. Plant litter is properly distributed with some movement offsite and natural plant mortality is low. The diversity in plant species allows for high drought tolerance.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during an average year:

Growth curve number: NE6408

Growth curve name: Pine Ridge/Badlands, lowland cool-season/warm-season codominant.

Growth curve description: Cool-season, warm-season codominant, lowland.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	12	20	25	19	11	5	3	0	0

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/Rhizomatous Wheatgrass Plant Community*.

**Inland Saltgrass/Rhizomatous Wheatgrass Plant Community**

This plant community occurs as a result of moderate, continuous season-long grazing. Grasses comprise 85-90 percent, forbs 0-10, and shrubs 0-5. Dominant grasses include inland saltgrass, western wheatgrass, alkali, and/or prairie cordgrass. Other secondary grasses and grass-like plants include blue grama and sedges. Forbs such as asters and saltwort may occur, and nonnative forbs such as cocklebur may invade this plant community. When compared to the Rhizomatous Wheatgrass/Alkali Sacaton Plant Community, saltgrass has increased. Alkali sacaton, alkaligrass, and woody vegetation have been greatly diminished.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during an average year:

Growth curve number: NE6409

Growth curve name: Pine Ridge/Badlands, warm-season dominant, cool-season subdominant.

Growth curve description: Warm-season dominant, cool-season subdominant, lowland.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	8	18	27	23	12	6	3	0	0

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

- Prescribed grazing may convert this plant community to the *Rhizomatous Wheatgrass/Alkali Sacaton Plant Community*.
- Frequent and severe grazing will convert this plant community to the *Inland Saltgrass Plant Community*.

### Inland Saltgrass Plant Community

This plant community is the result of long-term improper grazing use. Inland saltgrass dominates this plant community. Other grasses and grass-likes that occur include alkali bluegrass, foxtail barley, and sedges. Forbs common in this plant community are Pursh seepweed, red saltwort, and povertyweed. Bare ground has increased and production has decreased.

The soils of this plant community are not well protected. The biotic integrity is compromised by introduced species, loss of the dominant climax species, and bare ground. Excessive runoff may occur.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during an average year:

Growth curve number: NE6409

Growth curve name: Pine Ridge/Badlands, warm-season dominant, cool-season subdominant.

Growth curve description: Warm-season dominant, cool-season subdominant, lowland.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	8	18	27	23	12	6	3	0	0

Transitional pathways leading to other plant communities are as follows:

- Long-term prescribed grazing may eventually lead this plant community to the *Inland Saltgrass/Rhizomatous Wheatgrass Plant Community*.

## Ecological Site Interpretations

### Animal Community – Wildlife Interpretations

MLRA 64 lies within the drier portion of northern mixed-grass prairie ecosystem where sagebrush steppes to the west yield to grassland steppes to the east. Prior to European settlement, this area consisted of diverse grass/shrub land habitats interspersed with varying densities of depressional, instream wetlands, and woody riparian corridors. These habitats provided critical life cycle components for many of its users. Many species of grassland birds, small mammals, reptiles, amphibians, and herds of roaming bison, elk, and pronghorn were among the inhabitants adapted to this semi-arid region. Roaming herbivores, as well as, several small mammal and insect species, were the primary consumers linking the grassland resources to predators such as the wolf, mountain lion, and grizzly bear, as well as, smaller carnivores such as the coyote, bobcat, fox, and raptors. The prairie dog was once abundant; however, the species remains a keystone species within its range. The black-footed ferret, burrowing owl, ferruginous hawk, mountain plover, and swift fox were associated with prairie dog complexes.

Historically, the northern mixed-grass prairie was a disturbance-driven ecosystem with fire, herbivory, and climate functioning as the primary disturbance factors either singly or in combination. Following European settlement, livestock grazing, cropland conversion, elimination of fire, energy development, and other anthropogenic factors influenced species composition and abundance. Introduced and

invasive species further impacted plant and animal communities. The bison was a historical keystone species but have been extirpated as a free-ranging herbivore. The loss of the bison and reduction of prairie dog populations and fire as ecological drivers greatly influenced the character of the remaining native plant communities and altered wildlife habitats. Human development has reduced habitat quality for area-sensitive species.

Within MLRA 64, the Saline Lowland Ecological Site (ES) provides upland grassland cover with an associated forb, shrub, and tree component. It was typically part of a an expansive grassland landscape that included combinations of Badlands, Thin Breaks, Clayey, Claypan, Dense Clay, Loamy, Saline, Sandy, Shallow, Overflow, Subirrigated, and Terrace ESs.

This site may have sufficient hydrology to support hydrophytic vegetation and wildlife species associated with saturated saline soil conditions. Due to high salinity concentrations, both plant and wildlife species diversity is limited.

**Rhizomatous Wheatgrass/Alkali Sacaton (HCPC), Inland Saltgrass/Rhizomatous Wheatgrass, and Inland Saltgrass:** The predominance of saline tolerant hydrophytic vegetation, including shrubs, does not favor any particular wildlife group. However, the site may receive limited shorebird use. This plant community provides habitat for limited invertebrate populations. Herptile use is either extremely limited or nonexistent. Raptors such as northern harrier, short-eared owl, Swainson's hawk, and American kestrel will use this site. Prey populations are limited to small mammals such as Hayden's/masked shrew and spotted ground squirrel, and invertebrates.

### Animal Preferences (Quarterly – 1,2,3,4†)

Common Name	Cattle	Sheep	Horses	Deer	Antelope	Bison	Elk
<b>Grasses &amp; Grass-likes</b>							
western wheatgrass	U P D U	N D N N	U P D U	N D N N	N D N N	U P D U	U P D U
thickspike wheatgrass	U D D U	N D N N	U D D U	N D N N	N D N N	U D D U	U D D U
alkali cordgrass	U D D U	N U N N	U D D U	N U N N	N U N N	U D D U	U D D U
prairie cordgrass	U D D U	N N N N	U D D U	N N N N	N N N N	U D D U	U D D U
alkali sacaton	U D D U	N U N N	U D D U	N U N N	N U N N	U D D U	U D D U
alkali bluegrass	U D U D	D P U D	U D U D	U P N D	U P N D	U D U D	U D U D
Nuttall's alkaligrass	U P D D	P P P P	U P D D	P P P P	P P P P	U P D D	U P D D
slender wheatgrass	U P U U	N D U N	U P U U	N D U N	N D U N	U P U U	U P U U
bottlebrush squirreltail	U D U U	N D U N	U D U U	N D U N	N D U N	U D U U	U D U U
inland saltgrass	N U U N	N N N N	N U U N	N N N N	N N N N	N U U N	N U U N
sedge	U D U D	U P N D	U D U D	U D U D	U D U D	U D U D	U D U D
rush	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N
spikerush	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
bulrush	U U U U	N N N N	U U U U	N N N N	N N N N	U U U U	U U U U
foxtail barley	U D N N	N P N N	U D N N	N P N N	N P N N	U D N N	U D N N
<b>Forbs</b>							
American licorice	U U D U	N U U N	U U D U	N U U N	N U U N	U U D U	N U U N
annual marshelder	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
aster	U U D U	U U D U	U U D U	U U D U	U U D U	U U D U	U U D U
giant sumpweed	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
povertyweed	U U U U	N N N N	U U U U	N N N N	N N N N	U U U U	N N N N
Pursh seepweed	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
red saltwort	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
<b>Shrubs</b>							
fourwing saltbush	P D D P	P D D P	P D D P	P D D P	P D D P	P D D P	P D D P
Gardner's saltbush	P D D P	P D D P	P D D P	P D D P	P D D P	P D D P	P D D P
rubber rabbitbrush	N N N N	D U U D	N N N N	D U U D	U D D U	N N N N	D U U U
<b>Trees</b>							
plains cottonwood	D U U D	D U U D	D U U D	D U D D	D U U D	D U U D	D U U D

N = not used; U = undesirable; D = desirable; P = preferred; T = toxic

† Quarters: 1 – Jan., Feb., Mar.; 2 – Apr., May, Jun.; 3 – Jul., Aug., Sep.; 4 – Oct., Nov., Dec.

### Animal Community – Grazing Interpretations

The following table lists annual, suggested initial stocking rates with average growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of conservation planning. Often, the current plant composition does not entirely match any particular plant community (as described in this ES description). Because of this, a resource inventory is necessary to document plant composition and production. More accurate carrying capacity estimates should eventually be calculated using the following stocking rate information along with animal preference data and actual stocking records, particularly when grazers other than cattle are involved. With consultation of the land manager, more intensive grazing management may result in improved harvest efficiencies and increased carrying capacity.

Plant Community	Average Annual Production (lbs./acre, air-dry)	Stocking Rate* (AUM/acre)
Rhizomatous Wheatgrass/Alkali Sacaton	2,000	0.60-0.65
Inland Saltgrass/Rhizomatous Wheatgrass	1,100	0.30-0.35
Inland Saltgrass	900	0.25-0.30

\*Based on 790 lbs./acre (air-dry weight) per Animal Unit Month (AUM) and on 25 percent harvest efficiency (refer to USDA NRCS, National Range and Pasture Handbook).

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage. During the dormant period, the forage for livestock will likely be lacking protein to meet livestock requirements and added protein will allow ruminants to better utilize the energy stored in grazed plant materials. A forage quality test (either directly or through fecal sampling) should be used to determine the level of supplementation needed.

## 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 low to very low. Runoff potential for this site varies from moderate to high depending on soil hydrologic group, slope, and ground cover. In many cases, areas with greater than 75 percent 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 percent have the greatest potential to have reduced infiltration and higher runoff (refer to Section 4, NRCS National Engineering Handbook for runoff quantities and hydrologic curves).

## Recreational Uses

This site provides hunting opportunities for upland game species. The wide varieties 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

Seed harvest of native plant species can provide additional income on this site.

## Supporting Information

### Associated Sites

(064XY045NE) – Dense Clay  
(064XY046NE) – Thin Claypan

(064XY025NE) – Saline Subirrigated

### Similar Sites

(064XY025NE) – Saline Subirrigated

## Inventory Data References

Information presented here has been derived from NRCS clipping data and other inventory data. Field observations from range-trained personnel were also used. Those involved in developing this site include: Stan Boltz, Range Management Specialist (RMS), NRCS; Jill Epley, RMS, NRCS; Rick

**Site Type: Rangeland**  
**MLRA: 64 – Mixed Sandy and Silty Tableland**

**Saline Lowland**  
**R064XY030NE**

Peterson, RMS, NRCS; David Steffen, RMS, NRCS; Jeff Vander Wilt; RMS, NRCS; and Phil Young, Soil Scientist, NRCS.

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417				

## State Correlation

This site has been correlated with NE, SD, and WY in MLRA 64.

## Field Offices/Counties

Alliance, NE	Box Butte	Kadoka, SD	Jackson	Rushville, NE	Sheridan
Bridgeport, NE	Morrill	Lusk, WY	Niobrara	Scottsbluff, NE	Scottsbluff
Chadron, NE	Dawes/Sioux	Martin, SD	Bennett/Shannon	Torrington, WY	Goshen
Custer, SD	Custer	Pine Ridge, SD	Pine Ridge IR	Valentine, NE	Cherry
Douglas, WY	Converse	Rapid City, SD	Pennington	Wall, SD	East Pennington
Hot Springs, SD	Fall River	Rosebud, SD	Rosebud IR	Wheatland, WY	Platte
White River, SD	Mellette/Todd				

## Relationship to Other Established Classifications

Level IV Ecoregions of the Conterminous United States: 25a – Pine Ridge Escarpment, 43h – White River Badlands, and 43i – Keya Paha Tablelands.

## Other References

High Plains Regional Climate Center, University of Nebraska, 830728 Chase Hall, Lincoln, NE 68583-0728. (<http://www.hprcc.unl.edu/>)

USDA, NRCS. National Water and Climate Center, 101 SW Main, Suite 1600, Portland, OR 97204-3224. (<http://www.wcc.nrcs.usda.gov>)

USDA, NRCS. National Range and Pasture Handbook, September 1997.

USDA, NRCS. National Soil Information System, Information Technology Center, 2150 Centre Avenue, Building A, Fort Collins, CO 80526. (<http://soils.usda.gov/technical/nasis/>)

USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

USDA, NRCS, Various Published Soil Surveys.

## Site Description Approval

\_\_\_\_\_  
NE, State Range Management Specialist

\_\_\_\_\_  
Date

\_\_\_\_\_  
SD, State Range Management Specialist

\_\_\_\_\_  
Date

\_\_\_\_\_  
WY, State Range Management Specialist

\_\_\_\_\_  
Date