

United States Department of Agriculture Natural Resources Conservation Service

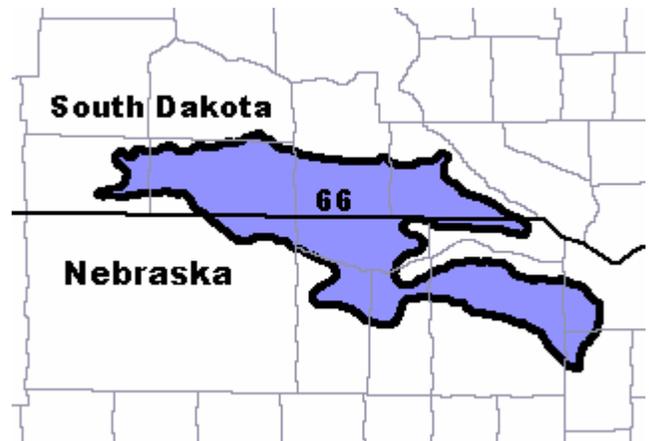
Ecological Site Description

Site Type: Rangeland

Site Name: Saline Subirrigated

Site ID: R066XY047NE

Major Land Resource Area (MLRA):
66 – Dakota – Nebraska Eroded Tableland



Physiographic Features

Landform: Alluvial flat
N/A

Aspect:

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	1900	3000
Slope (percent):	0	2
Water Table Depth (inches):	18	36
Flooding:		
Frequency:	None	Occasional
Duration:	None	Brief
Ponding:		
Depth (inches):	None	None
Frequency:	None	None
Duration:	None	None
Runoff Class:	Negligible	Medium

Climatic Features

MLRA 66 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 the winds move freely across the plains and account for rapid changes in temperature.

Annual precipitation ranges from 18 to 25 inches per year. The normal average annual temperature is about 48°F. January is the coldest month with average temperatures ranging from about 19°F (Bonesteel, South Dakota (SD)), to about 23°F (Ainsworth, Nebraska (NE)). July is the warmest month with temperatures averaging from about 73°F (Harrington, SD), to about 75°F (Gregory, SD). The range of normal average monthly temperatures between the coldest and warmest months is about 54°F. This large annual range attests to the continental nature of this area's climate. Hourly winds average about 10 miles per hour annually, ranging from about 11 miles per hour during the spring to about 9 miles per hour 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 miles per hour.

Site Type: Rangeland

Saline Subirrigated

MLRA: 66 – Dakota - Nebraska Eroded Tableland

R066XY047NE

Growth of native cool-season plants begins mid to late March and continues to late June. Native warm-season plants begin growth in early May and continue to late August. Green up 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):	127	154
Freeze-free period (days):	144	173
Mean Annual Precipitation (inches):	18	25

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

	Precip. Min.	Precip. Max	Temp. Min.	Temp. Max.
January	0.28	0.42	8.2	33.6
February	0.48	0.69	13.5	38.9
March	0.92	1.58	21.3	46.9
April	1.94	3.03	31.7	61.2
May	3.08	4.20	42.8	72.5
June	3.10	3.74	52.6	82.2
July	2.86	3.25	58.5	88.3
August	2.33	2.68	56.2	86.8
September	1.54	2.71	45.9	77.3
October	1.03	1.79	33.7	65.0
November	0.55	0.94	20.8	47.6
December	0.32	0.45	11.2	37.1

Climate Stations		Period	
Station ID	Location or Name	From	To
NE0050	Ainsworth	1948	2003
SD0778	Bonesteel	1956	2003
NE1365	Butte	1948	2003
SD3574	Harrington	1960	2003
NE8760	Valentine WSO AP	1948	2003

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

Influencing Water Features

This ecological site has a combination of physical and hydrological features that: 1) provide season-long ground water within 3.5 feet of the surface, 2) allows relatively free movement of water and air in the upper part of the soil, and 3) are rarely, or occasionally flooded.

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

Stream Type: None (Rosgen System)

Representative Soil Features

The features common to all soils in this site are the fine sand and loamy fine sand textured surface soils and slopes of zero to two percent. The soils in this site are somewhat poorly drained and formed in eolian sand and/or sandy alluvium. The surface layer is 0.5 to 10 inches thick. The texture of the subsurface ranges from loamy fine sand to sand. Finer textured layers may occur in the lower parts of some profiles. Runoff as evidenced by patterns

Site Type: Rangeland

Saline Subirrigated

MLRA: 66 – Dakota - Nebraska Eroded Tableland

R066XY047NE

of rills, gullies, or other water flow is negligible due to the low slope gradient and high intake rate of these soils. Some pedestalling of plants occurs, but it is not very evident on casual observation and occurs on less than five percent of the plants.

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: mixed

Surface Texture: fine sand, loamy fine sand, sand

Surface Texture Modifier: none

Subsurface Texture Group: sandy

Surface Fragments $\leq 3''$ (% Cover): 0

Surface Fragments $> 3''$ (%Cover): 0

Subsurface Fragments $\leq 3''$ (% Volume): 0-5

Subsurface Fragments $> 3''$ (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	somewhat poorly	moderately well
Permeability Class:	moderately slow	rapid
Depth (inches):	> 80	> 80
Electrical Conductivity (mmhos/cm)*:	0	20
Sodium Absorption Ratio*:	6	105
Soil Reaction (1:1 Water)*:	8.5	9.9
Soil Reaction (0.1M CaCl₂)*:	NA	NA
Available Water Capacity (inches)*:	3	6
Calcium Carbonate Equivalent (percent)*:	0	15

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

Plant Communities

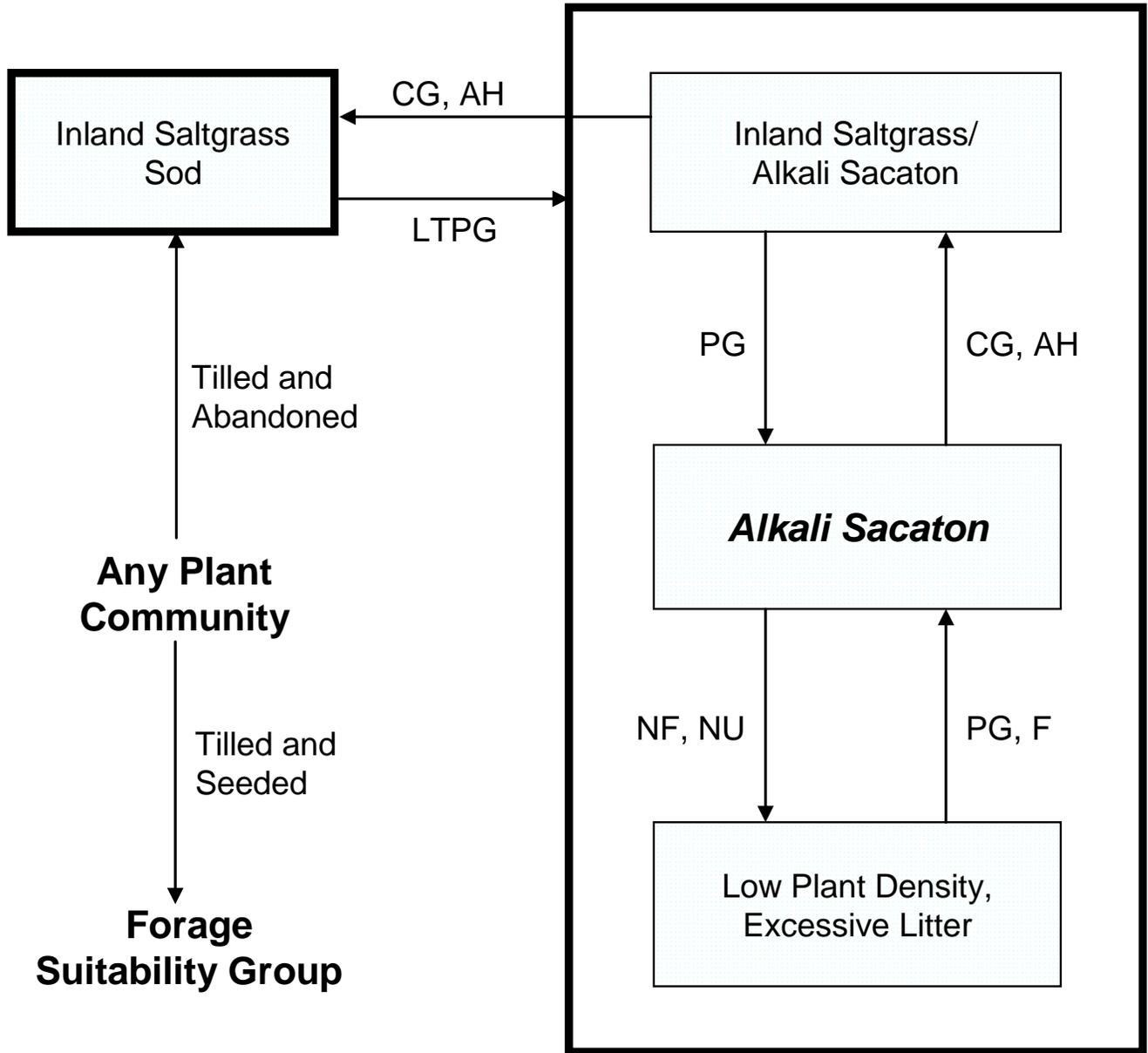
Ecological Dynamics of the Site:

As this site deteriorates, species such as inland saltgrass and foxtail barley increase. Grasses such as alkali sacaton, alkali cordgrass, western wheatgrass, and slender wheatgrass will decrease in frequency and production.

Interpretations are primarily based on the 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. Subclimax 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



AH – Annual haying; **CG** – Continuous grazing without adequate recovery periods; **F** – Fire; **LTPG** – Long-term prescribed grazing (> 40 years); **NF** – No fire; **NU** – Non-use; **PG** – Prescribed grazing with adequate recovery periods.

Plant Community Composition and Group Annual Production

COMMON/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Alkali Sacaton		
			Group	lbs./acre	% Comp
GRASSES				2240 - 2660	80 - 95
alkali sacaton	Sporobolus airoides	SPAI	1	560 - 1120	20 - 40
inland saltgrass	Distichlis spicata	DISP	2	280 - 560	10 - 20
western wheatgrass	Pascopyrum smithii	PASM	3	280 - 560	10 - 20
WARM-SEASON GRASSES			4	140 - 700	5 - 25
switchgrass	Panicum virgatum	PAVI2	4	0 - 420	0 - 15
sand dropseed	Sporobolus cryptandrus	SPCR	4	0 - 280	0 - 10
alkali cordgrass	Spartina gracilis	SPGR	4	0 - 280	0 - 10
alkali muhly	Muhlenbergia asperifolia	MUAS	4	0 - 140	0 - 5
blue grama	Bouteloua gracilis	BOGR2	4	0 - 140	0 - 5
little bluestem	Schizachyrium scoparium	SCSC	4	0 - 140	0 - 5
OTHER NATIVE GRASSES			5	280 - 560	10 - 20
plains bluegrass	Poa arida	POAR3	5	140 - 280	5 - 10
slender wheatgrass	Elymus trachycaulus	ELTR7	5	140 - 280	5 - 10
foxtail barley	Hordeum jubatum	HOJU	5	0 - 140	0 - 5
other perennial grasses		2GP	5	0 - 140	0 - 5
GRASS-LIKES			7	140 - 420	5 - 15
sedge	Carex spp.	CAREX	7	0 - 280	0 - 10
Baltic rush	Juncus balticus	JUBA	7	0 - 140	0 - 5
rush	Juncus spp.	JUNCU	7	0 - 140	0 - 5
spikerush	Eleocharis spp.	ELEOC	7	0 - 140	0 - 5
bulrush	Schoenoplectus spp.	SCHOE6	7	0 - 140	0 - 5
other grass-likes		2GL	7	0 - 140	0 - 5
FORBS			8	0 - 140	0 - 5
arrowgrass	Triglochin palustre	TRPA6	8	0 - 28	0 - 1
cudweed sagewort	Artemisia ludoviciana	ARLU	8	0 - 28	0 - 1
heath aster	Symphyotrichum ericoides	SYER	8	0 - 28	0 - 1
milkvetch	Astragalus spp.	ASTRA	8	0 - 28	0 - 1
prairie gentian	Eustoma exaltatum ssp. russellianum	EUEXR	8	0 - 28	0 - 1
Pursh seepweed	Suaeda calceoliformis	SUCA2	8	0 - 28	0 - 1
scouringrush	Equisetum hyemale	EQHY	8	0 - 28	0 - 1
western ragweed	Ambrosia psilostachya	AMPS	8	0 - 28	0 - 1
other perennial forbs		2FP	8	0 - 56	0 - 2

Annual Production lbs./acre	LOW	RV	HIGH
GRASSES	1965	2450	2905
GRASS-LIKES	135	280	450
FORBS	0	70	145
TOTAL	2100	2800	3500

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 = Representative value.

Plant Community Composition and Group Annual Production

COMMON/GROUP NAME	SYMBOL	Alkali Sacaton			Inland Saltgrass/ Alkali Sacaton			Inland Saltgrass Sod			Low Plant Density, Excessive Litter		
		Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp
GRASSES			2240 - 2660	80 - 95		1360 - 1615	80 - 95		800 - 950	80 - 95		1520 - 1805	80 - 95
alkali sacaton	SPAI	1	560 - 1120	20 - 40	1	340 - 680	20 - 40	1	0 - 100	0 - 10	1	285 - 570	15 - 30
inland saltgrass	DISP	2	280 - 560	10 - 20	2	510 - 680	30 - 40	2	600 - 900	60 - 90	2	285 - 570	15 - 30
western wheatgrass	PASM	3	280 - 560	10 - 20	3	0 - 85	0 - 5	3			3	190 - 380	10 - 20
WARM-SEASON GRASSES		4	140 - 700	5 - 25	4	34 - 170	2 - 10	4	0 - 50	0 - 5	4	190 - 475	10 - 25
switchgrass	PAVI2	4	0 - 420	0 - 15	4	0 - 34	0 - 2				4	95 - 285	5 - 15
sand dropseed	SPCR	4	0 - 280	0 - 10	4	0 - 85	0 - 5	4	0 - 20	0 - 2	4	0 - 95	0 - 5
alkali cordgrass	SPGR	4	0 - 280	0 - 10	4	0 - 85	0 - 5				4	0 - 95	0 - 5
alkali muhly	MUAS	4	0 - 140	0 - 5	4	0 - 85	0 - 5	4	0 - 20	0 - 2	4	0 - 95	0 - 5
blue grama	BOGR2	4	0 - 140	0 - 5	4	0 - 34	0 - 2	4	0 - 20	0 - 2	4	0 - 38	0 - 2
little bluestem	SCSC	4	0 - 140	0 - 5	4	0 - 34	0 - 2				4	95 - 190	5 - 10
OTHER NATIVE GRASSES		5	280 - 560	10 - 20	5	85 - 255	5 - 15	5	50 - 150	5 - 15	5	285 - 475	15 - 25
plains bluegrass	POAR3	5	140 - 280	5 - 10	5	0 - 85	0 - 5	5	0 - 20	0 - 2	5	95 - 190	5 - 10
slender wheatgrass	ELTR7	5	140 - 280	5 - 10	5	0 - 85	0 - 5				5	190 - 285	10 - 15
foxtail barley	HOJU	5	0 - 140	0 - 5	5	85 - 170	5 - 10	5	50 - 150	5 - 15	5	0 - 95	0 - 5
other perennial grasses	2GP	5	0 - 140	0 - 5	5	0 - 34	0 - 2	5	0 - 20	0 - 2	5	0 - 38	0 - 2
NON-NATIVE GRASSES		6			6	0 - 85	0 - 5	6	0 - 20	0 - 2	6	0 - 38	0 - 2
Kentucky bluegrass	POPR				6	0 - 85	0 - 5	6	0 - 20	0 - 2	6	0 - 38	0 - 2
GRASS-LIKES		7	140 - 420	5 - 15	7	85 - 255	5 - 15	7	50 - 150	5 - 15	7	190 - 380	10 - 20
sedge	CAREX	7	0 - 280	0 - 10	7	0 - 170	0 - 10	7	0 - 50	0 - 5	7	95 - 285	5 - 15
Baltic rush	JUBA	7	0 - 140	0 - 5	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
rush	JUNCU	7	0 - 140	0 - 5	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
spikerush	ELEOC	7	0 - 140	0 - 5	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
bulrush	SCHOE6	7	0 - 140	0 - 5	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
other grass-likes	2GL	7	0 - 140	0 - 5	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 95	0 - 5
FORBS		8	0 - 140	0 - 5	8	0 - 85	0 - 5	8	0 - 50	0 - 5	8	0 - 95	0 - 5
arrowgrass	TRPA6	8	0 - 28	0 - 1	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
common dandelion	TAOF				8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
cudweed sagewort	ARLU	8	0 - 28	0 - 1	8	0 - 34	0 - 2	8	0 - 20	0 - 2	8	0 - 19	0 - 1
heath aster	SYER	8	0 - 28	0 - 1	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
milkvetch	ASTRA	8	0 - 28	0 - 1	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
prairie gentian	EUEXR	8	0 - 28	0 - 1	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
Pursh seepweed	SUCA2	8	0 - 28	0 - 1	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
scouringrush	EQHY	8	0 - 28	0 - 1	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
western ragweed	AMPS	8	0 - 28	0 - 1	8	0 - 34	0 - 2	8	0 - 20	0 - 2	8	0 - 19	0 - 1
other perennial forbs	2FP	8	0 - 56	0 - 2	8	0 - 34	0 - 2	8	0 - 20	0 - 2	8	0 - 38	0 - 2
Annual Production lbs./acre			LOW RV HIGH		LOW RV HIGH		LOW RV HIGH		LOW RV HIGH		LOW RV HIGH		LOW RV HIGH
GRASSES			1965 - 2450 - 2905		1220 - 1488 - 1735		755 - 875 - 990		1215 - 1568 - 1900				
GRASS-LIKES			135 - 280 - 450		80 - 170 - 275		45 - 100 - 155		185 - 285 - 400				
FORBS			0 - 70 - 145		0 - 43 - 90		0 - 25 - 55		0 - 48 - 100				
TOTAL			2100 - 2800 - 3500		1300 - 1700 - 2100		800 - 1000 - 1200		1400 - 1900 - 2400				

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 = Representative value.

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 are 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 (DPC).” According to the USDA Natural Resources Conservation Service (NRCS) National Range and Pasture Handbook, 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.

Interpretations are primarily based on the Alkali Sacaton Plant Community (this is also considered climax). This site developed with grazing by large herbivores and is well suited for grazing by domestic livestock. This plant community can be found on areas that are properly managed with grazing and/or prescribed burning, and sometimes on areas receiving occasional short periods of rest.

This plant community consists mainly of mid warm- and cool-season grasses. The principle dominant plants are alkali sacaton, inland saltgrass, and western wheatgrass. Grasses of secondary importance are alkali cordgrass, slender wheatgrass, little bluestem, and foxtail barley. Blue grasses, sedges, and spike rushes occur as an understory. Forbs such as heath aster, milkvetch, and prairie gentian are significant. This plant community is about 80 percent grasses, 15 percent grass-likes, and 5 percent forbs by air-dry weight.

This plant community is adapted to high salt content inherent of the soils. White crusts can occupy many areas of the soil surface due to seasonal fluctuations in the water table. This is a healthy and sustainable plant community in terms of soil stability, watershed function, and biological integrity.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6642

Growth curve name: Eroded Tableland, 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 and/or community pathways leading to other plant communities are as follows:

- Continuous grazing without adequate recovery periods following grazing events or annual haying will convert this plant community to the *Inland Saltgrass/Alkali Sacaton Plant Community*.
- Non-use and no fire will convert this plant community to the *Low Plant Density, Excessive Litter Plant Community*.

Inland Saltgrass, Alkali Sacaton Plant Community

This plant community developed with relatively short-term continuous grazing without periodic rest, or with annual haying. Plants resistant to removal are maintaining vigor. The potential vegetation is about 80 percent grasses, 15 percent grass-like plants, and 5 percent forbs. Inland saltgrass and alkali sacaton have increased in abundance. Most of the palatable plants such as western wheatgrass, slender wheatgrass, and alkali cordgrass are present but occur in lesser amounts.

The soil is stable; however, plant diversity has been reduced. The water cycle, nutrient cycle and energy flow are slightly reduced but continue to adequately function. This community indicates key management concerns. Proper grazing management techniques at this point will stabilize the community at or near the Alkali Sacaton Plant Community. Increased disturbance can easily move the community to a more degraded scenario.

Site Type: Rangeland

Saline Subirrigated

MLRA: 66 – Dakota - Nebraska Eroded Tableland

R066XY047NE

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6642

Growth curve name: Eroded Tableland, 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 and/or community pathways leading to other plant communities are as follows:

- Continuous grazing or annual haying with no recovery opportunity shifts this plant community to the *Inland Saltgrass Sod Plant Community*.
- Prescribed grazing with adequate recovery opportunity will restore this community back to the *Alkali Sacaton Plant Community*.

Low Plant Density, Excessive Litter Plant Community

This plant community occurs after an extended period of non-use by domestic livestock. Fire is uncommon or has been eliminated. Litter amounts have increased causing plant density to decrease. Typically, bunchgrasses (alkali sacaton) have developed dead centers and rhizomatous grasses (inland saltgrass) form small colonies because of a lack of tiller stimulation. Salt crusts and/or annual plant species such as kochia and Russian thistle commonly fill bare ground areas. Plant frequency and production have decreased. The potential vegetation is about 75 percent grasses, 20 percent grass-like plants, and 5 percent forbs.

Soil erosion is not a concern due to increased litter levels and landscape position.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6642

Growth curve name: Eroded Tableland, 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 and/or community pathways leading to other plant communities are as follows:

- Prescribed grazing or fire with adequate recovery opportunity or prescribed burning will shift this plant community towards the *Alkali Sacaton Plant Community*.

Inland Saltgrass Sod Plant Community

This plant community developed with further continuous grazing or areas that have been tilled and abandoned. Inland saltgrass dominates this plant community and has developed into a sod bound condition. Alkali sacaton has been greatly reduced. Slender and western wheatgrass are gone and have been replaced by increased amounts of foxtail barley. Plains pricklypear has increased. Forbs such as kochia and Russian thistle have also increased. The potential vegetation is about 80 percent grasses, 15 percent grass-like plants, and 5 percent forbs.

Site Type: Rangeland

Saline Subirrigated

MLRA: 66 – Dakota - Nebraska Eroded Tableland

R066XY047NE

The plant community lacks diversity. Evaporation has increased resulting in a higher salt content on the soil surface. Organic matter/carbon reserves are severely diminished.

It will take a long time to bring this plant community back to the Alkali Sacaton Plant Community with management alone. Renovation of this plant community would be very costly due to high salt content and water table.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6643

Growth curve name: Eroded Tableland, lowland warm-season dominant.

Growth curve description: Warm-season dominant, lowland.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	7	15	25	25	17	6	2	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Long-term prescribed grazing with adequate recovery periods between grazing events will move this plant community to the *Inland Saltgrass/Alkali Sacaton Plant Community* and eventually to the *Alkali Sacaton Plant Community*. This process will require a long period of time, and may be difficult to attain depending on the degree of degradation.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

-- Under Development --

Alkali Sacaton Plant Community:

Inland Saltgrass/Alkali Sacaton Plant Community:

Low Plant Density, Excessive Litter Plant Community:

Inland Saltgrass Sod Plant Community:

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

Common Name	Cattle	Sheep	Horses	Deer	Antelope	Bison	Elk
Grasses & Grass-like							
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
alkali muhly	U U D U	U U D U	U U D U	N N N N	N N N N	U U D U	U U 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
Baltic 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
blue grama	U D P U	D P P D	U D P U	D P P D	D P P D	U D P U	U D P 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
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
little bluestem	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
plains bluegrass	U D U D	N D N U	U D U D	U P N D	U P N 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
sand dropseed	N U N N	N U N N	N U N N	N U N N	N U N N	N U N N	N U N 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
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
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
switchgrass	U D D U	U D U U	U D D U	N N N N	N N N N	U D D U	U D D U
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
Forbs							
arrowgrass	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T
cudweed sagewort	U U U U	U U D U	U U U U	U U D U	U U D U	U U U U	U U D U
heath aster	U U D U	U U P U	U U D U	U U P U	U U P U	U U D U	U U P U
milkvetch	U U U U	U D U U	U U U U	U D U U	U D U U	U U U U	U D U U
prairie gentian	U U U U	N U U N	U U U U	N U U N	N U U N	U U U U	N U U 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
scouringrush	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T
western ragweed	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

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 suggested initial stocking rates for cattle under continuous grazing (year long grazing or growing season long grazing) under normal growing conditions; however, *continuous grazing is not recommended*. 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 the following stocking rate information along with animal preference data, 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)
Alkali Sacaton	2800	0.77
Inland Saltgrass/Alkali Sacaton	1700	0.47
Inland Saltgrass Sod	1000	0.27
Low Plant Density, Excessive Litter	1900	**

*Based on 912 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).

**Highly variable; stocking rate needs to be determined onsite.

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

Forage production on these sites is limited by saline conditions. Proper management is critical to the continued productivity of these sites. Grass reestablishment on overgrazed or tilled sites is often slow and difficult because increased evaporation (from exposed soil surfaces) causes increased salt concentration at the soil surface. The Wildhorse soils on this site are in Hydrologic Soil Group A, but may include localized areas of other soils in Groups B and C. Infiltration rates for Wildhorse soils are extremely high, but high water tables provide subirrigation of salt tolerant vegetation. Surrounding upland areas tend to have permeable soils and surface inflow peaks on these sites are often muted. These sites do not flood or are flooded only occasionally for brief periods.

Rills, gullies, and water flow patterns are not present. Pedestals are only slightly present. Litter falls in place, and signs of movement are not common. Chemical and physical crusts are rare and not significant for hydrologic considerations. Cryptogamic crusts may be present but are not significant for hydrologic considerations. Overall, this site has the appearance of being stable and productive except areas of white crust (salts) may be present.

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

(066XY032NE) – Sandy 18-22" P.Z.
 (066XY054NE) – Sandy 22-25" P.Z.
 (066XY044NE) – Wetland

(066XY033NE) – Sands 18-22" P.Z.
 (066XY055NE) – Sands 22-25" P.Z.
 (066XY045NE) – Wet Subirrigated

Similar Sites

(066XY046NE) – Subirrigated
[big bluestem, Indiangrass dominant; less prairie cordgrass; more productive]

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: Wayne Bachman, Soil Scientist, NRCS; Stan Boltz, Range Management Specialist, NRCS; Anna Ferguson, Soil Conservationist, NRCS; Roger Hammer, Soil Scientist, NRCS; Dana Larsen, Range Management Specialist, NRCS; Dave Schmidt, Rangeland Management Specialist, NRCS; and Kim Stine, Rangeland Management Specialist, NRCS.

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417	1	1979	NE	Holt

State Correlation

This site has been correlated with NE and SD in MLRA 66.

Field Offices Counties

Ainsworth, NE	Brown, Keya Paha & Rock
Bloomfield, NE	Knox
Burke, SD	Gregory
Martin, SD	Bennett & Shannon
Neligh, NE	Antelope

Field Offices Counties

O'Neill, NE	Holt
Spencer, NE	Boyd
Valentine, NE	Cherry
White River, SD	Mellette, Todd
Winner, SD	Tripp

Relationship to Other Established Classifications

Level IV Ecoregions of the Conterminous United States: 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://nasis.nrcs.usda.gov>)

USDA, NRCS, 2002. National Soil Survey Handbook, title 430-VI. (<http://soils.usda.gov/technical/handbook/>)

Site Description Approval

NE, State Range Management Specialist

Date

SD, State Range Management Specialist

Date