

## United States Department of Agriculture Natural Resources Conservation Service

### Ecological Site Description

**Site Type:** Rangeland

**Site Name:** Shallow to Gravel

**Site ID:** R066XY062NE

**Major Land Resource Area:** 66 – Dakota –  
Nebraska Eroded Tableland

#### Physiographic Features

This site occurs on stream terraces and uplands where gravelly sediments are deposited.

**Landform:** ridge, terrace, and alluvial fan



**Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	1900	3000
<b>Slope (percent):</b>	0	30
<b>Water Table Depth (inches):</b>	None	None
<b>Flooding:</b>		
<b>Frequency:</b>	None	None
<b>Duration:</b>	None	None
<b>Ponding:</b>		
<b>Depth (inches):</b>	None	None
<b>Frequency:</b>	None	None
<b>Duration:</b>	None	None
<b>Runoff Class:</b>	Negligible	Very low

#### 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.

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.

	<b>Minimum</b>	<b>Maximum</b>
<b>Frost-free period (days):</b>	127	154
<b>Freeze-free period (days):</b>	144	173
<b>Mean Annual Precipitation (inches):</b>	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**

No significant water features influence this site.

**Representative Soil Features**

The features common to all soils in this site are the sand to loam textured surface soils and slopes of 0 to 30 percent. The soils in this site are excessively drained and formed in alluvium. The surface layer is 5 to 16 inches thick. The texture of the subsurface generally ranges from sand to very gravelly coarse sand. Runoff as evidenced by patterns of rills, gullies, or other water flow is negligible to very low, in spite of the steep slopes, due to the very 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.

Site Type: Rangeland  
MLRA: 66 – Dakota - Nebraska Eroded Tableland

Shallow to Gravel  
R066XY062NE

Parent Material Kind: alluvium  
Parent Material Origin: mixed  
Surface Texture: fine sand loam, loamy sand, sandy loam  
Surface Texture Modifier: none  
Subsurface Texture Group: sandy  
Surface Fragments ≤3" (% Cover): 0-35  
Surface Fragments >3" (%Cover): 0  
Subsurface Fragments ≤3" (% Volume): 0-70  
Subsurface Fragments >3" (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	excessively	excessively
Permeability Class:	rapid	very rapid
Depth (inches):	80	80
Electrical Conductivity (mmhos/cm)*:	0	0
Sodium Absorption Ratio*:	0	0
Soil Reaction (1:1 Water)*:	5.1	7.8
Soil Reaction (0.1M CaCl <sub>2</sub> )*:	NA	NA
Available Water Capacity (inches)*:	3	4
Calcium Carbonate Equivalent (percent)*:	0	0

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

## Plant Communities

### Ecological Dynamics of the Site:

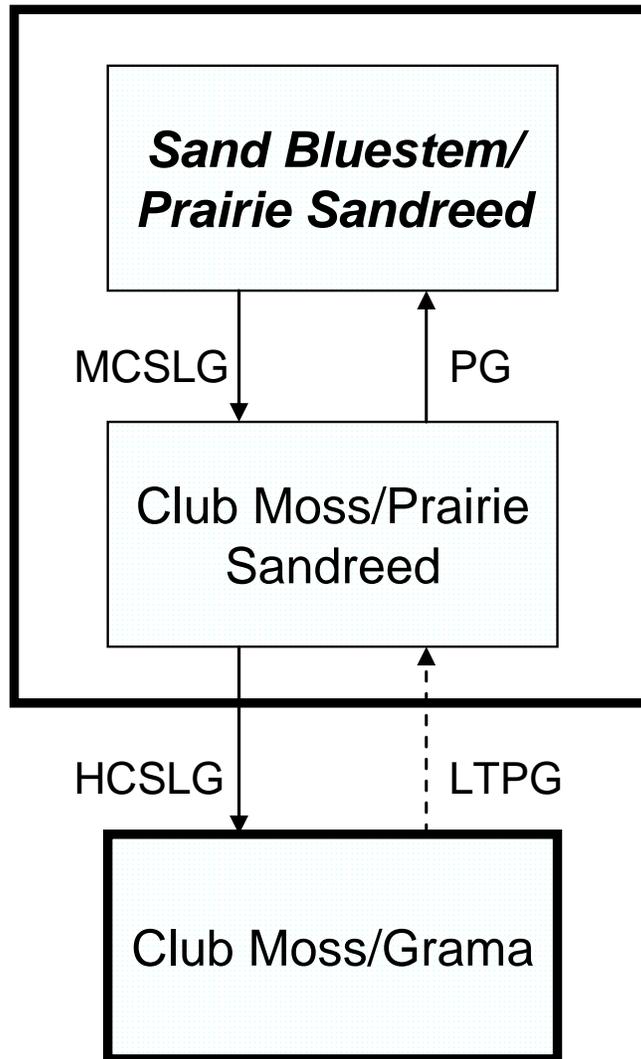
As this site deteriorates, species such as hairy grama, blue grama, and club moss will increase. Grasses such as sand bluestem, little bluestem, needleandthread, and sideoats grama will decrease in frequency and production. Perennial forbs increase under poor management, and if management persists, annual forbs and shrubs will also increase as grasses decrease.

This site is extremely responsive to high moisture years when additional moisture is received during the growing season. The associated coarse textured soils have low moisture holding capability, which generally limits plant growth. With additional moisture, the interpretive plant community can significantly increase its production when compared to the production of a normal year.

Interpretations are primarily based on the Sand Bluestem/Prairie Sandreed 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



**HCSLG** – Heavy continuous season-long grazing; **LTPG** – Long-term prescribed grazing; **MCSLG** – Moderate continuous season-long grazing; **PG** - Prescribed grazing.

Plant Community Composition and Group Annual Production

			Sand Bluestem/Prairie Sandreed		
COMMON/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Group	lbs./acre	% Comp
<b>GRASSES &amp; GRASS-LIKES</b>				1120 - 1280	70 - 80
<b>WARM-SEASON GRASSES</b>			<b>1</b>	<b>320 - 640</b>	<b>20 - 40</b>
sand bluestem	Andropogon hallii	ANHA	1	160 - 400	10 - 25
prairie sandreed	Calamovilfa longifolia	CALO	1	80 - 320	5 - 20
little bluestem	Schizachyrium scoparium	SCSC	1	80 - 160	5 - 10
<b>GRAMA</b>			<b>2</b>	<b>160 - 400</b>	<b>10 - 25</b>
blue grama	Bouteloua gracilis	BOGR2	2	160 - 320	10 - 20
hairy grama	Bouteloua hirsuta	BOHI2	2	80 - 160	5 - 10
<b>NEEDLEGRASS</b>			<b>3</b>	<b>160 - 320</b>	<b>10 - 20</b>
needleandthread	Hesperostipa comata ssp. comata	HECOC8	3	160 - 320	10 - 20
porcupine grass	Hesperostipa spartea	HESP11	3	0 - 80	0 - 5
green needlegrass	Nassella viridula	NAVI4	3	0 - 80	0 - 5
<b>OTHER NATIVE GRASSES</b>			<b>4</b>	<b>80 - 240</b>	<b>5 - 15</b>
prairie junegrass	Koeleria macrantha	KOMA	4	0 - 80	0 - 5
sand dropseed	Sporobolus cryptandrus	SPCR	4	0 - 160	0 - 10
sideoats grama	Bouteloua curtipendula	BOCU	4	80 - 160	5 - 10
purple lovegrass	Eragrostis spectabilis	ERSP	4	0 - 48	0 - 3
western wheatgrass	Pascopyrum smithii	PASM	4	0 - 80	0 - 5
threeawn	Aristida spp.	ARIS1	4	0 - 48	0 - 3
other perennial grasses		2GP	4	0 - 32	0 - 2
<b>GRASS-LIKES</b>			<b>5</b>	<b>0 - 80</b>	<b>0 - 5</b>
sedge	Carex spp.	CAREX	5	0 - 80	0 - 5
<b>FORBS</b>			<b>7</b>	<b>16 - 80</b>	<b>1 - 5</b>
cudweed sagewort	Artemisia ludoviciana	ARLU	7	0 - 16	0 - 1
cutleaf ironplant	Machaeranthera pinnatifida	MAPI	7	0 - 16	0 - 1
gayfeather	Liatris spp.	LIATR	7	0 - 16	0 - 1
goldenrod	Solidago spp.	SOLID	7	0 - 32	0 - 2
green sagewort	Artemisia dracuncululus	ARDR4	7	0 - 16	0 - 1
hairy goldaster	Heterotheca villosa	HEVI4	7	0 - 16	0 - 1
heath aster	Symphotrichum ericoides	SYER	7	0 - 32	0 - 2
prairie coneflower	Ratibida columnifera	RACO3	7	0 - 16	0 - 1
purple prairie clover	Dalea purpurea	DAPU5	7	0 - 32	0 - 2
rush skeletonweed	Lygodesmia juncea	LYJU	7	0 - 16	0 - 1
scurfpea	Psoralegium spp.	PSORA2	7	0 - 16	0 - 1
spiderwort	Tradescantia spp.	TRADE	7	0 - 16	0 - 1
stiff sunflower	Helianthus pauciflorus	HEPA19	7	0 - 16	0 - 1
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 32	0 - 2
woolly verbena	Verbena stricta	VEST	7	0 - 16	0 - 1
other perennial forbs		2FP	7	0 - 32	0 - 2
<b>SHRUBS</b>			<b>8</b>	<b>80 - 240</b>	<b>5 - 15</b>
brittle cactus	Opuntia fragilis	OPFR	8	0 - 80	0 - 5
broom snakeweed	Gutierrezia sarothrae	GUSA2	8	0 - 80	0 - 5
plains pricklypear	Opuntia polyacantha	OPPO	8	0 - 80	0 - 5
fringed sagewort	Artemisia frigida	ARFR4	8	0 - 80	0 - 5
leadplant	Amorpha canescens	AMCA6	8	0 - 80	0 - 5
rose	Rosa spp.	ROSA5	8	0 - 80	0 - 5
other shrubs		2SHRUB	8	0 - 80	0 - 5
<b>CRYPTOGAMS</b>			<b>9</b>	<b>0 - 160</b>	<b>0 - 10</b>
clubmoss	Selaginella densa	SEDE2	9	0 - 160	0 - 10

Annual Production lbs./acre	LOW	RV	HIGH
<b>GRASSES &amp; GRASS-LIKES</b>	910	1312	-1700
<b>FORBS</b>	15	48	-85
<b>SHRUBS</b>	75	160	-250
<b>CRYPTOGAMS</b>	0	80	-165
<b>TOTAL</b>	1000	1600	-2200

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	Sand Bluestem/Prairie Sandreed			Club Moss/Prairie Sandreed			Club Moss/Grama		
		Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp
<b>GRASSES &amp; GRASS-LIKES</b>			1120 - 1280	70 - 80		770 - 880	70 - 80		315 - 560	45 - 80
<b>WARM-SEASON GRASSES</b>		1	320 - 640	20 - 40	1	165 - 330	15 - 30	1	35 - 70	5 - 10
sand bluestem	ANHA	1	160 - 400	10 - 25	1	0 - 110	0 - 10			
prairie sandreed	CALO	1	80 - 320	5 - 20	1	165 - 330	15 - 30	1	35 - 70	5 - 10
little bluestem	SCSC	1	80 - 160	5 - 10	1	0 - 55	0 - 5			
<b>GRAMA</b>		2	160 - 400	10 - 25	2	110 - 330	10 - 30	2	175 - 315	25 - 45
blue grama	BOGR2	2	160 - 320	10 - 20	2	110 - 275	10 - 25	2	175 - 315	25 - 45
hairy grama	BOHI2	2	80 - 160	5 - 10	2	55 - 165	5 - 15	2	35 - 210	5 - 30
<b>NEEDLEGRASS</b>		3	160 - 320	10 - 20	3	0 - 55	0 - 5	3	0 - 35	0 - 5
needleandthread	HECOC8	3	160 - 320	10 - 20	3	0 - 55	0 - 5	3	0 - 35	0 - 5
porcupine grass	HESP11	3	0 - 80	0 - 5	3	0 - 55	0 - 5			
green needlegrass	NAVI4	3	0 - 80	0 - 5	3	0 - 55	0 - 5			
<b>OTHER NATIVE GRASSES</b>		4	80 - 240	5 - 15	4	55 - 220	5 - 20	4	35 - 140	5 - 20
prairie junegrass	KOMA	4	0 - 80	0 - 5	4	55 - 110	5 - 10	4	0 - 35	0 - 5
sand dropseed	SPCR	4	0 - 160	0 - 10	4	0 - 110	0 - 10	4	35 - 105	5 - 15
sideoats grama	BOCU	4	80 - 160	5 - 10	4	0 - 55	0 - 5			
purple lovegrass	ERSP	4	0 - 48	0 - 3	4	0 - 55	0 - 5			
western wheatgrass	PASM	4	0 - 80	0 - 5	4	0 - 55	0 - 5	4	0 - 14	0 - 2
threeawn	ARIST	4	0 - 48	0 - 3	4	0 - 88	0 - 8	4	0 - 105	0 - 15
other perennial grasses	2GP	4	0 - 32	0 - 2	4	0 - 22	0 - 2	4	0 - 35	0 - 5
<b>GRASS-LIKES</b>		5	0 - 80	0 - 5	5	0 - 110	0 - 10	5	0 - 35	0 - 5
sedge	CAREX	5	0 - 80	0 - 5	5	0 - 110	0 - 10	5	0 - 35	0 - 5
<b>NON-NATIVE GRASSES</b>		6			6	0 - 55	0 - 5	6	35 - 70	5 - 10
cheatgrass	BRTE				6	0 - 55	0 - 5	6	35 - 70	5 - 10
bluegrass	POA				6	0 - 55	0 - 5	6	0 - 70	0 - 10
<b>FORBS</b>		7	16 - 80	1 - 5	7	11 - 88	1 - 8	7	7 - 70	1 - 10
cudweed sagewort	ARLU	7	0 - 16	0 - 1	7	0 - 22	0 - 2	7	0 - 21	0 - 3
cutleaf ironplant	MAPI	7	0 - 16	0 - 1	7	0 - 22	0 - 2	7	0 - 14	0 - 2
gayfeather	LIATR	7	0 - 16	0 - 1	7	0 - 11	0 - 1			
goldenrod	SOLID	7	0 - 32	0 - 2	7	0 - 22	0 - 2	7	0 - 7	0 - 1
green sagewort	ARDR4	7	0 - 16	0 - 1	7	0 - 22	0 - 2	7	0 - 14	0 - 2
hairy goldaster	HEVI4	7	0 - 16	0 - 1	7	0 - 11	0 - 1	7	0 - 7	0 - 1
heath aster	SYER	7	0 - 32	0 - 2	7	0 - 11	0 - 1	7	0 - 14	0 - 2
prairie coneflower	RACO3	7	0 - 16	0 - 1	7	0 - 11	0 - 1	7	0 - 7	0 - 1
purple prairie clover	DAPU5	7	0 - 32	0 - 2	7	0 - 11	0 - 1			
rush skeletonweed	LYJU	7	0 - 16	0 - 1	7	0 - 11	0 - 1	7	0 - 7	0 - 1
scurfpea	PSORA2	7	0 - 16	0 - 1	7	0 - 11	0 - 1	7	0 - 7	0 - 1
spiderwort	TRADE	7	0 - 16	0 - 1	7	0 - 11	0 - 1			
stiff sunflower	HEPA19	7	0 - 16	0 - 1	7	0 - 11	0 - 1			
western ragweed	AMPS	7	0 - 32	0 - 2	7	0 - 33	0 - 3	7	0 - 35	0 - 5
woolly verbena	VEST	7	0 - 16	0 - 1	7	0 - 22	0 - 2	7	0 - 21	0 - 3
other perennial forbs	2FP	7	0 - 32	0 - 2	7	0 - 22	0 - 2	7	0 - 14	0 - 2
<b>SHRUBS</b>		8	80 - 240	5 - 15	8	55 - 165	5 - 15	8	35 - 70	5 - 10
brittle cactus	OPFR	8	0 - 80	0 - 5	8	0 - 55	0 - 5	8	0 - 35	0 - 5
broom snakeweed	GUSA2	8	0 - 80	0 - 5	8	0 - 55	0 - 5	8	0 - 35	0 - 5
plains pricklypear	OPPO	8	0 - 80	0 - 5	8	0 - 55	0 - 5	8	0 - 35	0 - 5
fringed sagewort	ARFR4	8	0 - 80	0 - 5	8	0 - 55	0 - 5	8	0 - 35	0 - 5
leadplant	AMCA6	8	0 - 80	0 - 5	8	0 - 33	0 - 3			
rose	ROSA5	8	0 - 80	0 - 5	8	0 - 55	0 - 5	8	0 - 14	0 - 2
<b>CRYPTOGAMS</b>		9	0 - 160	0 - 10	9	55 - 165	5 - 15	9	105 - 210	15 - 30
clubmoss	SEDE2	9	0 - 160	0 - 10	9	55 - 165	5 - 15	9	105 - 210	15 - 30

Annual Production lbs./acre	LOW	RV	HIGH	LOW	RV	HIGH	LOW	RV	HIGH
<b>GRASSES &amp; GRASS-LIKES</b>	910	1312	1700	595	831	1070	265	452	635
<b>FORBS</b>	15	48	85	5	50	90	5	39	75
<b>SHRUBS</b>	75	160	250	50	110	170	30	53	75
<b>CRYPTOGAMS</b>	0	80	165	50	110	170	100	158	215
<b>TOTAL</b>	1000	1600	2200	700	1100	1500	400	700	1000

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. 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 considered “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 these communities is to capture the current knowledge and experience at the time of this revision.

#### Sand Bluestem/Prairie Sandreed Plant Community

Interpretations are primarily based on the Sand Bluestem/Prairie Sandreed Plant Community (this is also considered climax). This plant community evolved with grazing by large herbivores and is moderately 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. The potential vegetation is about 70 percent grasses or grass-like plants, 5 percent forbs, 15 percent shrubs, and 10 percent cryptogams.

The major grasses include blue grama, sand bluestem, prairie sandreed, and needleandthread. Other grasses occurring on this plant community include sand dropseed, prairie Junegrass, little bluestem, and sideoats grama.

This plant community is well adapted to the Northern Great Plains climatic conditions. The diversity in plant species allows for high drought tolerance. This is a healthy and sustainable plant community (site/soil stability, watershed function, and biologic 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: NE6637

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

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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	8	15	24	23	15	5	5	0	0

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

- Moderate, continuous season-long grazing will convert the plant community to the *Club Moss/Prairie Sandreed Plant Community*.

#### Club Moss/Prairie Sandreed Plant Community

This plant community is found under summer long grazing with moderate grazing pressure, or as a transitional plant community in a rotational grazing system. While prairie sandreed is the dominant species, blue grama and club moss are significant components of this plant community. Warm-season grasses make up the majority of the plant production with the balance made up of perennial forbs, sedges, shrubs, and cryptogams.

The potential vegetation is about 60 percent grasses or grass-like plants, 10 percent forbs, 15 percent shrubs, and 15 percent cryptogams. Dominant grasses include blue grama and prairie sandreed. Grasses of secondary importance include little bluestem, prairie Junegrass,

and sand dropseed. Forbs commonly found in this plant community include cutleaf ironplant, goldenrod, sageworts, western ragweed, and woolly verbena. The significant shrubs include fragile cactus, broom snakeweed, common pricklypear, and fringed sagewort.

When compared to the interpretive plant community, blue grama and club moss has increased. Sand bluestem, little bluestem, and needleandthread have decreased, and production of other cool- and warm-season grasses has also been reduced. Sedges have also increased as a result of summer grazing pressure. This plant community is moderately resistant to change. Most species present are well adapted to grazing; however, species composition can be altered through long-term overgrazing. If the herbaceous component is intact, it tends to be resilient if the disturbance is not long-term.

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: NE6637

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

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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	8	15	24	23	15	5	5	0	0

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

- Continuous season-long grazing combined with heavy stocking rates will convert the plant community to the *Club Moss/Grama Plant Community*.
- Prescribed grazing will convert this plant community to the *Sand Bluestem/Prairie Sandreed Plant Community*.

### Club Moss/Grama Plant Community

This plant community is found close to watering facilities under continuous, summer long grazing with moderate grazing pressure, or pasture wide under heavy grazing use. Blue grama, hairy grama, and club moss are significant components of this plant community. The potential vegetation is about 45 percent grasses or grass-like plants, 10 percent forbs, 15 percent shrubs, and 30 percent cryptogams. Dominant grasses include blue grama, hairy grama, and sand dropseed. Grasses of secondary importance include prairie sandreed and threeawn. Forbs commonly found in this plant community include western ragweed, sageworts, cutleaf ironplant, and goldenrod. The significant shrubs include fragile cactus, broom snakeweed, common pricklypear, and fringed sagewort.

When compared to the interpretive plant community, grama grasses and club moss have increased. Little bluestem and sand bluestem have decreased, and production of cool and warm-season grasses has also been reduced. A dense sod of club moss dominates this plant community. Club moss cover is often 30 percent or greater. Club moss creates a more arid microclimate, resulting in extreme competition for available moisture. Vigor and production of other species is reduced dramatically. Initial runoff rates are low but then increase as club moss becomes saturated, far exceeding what is normal for the Sand Bluestem/Prairie Sandreed Plant Community. Soil erosion is minimal.

**Site Type: Rangeland**  
**MLRA: 66 – Dakota - Nebraska Eroded Tableland**

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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: NE6638

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

Growth curve description: Warm-season dominant.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	7	15	20	30	15	5	5	0	0

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

- Long term prescribed grazing with adequate rest will convert this plant community to the *Club Moss/Prairie Sandreed Plant Community*.

## **Ecological Site Interpretations**

### **Animal Community – Wildlife Interpretations**

-- Under Development --

**Sand Bluestem/Prairie Sandreed Plant Community:**

**Club Moss/Prairie Sandreed Plant Community:**

**Club Moss/Grama Plant Community:**

### Animal Preferences (Quarterly – 1,2,3,4<sup>†</sup>)

Common Name	Cattle	Sheep	Horses	Deer	Antelope	Bison	Elk
<b>Grasses &amp; Grass-like</b>							
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
green needlegrass	U P U D	N P N P	U P U D	N P N P	N P N P	U P U D	U P U D
hairy 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
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
needleandthread	U D U D	N D N U	U D U D	N D N U	N D N U	U D U D	U D U D
porcupine grass	U P U D	N D N U	U P U D	N D N U	N D N U	U P U D	U P U D
prairie junegrass	U D U D	N D N U	U D U D	N D N U	N D N U	U D U D	U D U D
prairie sandreed	U D D U	U D U U	U D D U	U U D U	U U D U	U D D U	U D D U
purple lovegrass	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
sand bluestem	U D P D	U D U U	U D P D	U D U U	U D U U	U D P D	U D P D
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
sideoats grama	U D P U	U P D U	U D P U	U P D U	U P D U	U D P U	U D P U
threeawn	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
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
<b>Forbs</b>							
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
cutleaf ironplant	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
gayfeather	U U D U	U P P U	U U D U	U P P U	U P P U	U U D U	U P P U
goldenrod	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
green sagewort	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
hairy goldaster	U U D U	N N N N	U U D U	N N N N	N N N N	U U D U	N N N N
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
prairie coneflower	U U D U	U P P U	U U D U	U P P U	U P P U	U U D U	U P P U
purple prairie clover	U D P U	U P P U	U D P U	U P P U	U P P U	U D P U	U P P U
rush skeletonweed	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
scurfpea	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
spiderwort	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
stiff sunflower	U D P U	U D P U	U D P U	U D P U	U D P U	U D P U	U D P U
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
woolly verbena	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
<b>Shrubs</b>							
brittle cactus	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
broom snakeweed	N N N N	U U U U	N N N N	U U U U	U U U U	N N N N	U U U U
fringed sagewort	U U U U	U U U U	U U U U	U D D U	U P P D	U U U U	U U U D
leadplant	U P D U	U P D U	U P D U	U P D U	U P D U	U P D U	U P D U
plains pricklypear	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
rose	U D D U	U D D U	U D D U	U D D U	U D D U	U D D U	U D D U
<b>Cryptogams</b>							
clubmoss	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

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

<sup>†</sup> 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 ecological site 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.

<b>Plant Community</b>	<b>Average Annual Production (lbs./acre, air-dry)</b>	<b>Stocking Rate* (AUM/acre)</b>
Sand Bluestem/Prairie Sandreed	1600	0.44
Club Moss/Prairie Sandreed	1100	0.30
Club Moss/Grama	700	0.19

\*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).

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. Meadin and Simeon soils on this site are in Hydrologic Soil Group A. Water transmission through Group A soils is normally greater than 0.30 inches per hour. Runoff is expected to occur only during the most intense storms (refer to Section 4, NRCS National Engineering Handbook for runoff quantities and hydrologic curves).

The high infiltration rate of these sands results in few rills and gullies or water flow patterns even though steep slopes may be included. Pedestals are only slightly present in association with bunchgrasses such as needleandthread. Litter typically falls in place on flat slopes. Chemical and physical crusts are rare to non-existent. Club moss can increase to significant levels, and once saturated, runoff will increase dramatically and infiltration will be greatly reduced. Overall, this site has the appearance of being stable and productive.

## 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

(066XY033NE) – Sands 18-22” P.Z. (066XY055NE) – Sands 22-25” P.Z.  
(066XY032NE) – Sandy 18-22” P.Z. (066XY054NE) – Sandy 22-25” P.Z.  
(066XY036NE) – Loamy 18-22” P.Z. (066XY058NE) – Loamy 22-25” P.Z.

### Similar Sites

(066XY032NE) – Sandy 18-22” P.Z.  
[higher production; sand bluestem dominant; less blue grama]

### 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	5	1968 – 1982	NE	Boyd, Holt, Brown, Knox
Ocular estimates	4	2002	NE, SD	Keya Paha, Todd

### 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 Type: Rangeland  
MLRA: 66 – Dakota - Nebraska Eroded Tableland

Shallow to Gravel  
R066XY062NE

## Site Description Approval

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

\_\_\_\_\_  
Date

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

\_\_\_\_\_  
Date