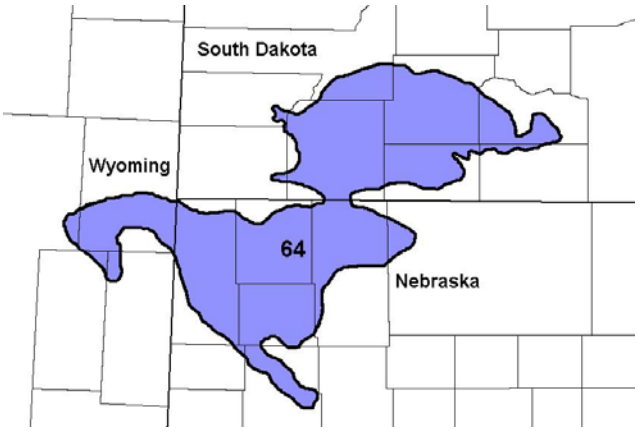
# United States Department of Agriculture
# Natural Resources Conservation Service

## Ecological Site Description




**Site Type:** Rangeland

**Site Name:** Saline Lowland

**Site ID:** R064XY030NE

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

## Physiographic Features

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

**Landform:** alluvial fan, flood plain **Aspect:** N/A

| | Minimum | Maximum |
|---|---|---|
| **Elevation (feet):** | 2900 | 4000 |
| **Slope (percent):** | 0 | 3 |
| **Water Table Depth (inches):** | 48 | >72 |
| **Flooding:** | | |
| **Frequency:** | None | Rare |
| **Duration:** | None | Very brief |
| **Ponding:** | | |
| **Depth (inches):** | None | None |
| **Frequency:** | None | None |
| **Duration:** | None | None |
| **Runoff Class:** | 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, SD) to about 25° F (Hemingford, NE). July is the warmest month with temperatures averaging from about 70° F (Keeline 3 W, 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 annually, ranging from about 13 miles per hour during the spring to about 10 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 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. Green up of cool season plants may occur in September and October when adequate soil moisture is present.

| | Minimum | Maximum |
|---|---|---|
| **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:** | **System** | **Subsystem** | **Class** | **Sub-class** |
|---|---|---|---|---|
| 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 3 to 6 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 4 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 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

| | Minimum | Maximum |
|---|---|---|
| **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 CaCl2)*:** | 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.

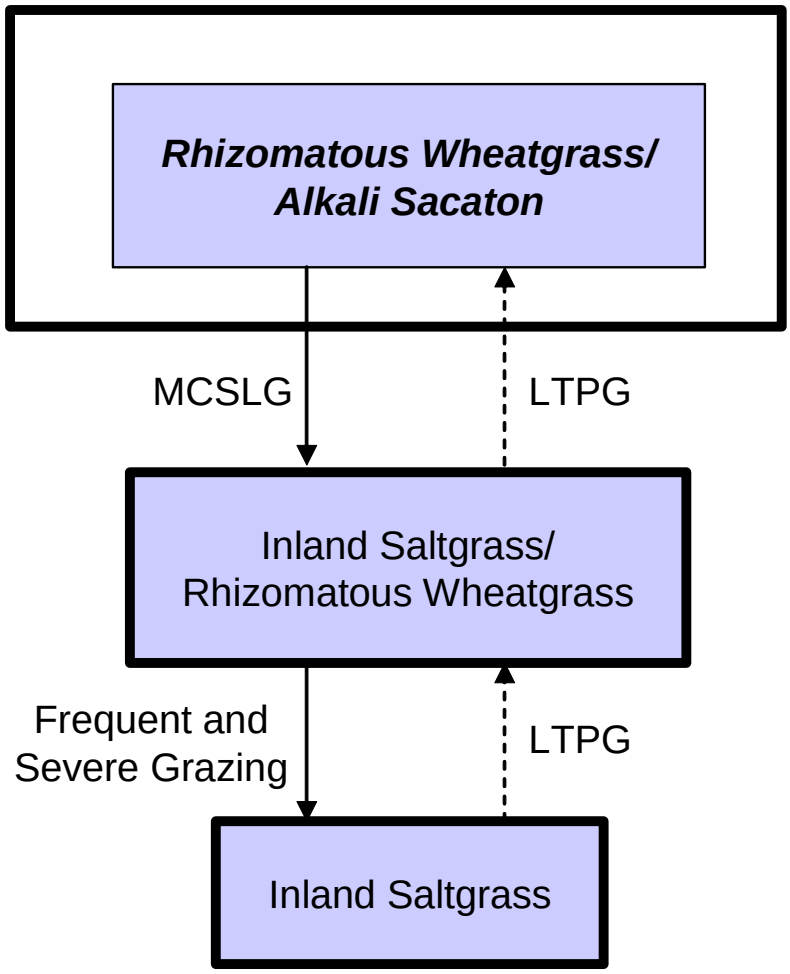
Shrubs such as greasewood and rubber rabbitbrush will occur in higher amounts on the western portions of where this site occurs.

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

| | | Rhizomatous Wheatgrass/ Alkali Sacaton | | | Inland Saltgrass/ Rhizomatous Wheatgrass | | | Inland Saltgrass | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **COMMON/GROUP NAME** | **SYMBOL** | **Grp** | **lbs./acre** | **% Comp** | **Grp** | **lbs./acre** | **% Comp** | **Grp** | **lbs./acre** | **% Comp** |
| ***GRASSES & GRASS-LIKES*** | | | *1820 - 2520* | *65 - 90* | | *1260 - 1620* | *70 - 90* | | *900 - 1140* | *75 - 95* |
| ***RHIZOMATOUS WHEATGRASSES*** | | **1** | **560 - 1120** | **20 - 40** | **1** | **270 - 540** | **15 - 30** | **1** | **12 - 120** | **1 - 10** |
| 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 |
| ***CORDGRASS*** | | **2** | **280 - 840** | **10 - 30** | **2** | **36 - 180** | **2 - 10** | **2** | **0 - 36** | **0 - 3** |
| 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 |
| ***SACATON*** | | **3** | **280 - 700** | **10 - 25** | **3** | **0 - 180** | **0 - 10** | **3** | | |
| alkali sacaton | SPAI | 3 | 280 - 700 | 10 - 25 | 3 | 0 - 180 | 0 - 10 | | | |
| ***OTHER NATIVE*** | | **4** | **280 - 560** | **10 - 20** | **4** | **360 - 720** | **20 - 40** | **4** | **480 - 960** | **40 - 80** |
| alkali bluegrass | POJU | 4 | 56 - 140 | 2 - 5 | 4 | 0 - 54 | 0 - 3 | | | |
| 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 |
| ***NON-NATIVE GRASSES*** | | **5** | | | **5** | **18 - 90** | **1 - 5** | **5** | **12 - 120** | **1 - 10** |
| bluegrass | POA | | | | 5 | 0 - 90 | 0 - 5 | 5 | 0 - 120 | 0 - 10 |
| cheatgrass | BRTE | | | | 5 | 18 - 54 | 1 - 3 | 5 | 12 - 60 | 1 - 5 |
| | | | | | | | | | | |
| ***FORBS*** | | *6* | *140 - 280* | *5 - 10* | *6* | *90 - 270* | *5 - 15* | *6* | *60 - 180* | *5 - 15* |
| 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 |
| lambsquarters | 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 |
| | | | | | | | | | | |
| ***SHRUBS*** | | *7* | *140 - 560* | *5 - 20* | *7* | *18 - 180* | *1 - 10* | *7* | *12 - 120* | *1 - 10* |
| 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 |
| | | | | | | | | | | |
| ***TREES*** | | *8* | *0 - 140* | *0 - 5* | *8* | *0 - 54* | *0 - 3* | *8* | *0 - 12* | *0 - 1* |
| plains cottonwood | PODEM | 8 | 0 - 140 | 0 - 5 | 8 | 0 - 54 | 0 - 3 | 8 | 0 - 12 | 0 - 1 |
| | | | | | | | | | | |

| **Annual Production lbs./acre** | LOW RV HIGH | LOW RV HIGH | LOW RV HIGH |
|---|---|---|---|
| ***GRASSES & GRASS-LIKES*** | 1930 · 2170 - 2355 | 900 - 1494 - 2060 | 735 - 1008 - 1275 |
| ***FORBS*** | 135 · 210 - 300 | 85 - 180 - 300 | 55 - 120 - 185 |
| ***SHRUBS*** | 135 · 350 - 600 | 15 - 99 - 185 | 10 - 66 - 125 |
| ***TREES*** | 0 · 70 - 145 | 0 - 27 - 55 | 0 - 6 - 15 |
| **TOTAL** | 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 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". 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 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% grasses or grass-like plants, 10% forbs and 10% 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 off-site 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 co-dominant.
Growth curve description: Cool-season, warm-season co-dominant, 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%, forbs 0-10 and shrubs 0-5. Dominant grasses include inland saltgrass, western wheatgrass and alkali and/or prairie cordgrass. Other secondary grasses and grass-like plants include blue grama and sedges. Forbs such asters and saltwort may occur, and non-native 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 has 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 sub-dominant.
Growth curve description: Warm-season dominant, cool-season sub-dominant, 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 sub-dominant.
Growth curve description: Warm-season dominant, cool-season sub-dominant, 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

-- Under Development --

**Rhizomatous Wheatgrass/Alkali Sacaton Plant Community**:

**Inland Saltgrass/Rhizomatous Wheatgrass Plant Community**:

**Inland Saltgrass Plant Community**:

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

| Common Name | Cattle | Sheep | Horses | Deer | Antelope | Bison | Elk |
|---|---|---|---|---|---|---|---|
| **Grasses & Grass-likes** | | | | | | | |
| 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 |
| **Forbs** | | | | | | | |
| 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 |
| **Shrubs** | | | | | | | |
| 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 |
| **Trees** | | | | | | | |
| 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 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.

| Plant Community | Average Annual Production (lbs./acre, air-dry) | Stocking Rate* (AUM/acre) |
|---|---|---|
| Rhizomatous Wheatgrass/Alkali Sacaton | 2000 | 0.60-0.65 |
| Inland Saltgrass/Rhizomatous Wheatgrass | 1100 | 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% 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% 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 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 variety 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, NRCS; Jill Epley, Range Management Specialist, NRCS; Rick Peterson, Range Management Specialist, NRCS; David Steffen, Range Management Specialist, NRCS; Jeff Vander Wilt; Range Management Specialist, NRCS; Phil Young, Soil Scientist, NRCS.

| Data Source | Number of Records | Sample Period | State | County |
|---|---|---|---|---|
| SCS-RANGE-417 | | | | |

## State Correlation

This site has been correlated with Nebraska, South Dakota and Wyoming 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://hpccsun.unl.edu)

USDA, NRCS. National Water and Climate Center, 101 SW Main, Suite 1600, Portland, OR 97204-3224. (http://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. 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 | | |