

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Loamy

Site ID: R063AY010SD

Major Land Resource Area (MLRA): 63A – Northern Rolling Pierre Shale Plains



Physiographic Features

This site occurs on nearly level to moderately steep uplands.

Landform: terrace, alluvial fan, pediment

Aspect: N/A

| | <u>Minimum</u> | <u>Maximum</u> |
|------------------------------------|----------------|----------------|
| Elevation (feet): | 1600 | 2700 |
| Slope (percent): | 0 | 15 |
| Water Table Depth (inches): | None | None |
| Flooding: | | |
| Frequency: | None | None |
| Duration: | None | None |
| Ponding: | | |
| Depth (inches): | None | None |
| Frequency: | None | None |
| Duration: | None | None |
| Runoff Class: | Low | High |

Climatic Features

MLRA 63A 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 16 to 20 inches per year. The average annual temperature is about 47°F. January is the coldest month with average temperatures ranging from about 11°F (Pollock, South Dakota (SD)), to about 22°F (Cedar Butte, SD). July is the warmest month with temperatures averaging from about 72°F (Pollock, SD), to about 76°F (Cedar Butte, SD). The range of normal average monthly temperatures between the coldest and warmest months is about 58°F. This large annual range attests to the continental nature of this area's climate. Hourly winds are estimated to 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.

| | | |
|--|----------------|----------------|
| | <u>Minimum</u> | <u>Maximum</u> |
| Frost-free period (days): | 126 | 149 |
| Freeze-free period (days): | 149 | 165 |
| Mean Annual Precipitation (inches): | 16 | 20 |

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

| | Precip. Min. | Precip. Max | Temp. Min. | Temp. Max. |
|-----------|--------------|-------------|------------|------------|
| January | 0.40 | 0.41 | -0.9 | 34.0 |
| February | 0.44 | 0.49 | 5.8 | 39.2 |
| March | 0.87 | 1.36 | 17.3 | 49.0 |
| April | 1.77 | 2.18 | 31.3 | 61.2 |
| May | 2.82 | 3.29 | 43.3 | 72.2 |
| June | 2.96 | 3.45 | 53.2 | 82.5 |
| July | 2.04 | 2.84 | 58.5 | 90.8 |
| August | 1.57 | 2.38 | 56.5 | 90.3 |
| September | 1.13 | 1.53 | 45.4 | 79.2 |
| October | 1.02 | 1.38 | 33.4 | 65.7 |
| November | 0.48 | 0.63 | 19.3 | 48.2 |
| December | 0.23 | 0.35 | 5.7 | 37.2 |

| Climate Stations | | Period | |
|------------------|------------------|--------|------|
| Station ID | Location or Name | From | To |
| SD1539 | Cedar Butte | 1951 | 2004 |
| SD1972 | Cottonwood 3 E | 1909 | 2004 |
| SD6712 | Pollock | 1948 | 2004 |
| SD6790 | Presho 7 NW | 1975 | 2004 |

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

Riparian and Wetland Features

No riparian areas or wetland features are directly associated with this site.

Representative Soil Features

The common features of soils in this site are loam to silty clay loam textured surface and subsoils, with slopes ranging from 0 to 15 percent. The soils in this site are well drained and formed in shale and alluvium. The loam to clay surface layer is three to nine inches thick. The soils have a moderate to slow infiltration rate. When dry these soils crack. When the soils are wet, surface compaction can occur with heavy traffic. This site typically should show slight to no evidence of rills, wind scoured areas or pedestalled plants. If present, water flow paths are broken, irregular in appearance, or discontinuous. The soil surface is stable and intact. Subsurface soil layers are nonrestrictive to water movement and root penetration.

These soils are mainly susceptible to water erosion. The hazard of water erosion increases on slopes greater than about five percent. Loss of 50 percent or more of the surface layer of the soils on this site can result in a shift in species composition and/or production.

Access Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>) for specific local soils information.

Parent Material Kind: alluvium
Parent Material Origin: siltstone, unspecified
Surface Texture: loam, silty clay loam, silt loam
Surface Texture Modifier: none
Subsurface Texture Group: loamy
Surface Fragments ≤3" (% Cover): 0-20
Surface Fragments >3" (%Cover): 0-5
Subsurface Fragments ≤3" (% Volume): 0-20
Subsurface Fragments >3" (% Volume): 0-5

| | <u>Minimum</u> | <u>Maximum</u> |
|---|----------------|----------------|
| Drainage Class: | well | well |
| Permeability Class: | slow | moderate |
| Depth (inches): | 80 | 80 |
| Electrical Conductivity (mmhos/cm)*: | 0 | 2 |
| Sodium Absorption Ratio*: | 0 | 1 |
| Soil Reaction (1:1 Water)*: | 6.1 | 8.4 |
| Soil Reaction (0.1M CaCl₂)*: | NA | NA |
| Available Water Capacity (inches)*: | 5 | 7 |
| 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.

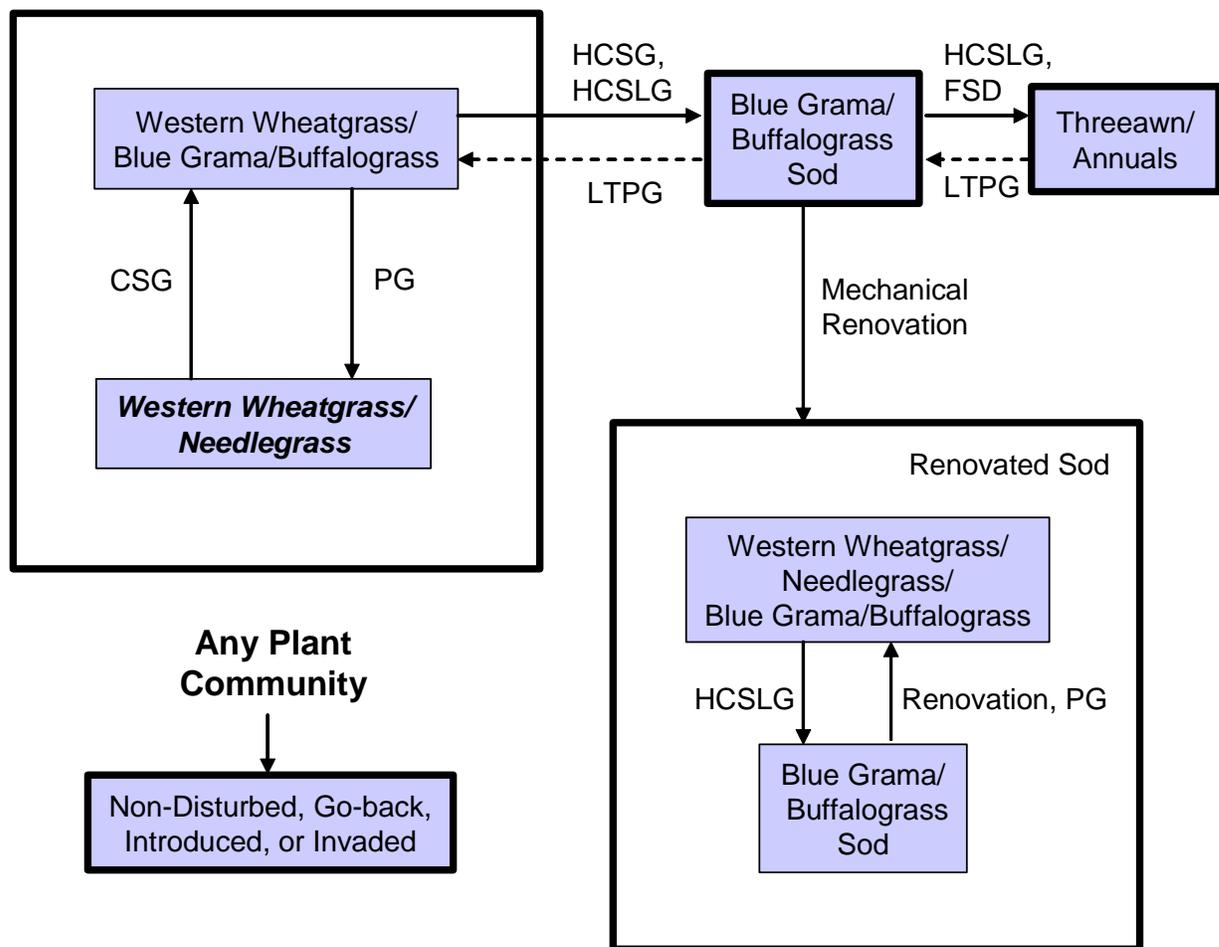
Interpretations are primarily based on the Western Wheatgrass/Needlegrass Plant Community. It has been determined by study of rangeland relic areas, areas protected from excessive disturbance, and areas under long-term rotational grazing regimes. Trends in plant community dynamics ranging from heavily 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.

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 Western

Wheatgrass/Needlegrass Plant Community. Blue grama and buffalograss will increase and eventually develop into a sod. Western wheatgrass will increase initially and then begin to decrease. Green needlegrass, needleandthread, porcupine grass, sideoats grama, and big bluestem will decrease in frequency and production. Excessive defoliation can cause threeawns and annuals to increase and dominate the site. Extended periods of nonuse and/or lack of fire will result in excessive litter and a plant community dominated by cool-season grasses such as western wheatgrass, bluegrass, and cheatgrass.

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



CSG – Continuous seasonal grazing; **CSLG** – Continuous season-long grazing;
FSD – Frequent, severe defoliation; **HCSG** – Heavy continuous seasonal grazing;
HCSLG – Heavy continuous season-long grazing; **LTPG** – Long-term prescribed grazing; **PG** – Prescribed Grazing; Dashed lines signify transitions returning across a threshold, which typically require significant inputs or long periods of time.

Plant Community Composition and Group Annual Production

| | | | Western Wheatgrass/Needlegrass | | |
|----------------------------------|--|--------|--------------------------------|-------------------|----------------|
| COMMON/GROUP NAME | SCIENTIFIC NAME | SYMBOL | Group | lbs./acre | % Comp |
| GRASSES & GRASS-LIKES | | | | 2210 - 2470 | 85 - 95 |
| WHEATGRASS | | | 1 | 910 - 1300 | 35 - 50 |
| western wheatgrass | Pascopyrum smithii | PASM | 1 | 910 - 1300 | 35 - 50 |
| NEEDLEGRASS | | | 2 | 390 - 910 | 15 - 35 |
| green needlegrass | Nassella viridula | NAV14 | 2 | 260 - 650 | 10 - 25 |
| needleandthread | Hesperostipa comata ssp. comata | HECOC8 | 2 | 260 - 520 | 10 - 20 |
| porcupine grass | Hesperostipa spartea | HESP11 | 2 | 0 - 130 | 0 - 5 |
| TALL/MID WARM-SEASON | | | 3 | 260 - 390 | 10 - 15 |
| sideoats grama | Bouteloua curtipendula | BOCU | 3 | 130 - 390 | 5 - 15 |
| big bluestem | Andropogon gerardii | ANGE | 3 | 0 - 130 | 0 - 5 |
| little bluestem | Schizachyrium scoparium | SCSC | 3 | 0 - 130 | 0 - 5 |
| SHORT WARM-SEASON | | | 4 | 130 - 260 | 5 - 10 |
| blue grama | Bouteloua gracilis | BOGR2 | 4 | 130 - 260 | 5 - 10 |
| buffalograss | Bouteloua dactyloides | BODA2 | 4 | 0 - 130 | 0 - 5 |
| threeawn | Aristida spp. | ARIST | 4 | 0 - 52 | 0 - 2 |
| OTHER NATIVE GRASSES | | | 5 | 0 - 130 | 0 - 5 |
| prairie junegrass | Koeleria macrantha | KOMA | 5 | 0 - 130 | 0 - 5 |
| plains muhly | Muhlenbergia cuspidata | MUCU3 | 5 | 0 - 78 | 0 - 3 |
| other perennial grasses | 0 | 2GP | 5 | 0 - 52 | 0 - 2 |
| GRASS-LIKES | | | 6 | 26 - 130 | 1 - 5 |
| threadleaf sedge | Carex filifolia | CAFI | 6 | 26 - 78 | 1 - 3 |
| needleleaf sedge | Carex duriuscula | CADU6 | 6 | 0 - 52 | 0 - 2 |
| sun sedge | Carex inops ssp. heliophila | CAINH2 | 6 | 0 - 26 | 0 - 1 |
| FORBS | | | 8 | 130 - 260 | 5 - 10 |
| American vetch | Vicia americana | VIAM | 8 | 0 - 78 | 0 - 3 |
| biscuitroot | Lomatium spp. | LOMAT | 8 | 0 - 52 | 0 - 2 |
| cudweed sagewort | Artemisia ludoviciana | ARLU | 8 | 0 - 78 | 0 - 3 |
| deathcamas | Zigadenus spp. | ZIGAD | 8 | 0 - 26 | 0 - 1 |
| deervetch | Lotus unifoliolatus var. unifoliolatus | LOUNU | 8 | 0 - 26 | 0 - 1 |
| dotted gayfeather | Liatris punctata | LIPU | 8 | 0 - 52 | 0 - 2 |
| false boneset | Brickellia eupatorioides | BREU | 8 | 0 - 78 | 0 - 3 |
| goldenrod | Solidago spp. | SOLID | 8 | 0 - 52 | 0 - 2 |
| green sagewort | Artemisia campestris | ARCA12 | 8 | 0 - 52 | 0 - 2 |
| milkvetch | Astragalus spp. | ASTRA | 8 | 0 - 52 | 0 - 2 |
| penstemon | Penstemon spp. | PENST | 8 | 0 - 26 | 0 - 1 |
| prairie clover | Dalea spp. | DALEA | 8 | 0 - 52 | 0 - 2 |
| prairie coneflower | Ratibida columnifera | RACO3 | 8 | 0 - 52 | 0 - 2 |
| pussytoes | Antennaria spp. | ANTEN | 8 | 0 - 26 | 0 - 1 |
| scarlet gaura | Gaura coccinea | GACO5 | 8 | 0 - 26 | 0 - 1 |
| scarlet globemallow | Sphaeralcea coccinea | SPCO | 8 | 0 - 52 | 0 - 2 |
| scurfpea | Psoraleum spp. | PSORA2 | 8 | 0 - 52 | 0 - 2 |
| spiny phlox | Phlox hoodii | PHHO | 8 | 0 - 26 | 0 - 1 |
| textile onion | Allium textile | ALTE | 8 | 0 - 26 | 0 - 1 |
| wavyleaf thistle | Cirsium undulatum | CIUN | 8 | 0 - 52 | 0 - 2 |
| western ragweed | Ambrosia psilostachya | AMPS | 8 | 0 - 52 | 0 - 2 |
| western wallflower | Erysimum capitatum var. capitatum | ERCAC | 8 | 0 - 26 | 0 - 1 |
| western yarrow | Achillea millefolium var. occidentalis | ACMIO | 8 | 0 - 52 | 0 - 2 |
| white prairie aster | Symphotrichum falcatum | SYFA | 8 | 0 - 52 | 0 - 2 |
| wild parsley | Musineon divaricatum | MUDI | 8 | 0 - 52 | 0 - 2 |
| native forbs | | 2FN | 8 | 0 - 78 | 0 - 3 |
| SHRUBS | | | 9 | 26 - 130 | 1 - 5 |
| cactus | Opuntia spp. | OPUNT | 9 | 0 - 26 | 0 - 1 |
| fringed sagewort | Artemisia frigida | ARFR4 | 9 | 0 - 52 | 0 - 2 |
| rose | Rosa spp. | ROSA5 | 9 | 0 - 52 | 0 - 2 |
| other shrubs | | 2SHRUB | 9 | 0 - 52 | 0 - 2 |

| Annual Production lbs./acre | | LOW | RV | HIGH |
|----------------------------------|--|--------|------|-------|
| GRASSES & GRASS-LIKES | | 1750 - | 2327 | -2990 |
| FORBS | | 125 - | 195 | -275 |
| SHRUBS | | 25 - | 78 | -135 |
| TOTAL | | 1900 - | 2600 | -3400 |

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 | Western Wheatgrass/ Needlegrass | | | Western Wheatgrass/ Blue Grama/Bufalograss | | | Blue Grama/Bufalograss Sod | | | Threawn/Annuals | | | |
|------------------------------------|--------|------------------------------------|-------------------|----------------|---|------------------|----------------|----------------------------|------------------|----------------|-----------------|------------------|----------------|------|
| | | Grp | lbs./acre | % Comp | Grp | lbs./acre | % Comp | Grp | lbs./acre | % Comp | Grp | lbs./acre | % Comp | |
| GRASSES & GRASS-LIKES | | | | | | | | | | | | | | |
| | | | 2210 - 2470 | 85 - 95 | | 1600 - 1800 | 80 - 90 | | 1040 - 1170 | 80 - 90 | | 480 - 640 | 60 - 80 | |
| WHEATGRASS | | 1 | 910 - 1300 | 35 - 50 | 1 | 200 - 500 | 10 - 25 | 1 | 65 - 130 | 5 - 10 | 1 | 0 - 80 | 0 - 10 | |
| western wheatgrass | PASM | 1 | 910 - 1300 | 35 - 50 | 1 | 200 - 500 | 10 - 25 | 1 | 65 - 130 | 5 - 10 | 1 | 0 - 80 | 0 - 10 | |
| NEEDLEGRASS | | 2 | 390 - 910 | 15 - 35 | 2 | 100 - 300 | 5 - 15 | 2 | 0 - 65 | 0 - 5 | 2 | 0 - 40 | 0 - 5 | |
| green needlegrass | NAVI4 | 2 | 260 - 650 | 10 - 25 | 2 | 100 - 200 | 5 - 10 | | | | | | | |
| needleandthread | HECOC8 | 2 | 260 - 520 | 10 - 20 | 2 | 100 - 200 | 5 - 10 | 2 | 0 - 65 | 0 - 5 | 2 | 0 - 40 | 0 - 5 | |
| porcupine grass | HESP11 | 2 | 0 - 130 | 0 - 5 | 2 | 0 - 40 | 0 - 2 | | | | | | | |
| TALL/MID WARM-SEASON | | 3 | 260 - 390 | 10 - 15 | 3 | 40 - 200 | 2 - 10 | 3 | 0 - 65 | 0 - 5 | 3 | | | |
| sideoats grama | BOCU | 3 | 130 - 390 | 5 - 15 | 3 | 40 - 200 | 2 - 10 | 3 | 0 - 65 | 0 - 5 | | | | |
| big bluestem | ANGE | 3 | 0 - 130 | 0 - 5 | 3 | 0 - 40 | 0 - 2 | | | | | | | |
| little bluestem | SCSC | 3 | 0 - 130 | 0 - 5 | 3 | 0 - 60 | 0 - 3 | | | | | | | |
| SHORT WARM-SEASON | | 4 | 130 - 260 | 5 - 10 | 4 | 200 - 600 | 10 - 30 | 4 | 325 - 650 | 25 - 50 | 4 | 120 - 440 | 15 - 55 | |
| blue grama | BOGR2 | 4 | 130 - 260 | 5 - 10 | 4 | 200 - 500 | 10 - 25 | 4 | 260 - 520 | 20 - 40 | 4 | 0 - 160 | 0 - 20 | |
| buffalograss | BODA2 | 4 | 0 - 130 | 0 - 5 | 4 | 20 - 160 | 1 - 8 | 4 | 65 - 195 | 5 - 15 | 4 | 0 - 120 | 0 - 15 | |
| threeawn | ARIST | 4 | 0 - 52 | 0 - 2 | 4 | 0 - 100 | 0 - 5 | 4 | 26 - 130 | 2 - 10 | 4 | 120 - 360 | 15 - 45 | |
| OTHER NATIVE GRASSES | | 5 | 0 - 130 | 0 - 5 | 5 | 0 - 100 | 0 - 5 | 5 | 0 - 65 | 0 - 5 | 5 | 0 - 32 | 0 - 4 | |
| prairie junegrass | KOMA | 5 | 0 - 130 | 0 - 5 | 5 | 0 - 100 | 0 - 5 | 5 | 0 - 39 | 0 - 3 | 5 | 0 - 16 | 0 - 2 | |
| plains muhly | MUCU3 | 5 | 0 - 78 | 0 - 3 | 5 | 0 - 20 | 0 - 1 | | | | | | | |
| other perennial grasses | 2GP | 5 | 0 - 52 | 0 - 2 | 5 | 0 - 40 | 0 - 2 | 5 | 0 - 26 | 0 - 2 | 5 | 0 - 16 | 0 - 2 | |
| GRASS-LIKES | | 6 | 26 - 130 | 1 - 5 | 6 | 100 - 200 | 5 - 10 | 6 | 65 - 195 | 5 - 15 | 6 | 8 - 40 | 1 - 5 | |
| threadleaf sedge | CAFI | 6 | 26 - 78 | 1 - 3 | 6 | 40 - 160 | 2 - 8 | 6 | 65 - 156 | 5 - 12 | 6 | 0 - 40 | 0 - 5 | |
| needleleaf sedge | CADU6 | 6 | 0 - 52 | 0 - 2 | 6 | 20 - 100 | 1 - 5 | 6 | 13 - 104 | 1 - 8 | 6 | 0 - 40 | 0 - 5 | |
| sun sedge | CAINH2 | 6 | 0 - 26 | 0 - 1 | 6 | 0 - 60 | 0 - 3 | 6 | 0 - 65 | 0 - 5 | 6 | 0 - 24 | 0 - 3 | |
| NON-NATIVE GRASSES | | 7 | | | 7 | 0 - 300 | 0 - 15 | 7 | 0 - 195 | 0 - 15 | 7 | 8 - 120 | 1 - 15 | |
| bluegrass | POA | | | | 7 | 0 - 300 | 0 - 15 | 7 | 0 - 130 | 0 - 10 | 7 | 0 - 40 | 0 - 5 | |
| smooth bromegrass | BRIN2 | | | | 7 | 0 - 300 | 0 - 15 | 7 | 0 - 65 | 0 - 5 | | | | |
| cheatgrass | BRTE | | | | 7 | 0 - 100 | 0 - 5 | 7 | 0 - 65 | 0 - 5 | 7 | 8 - 120 | 1 - 15 | |
| FORBS | | 8 | 130 - 260 | 5 - 10 | 8 | 100 - 200 | 5 - 10 | 8 | 65 - 130 | 5 - 10 | 8 | 80 - 160 | 10 - 20 | |
| American vetch | VIAM | 8 | 0 - 78 | 0 - 3 | 8 | 0 - 40 | 0 - 2 | | | | | | | |
| biscuitroot | LOMAT | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | | | | | | | |
| cutweed sagewort | ARLU | 8 | 0 - 78 | 0 - 3 | 8 | 0 - 80 | 0 - 4 | 8 | 0 - 39 | 0 - 3 | 8 | 0 - 40 | 0 - 5 | |
| curlycup gumweed | GRSQ | | | | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 52 | 0 - 4 | 8 | 0 - 64 | 0 - 8 | |
| deathcamas | ZIGAD | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | 8 | 0 - 13 | 0 - 1 | 8 | 0 - 8 | 0 - 1 | |
| deervetch | LOUNU | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| dotted gayfeather | LIPU | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 13 | 0 - 1 | | | | |
| false boneset | BREU | 8 | 0 - 78 | 0 - 3 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| fetid marigold | DYPA | | | | | | | 8 | 0 - 13 | 0 - 1 | 8 | 0 - 64 | 0 - 8 | |
| goldenrod | SOLID | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 60 | 0 - 3 | 8 | 0 - 26 | 0 - 2 | | | | |
| green sagewort | ARCA12 | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 60 | 0 - 3 | 8 | 0 - 39 | 0 - 3 | 8 | 0 - 16 | 0 - 2 | |
| milkvetch | ASTRA | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| penstemon | PENST | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| prairie clover | DALEA | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 13 | 0 - 1 | | | | |
| prairie coneflower | RACO3 | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 13 | 0 - 1 | | | | |
| pussytoes | ANTEN | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | 8 | 0 - 13 | 0 - 1 | 8 | 0 - 8 | 0 - 1 | |
| scarlet gaura | GACO5 | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| scarlet globemallow | SPOCO | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 60 | 0 - 3 | 8 | 0 - 26 | 0 - 2 | 8 | 0 - 8 | 0 - 1 | |
| scurfpea | PSORA2 | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 60 | 0 - 3 | 8 | 0 - 26 | 0 - 2 | 8 | 0 - 8 | 0 - 1 | |
| spiny phlox | PHHO | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | 8 | 0 - 13 | 0 - 1 | 8 | 0 - 8 | 0 - 1 | |
| sweetclover | MELIL | | | | 8 | 0 - 100 | 0 - 5 | 8 | 0 - 65 | 0 - 5 | 8 | 0 - 80 | 0 - 10 | |
| textile onion | ALTE | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| verbena | VERBE | | | | 8 | 0 - 20 | 0 - 1 | 8 | 0 - 26 | 0 - 2 | 8 | 0 - 24 | 0 - 3 | |
| wayleaf thistle | CIUN | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 20 | 0 - 1 | 8 | 0 - 13 | 0 - 1 | | | | |
| western ragweed | AMPS | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 39 | 0 - 3 | 8 | 0 - 24 | 0 - 3 | |
| western wallflower | ERCAC | 8 | 0 - 26 | 0 - 1 | 8 | 0 - 20 | 0 - 1 | | | | | | | |
| western yarrow | ACMIO | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 26 | 0 - 2 | 8 | 0 - 24 | 0 - 3 | |
| white prairie aster | SYFA | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | 8 | 0 - 13 | 0 - 1 | | | | |
| wild parsley | MUDI | 8 | 0 - 52 | 0 - 2 | 8 | 0 - 40 | 0 - 2 | | | | | | | |
| native forbs | 2FN | 8 | 0 - 78 | 0 - 3 | 8 | 0 - 60 | 0 - 3 | 8 | 0 - 26 | 0 - 2 | 8 | 0 - 8 | 0 - 1 | |
| introduced forbs | 2FI | | | | 8 | 0 - 80 | 0 - 4 | 8 | 0 - 65 | 0 - 5 | 8 | 0 - 80 | 0 - 10 | |
| SHRUBS | | 9 | 26 - 130 | 1 - 5 | 9 | 100 - 200 | 5 - 10 | 9 | 65 - 130 | 5 - 10 | 9 | 80 - 160 | 10 - 20 | |
| cactus | OPUNT | 9 | 0 - 26 | 0 - 1 | 9 | 0 - 40 | 0 - 2 | 9 | 0 - 65 | 0 - 5 | 9 | 0 - 80 | 0 - 10 | |
| fringed sagewort | ARFR4 | 9 | 0 - 52 | 0 - 2 | 9 | 0 - 60 | 0 - 3 | 9 | 0 - 65 | 0 - 5 | 9 | 0 - 80 | 0 - 10 | |
| rose | ROSA5 | 9 | 0 - 52 | 0 - 2 | 9 | 0 - 60 | 0 - 3 | 9 | 0 - 26 | 0 - 2 | | | | |
| other shrubs | 2SHRUB | 9 | 0 - 52 | 0 - 2 | 9 | 0 - 60 | 0 - 3 | 9 | 0 - 65 | 0 - 5 | 9 | 0 - 80 | 0 - 10 | |
| Annual Production lbs./acre | | | | | | | | | | | | | | |
| GRASSES & GRASS-LIKES | | | LOW | RV | HIGH | LOW | RV | HIGH | LOW | RV | HIGH | LOW | RV | HIGH |
| | | | 1750 - 2327 | -2990 | | 1110 - 1700 | -2190 | | 580 - 1105 | -1630 | | 350 - 560 | -870 | |
| FORBS | | | 125 - 195 | -275 | | 95 - 150 | -205 | | 60 - 98 | -135 | | 75 - 120 | -165 | |
| SHRUBS | | | 25 - 78 | -135 | | 95 - 150 | -205 | | 60 - 98 | -135 | | 75 - 120 | -165 | |
| TOTAL | | | 1900 - 2600 | -3400 | | 1300 - 2000 | -2600 | | 700 - 1300 | -1900 | | 500 - 800 | -1200 | |

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. 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 recurring 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 (DPC).” According to the United States Department of Agriculture (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.

Western Wheatgrass/Needlegrass Plant Community

Interpretations are based primarily on the Western Wheatgrass/Needlegrass Plant Community, which is considered to be climax. 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 85 percent grasses or grass-like plants, 10 percent forbs, and 5 percent woody plants. The community is dominated by cool-season grasses.

The major grasses include western wheatgrass, green needlegrass, needleandthread, and sideoats grama. Other grasses include blue grama, buffalograss, sedges, and porcupine grass. This plant community is extremely resilient and well adapted to the Northern Great Plains climatic conditions. The diversity in plant species allows for high drought tolerance. This is a sustainable plant community in regards to site/soil stability, watershed function, and biologic integrity.

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: SD6302

Growth curve name: Pierre Shale Plains, cool-season dominant, warm-season subdominant.

Growth curve description: Cool-season dominant, warm-season subdominant.

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 3 | 10 | 23 | 34 | 15 | 6 | 5 | 4 | 0 | 0 |

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

- Continuous seasonal grazing (grazing the same area at the same time of year every year) will convert the plant community to the *Western Wheatgrass/Blue Grama/Buffalograss Plant Community*. This would be typical of calving/lambing pastures where the unit is continuously utilized during the late winter through mid spring. This transition will result in decreased forage production and plant species diversity.

Western Wheatgrass/Blue Grama/Buffalograss Plant Community

This plant community evolved under continuous seasonal grazing (grazing the same area at the same time of year every year) or from over utilization during extended drought periods. The potential plant community is made up of approximately 80 percent grasses and grass-like species, 10 percent forbs, and 10 percent shrubs. Dominant grasses include western wheatgrass, blue grama, and buffalograss. Grasses of secondary importance include sideoats grama, sedge, green needlegrass, and needleandthread. Forbs commonly found in this plant community include cudweed sagewort, prairie coneflower, and western yarrow. A common shrub on this site is fringed sagewort, with the shrub canopy ranging from 0 to 10 percent.

When compared to the Western Wheatgrass/Needlegrass Plant Community, blue grama and buffalograss have increased, while green needlegrass and sideoats grama have decreased. The production of mid and tall warm-season grasses has also been reduced.

This plant community is moderately resistant to change. The herbaceous 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 is an estimate of the monthly percentages of total annual growth of the dominant species expected during an average year:

Growth curve number: SD6303

Growth curve name: Pierre Shale Plains, cool-season/warm-season codominant.

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

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 3 | 10 | 20 | 28 | 21 | 10 | 5 | 3 | 0 | 0 |

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

- Heavy continuous season-long grazing will shift this plant community to the *Blue Grama/Buffalograss Sod Plant Community*. Forage production, species diversity, and ground cover will decrease.
- Heavy continuous seasonal grazing (grazing at the same time of year every year) will convert this plant community to the *Blue Grama/Buffalograss Sod Plant Community*.
- Prescribed grazing will shift this plant community to the *Western Wheatgrass/Needlegrass Plant Community*. Moderate grazing pressure existing during the early spring (prior to May 1) and fall seasons (cool-season regrowth) with favorable growing conditions will move community towards the *Western Wheatgrass/Needlegrass Plant Community*.

Blue Grama/Buffalograss Sod

This plant community is the result of continuous season-long or continuous seasonal grazing and over utilization during extended drought periods. The potential plant community is made up of approximately 80 percent grasses and grass-like species, 10 percent forbs, and 10 percent shrubs.

Dominant grasses include blue grama and buffalograss. Grasses of secondary importance include sedge and western wheatgrass. Forbs commonly found in this plant community include wild parsley and scarlet globemallow. Fringed sagewort is a common shrub to this site. Shrub canopy ranges from 0 to 10 percent. When compared to the Western Wheatgrass/Needlegrass Plant Community, blue grama and buffalograss are dominant on this plant community. Cool-season grasses have decreased significantly. This vegetation state is very resistant to change. The herbaceous species present are well adapted to grazing; however, composition can be altered through long-term prescribed grazing.

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: SD6305

Growth curve name: Pierre Shale Plains, warm-season dominant.

Growth curve description: Warm-season dominant.

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 2 | 5 | 15 | 25 | 30 | 15 | 7 | 1 | 0 | 0 |

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

- Heavy continuous season-long grazing and/or frequent severe defoliation will likely move this plant community to the *Threeawn/Annuals Plant Community*.
- Mechanical renovation such as interseeding or chiseling will help improve the productivity of the site. This pathway may convert the plant community to a *Renovated Western Wheatgrass/Needlegrass/Blue Grama/Buffalograss* site. Proper grazing management must be included in order to derive the benefits of renovation. Heavy continuous season-long grazing will shift the community to a *Blue Grama/Buffalograss Sod*, but with renovation and prescribed grazing, the site can progress back toward a *Western Wheatgrass/Needlegrass/Blue Grama/Buffalograss* plant community.
- Long-term prescribed grazing may potentially convert the plant community to the *Western Wheatgrass/Blue Grama/Buffalograss Plant Community*, assuming an adequate seed/vegetative source is present. This could require significant time and input to achieve.

Threeawn/Annuals Plant Community

This plant community developed under continuous heavy grazing or other excessive disturbances (e.g., heavy use areas, defoliation by rodents, etc.) The potential plant community is made up of approximately 50 percent grasses and grass-like species, 10-25 percent forbs, and 5-25 percent shrubs. The dominant grasses include threeawn and annual brome grasses. Other grasses may include little bluestem, blue grama, buffalograss, sedges, and western wheatgrass. The dominant forbs include fetid marigold, cudweed sagewort, western ragweed, prostrate verbena, pussytoes, and other annual invader-like species. The dominant shrubs include fringed sagewort and cactus. This plant community is susceptible to invasion of Canada thistle and other nonnative species because of the relatively high percent of bare ground. Compared to the *Western Wheatgrass/Needlegrass Plant Community*, red threeawn, annual brome grasses, and percent of bare ground have increased. Western wheatgrass, needlegrasses, and other cool-season grasses and grass-like species have decreased as have the warm-season species including little bluestem, sideoats grama, blue grama, and buffalograss. Plant diversity is low (plant richness may be high, but areas are often dominated by a few species and evenness is lacking).

This plant community is difficult to return to the *Western Wheatgrass/Needlegrass Plant Community* because of the loss of plant diversity and overall soil disturbance. Soil erosion is potentially very high because of the bare ground and shallow rooted herbaceous plant community. Water runoff will increase and infiltration will decrease due to animal related soil compaction and loss of root mass due to low plant diversity and vigor. This plant community will require significant economic inputs and time to move towards another plant community. This movement is highly variable in its succession. This is due to the loss of diversity (including the loss of the seed bank), within the existing plant community, and the plant communities on adjacent sites. This community can be renovated to improve the production capability; however, if management changes are not made the vegetation could revert back to a threeawn/annual community.

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: SD6303

Growth curve name: Pierre Shale Plains, cool-season/warm-season codominant.

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

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 3 | 10 | 20 | 28 | 21 | 10 | 5 | 3 | 0 | 0 |

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

- Under long-term prescribed grazing, including adequate rest periods, this plant community will move through the successional stages eventually leading to the *Western Wheatgrass/Needlegrass Plant Community*. Depending on the slope, aspect, and size, and if adequate perennial plants exist, this change can occur more rapidly.

Renovated Sod Vegetation State

An altered vegetation community can be achieved through mechanical renovation. Renovation creates microrelief that alters the water cycle by increasing infiltration and decreasing runoff. The renovation reduces the sod-bound conditions, increasing the production potential. These factors favor cool-season species such as western wheatgrass, green needlegrass, and a variety of forbs.

With proper management after renovation, this plant community will have similar plant composition and growth curve characteristics as the Western Wheatgrass/Green Needlegrass and Western Wheatgrass/Buffalograss/Blue Grama Plant Communities. However, the production could be higher, depending on the degree of alteration. Proper grazing management must be implemented to maintain this plant community.

If this plant community is subjected to excessive disturbance after renovation (i.e., heavy continuous seasonal or season-long grazing, excessive defoliation, etc.) the plant community will be similar to the Blue Grama/Buffalograss Sod Plant Community in most respects. The main difference is the microrelief created by the renovation.

Non-Disturbed, Go-back, Introduced, or Invaded

This group includes four separate vegetation states that are highly variable in nature. They are derived through three distinct management scenarios, and are not related successional. Infiltration, runoff, and soil erosion varies depending on the vegetation present on the site.

The **Non-Disturbed** state develops from extended periods of exclusion by large herbivores, fire suppression, and lack of other surface disturbance. Plant litter accumulates in large amounts when this community first develops. Litter buildup reduces mature plant vigor and density, and seedling recruitment declines. Eventually litter levels become high enough that plant density decreases. Interspaces are commonly filled by annual forbs, annual grasses, and cryptogams. Typically, rhizomatous grasses form small colonies because of a lack of tiller stimulation. While many of the species present in the Western Wheatgrass/Green Needlegrass plant community also occur here, other species tend to increase or invade such as bluegrass, smooth brome, threeawn, cheatgrass, and sweetclover. This plant community can return to a plant community similar to the Western Wheatgrass/Green Needlegrass plant community with practices such as prescribed burning and/or long-term prescribed grazing.

The **Go-back Land** state can be reached whenever severe mechanical disturbance occurs (e.g., tilled and abandoned land, either past or present). During the early successional stages, the species that mainly dominate are annual grasses and forbs, later being replaced by both native and introduced perennials. The vegetation on this site varies greatly, sometimes being dominated by threeawn,

bluegrass, smooth brome, annual brome, crested wheatgrass, buffalograss, broom snakeweed, sweetclover, and nonnative thistles. Other plants that commonly occur on the site include western wheatgrass, deathcamas, prickly lettuce, maretail, kochia, foxtail, and sunflowers. Bare ground is prevalent due to the loss of organic matter and lower overall soil health.

The **Introduced** state is normally those areas seeded to crested wheatgrass, pubescent, intermediate wheatgrass, and alfalfa, or other introduced species. Refer to the associated Forage Suitability Group description for adapted species.

The **Invaded** state includes areas that have been invaded by species such as smooth brome, bluegrass, nonnative thistles, field bindweed, knapweeds, leafy spurge, hoary cress, and other introduced species.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

-- Under Development --

Western Wheatgrass/Needlegrass Plant Community:

Western Wheatgrass/Blue Grama/Buffalograss Plant Community:

Blue Grama/Buffalograss Sod Plant Community:

Excessive Litter Plant Community:

Threeawn/Annuals Plant Community:

Go-back Land, Introduced, Invaded Plant Community:

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

| Common Name | Cattle | Sheep | Horses | Deer | Antelope | Bison | Elk |
|----------------------------------|---------|---------|---------|---------|----------|---------|---------|
| Grasses & Grass-likes | | | | | | | |
| big 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 |
| 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 |
| buffalograss | U U D U | N U D U | U U D U | N U D U | N U D U | U U D U | U U D 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 |
| 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 |
| needleleaf 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 |
| plains 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 |
| 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 |
| 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 |
| sun 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 |
| threadleaf 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 |
| 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 |
| Forbs | | | | | | | |
| American vetch | 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 |
| biscuitroot | U D U U | U D D U | U D U U | U D D U | U D D U | U D U U | U D D U |
| 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 |
| deathcamas | 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 |
| deervetch | U U U U | U D D U | U U U U | U D D U | U D D U | U U U U | U D D U |
| dotted 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 |
| false boneset | U U D U | N D U N | U U D U | N D U N | N D U N | U U D U | N D U N |
| 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 |
| 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 |
| penstemon | U U U U | U P P U | U U U U | U P P U | U P P U | U U U U | U P P U |
| 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 |
| 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 |
| pussytoes | 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 |
| scarlet gaura | 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 |
| scarlet globemallow | U U D U | U D D U | U U D U | U D D U | U D D U | U U D U | U D D U |
| 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 |
| spiny phlox | U D U U | U P P U | U D U U | U P P U | U P P U | U D U U | U P P U |
| wavyleaf thistle | 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 |
| 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 |
| western wallflower | U D U U | N U U N | U D U U | N U U N | N U U N | U D U U | N U U N |
| western yarrow | 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 |
| white prairie aster | 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 |
| wild onion | U D U U | U D D U | U D U U | U D D U | U D D U | U D U U | U D D U |
| wild parsley | U D U U | U D D U | U D U U | U D D U | U D D U | U D U U | U D D U |
| Shrubs | | | | | | | |
| 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 |
| 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 |
| 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 |

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) |
|--|--|---------------------------|
| Western Wheatgrass/Green Needlegrass | 2600 | 0.71 |
| Western Wheatgrass/Blue Grama/Buffalograss | 2000 | 0.55 |
| Blue Grama/Buffalograss Sod | 1300 | 0.36 |
| Threeawn/Annuals | 800 | 0.22 |

*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. This site is dominated by soils in hydrologic groups B and C. Infiltration is generally moderate, and runoff potential varies from low to moderate 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 exception would be where shortgrasses form a strong sod and dominate the site. Dominance by blue grama, buffalograss, bluegrass, and/or smooth brome grass will result in reduced infiltration and increased runoff. Normally, 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, hiking, photography, bird watching, and other opportunities. The wide varieties of plants that bloom from spring until fall have an esthetic value that appeals to visitors.

Wood Products

No appreciable wood products are typically present on this site.

Other Products

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

Supporting Information

Associated Sites

(063AY011SD) – Clayey
(063AY017SD) – Shallow Clay
(063AY012SD) – Thin Upland
(063AY020SD) – Loamy Overflow

Similar Sites

(063AY020SD) – Loamy Overflow [more big bluestem; higher production]
(063AY011SD) – Clayey [more green needlegrass; less needleandthread]

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: April Boltjes, Range Management Specialist (RMS), NRCS; Stan Boltz, RMS, NRCS; Kent Cooley, Soil Scientist, NRCS; Rick Peterson, RMS, NRCS; and L. Michael Stirling, RMS, NRCS.

| <u>Data Source</u> | <u>Number of Records</u> | <u>Sample Period</u> | <u>State</u> | <u>County</u> |
|--------------------|--------------------------|----------------------|--------------|---------------|
| SCS-RANGE-417 | 1 | 1977 | SD | Mellette |

State Correlation

MLRA 63A lies entirely within SD, so no cross-state correlation has occurred.

Field Offices/Counties

| | | | | | |
|----------------|---------|----------------|----------|-----------------|-----------------|
| Dupree, SD | Ziebach | McIntosh, SD | Corson | Pierre, SD | Hughes/Stanley |
| Faith, SD | Meade | Mound City, SD | Campbell | Selby, SD | Walworth |
| Gettysburg, SD | Potter | Murdo, SD | Jones | Timber Lake, SD | Dewey |
| Kadoka, SD | Jackson | Onida, SD | Sully | Wall, SD | East Pennington |
| Kennebec, SD | Lyman | Philip, SD | Haakon | White River, SD | Mellette |

Relationship to Other Established Classifications

Level IV Ecoregions of the Conterminous United States: 43c – River Breaks and 43f – Subhumid Pierre Shale Plains.

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. 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 Type: Rangeland
MLRA: 63A – Northern Rolling Pierre Shale Plains

Loamy
R063AY010SD

Site Description Approval

SD, State Range Management Specialist

Date