

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Wet Land

Site ID: R063AY002SD

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



Physiographic Features

This site occurs on gently undulating to rolling sedimentary uplands and floodplains.

Landform: depression, oxbow, slough, basin

Aspect: N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	1600	2700
Slope (percent):	0	2
Water Table Depth (inches):	0	12
Flooding:		
Frequency:	Frequent	Frequent
Duration:	Brief	Long
Ponding:		
Depth (inches):	None	None
Frequency:	None	None
Duration:	None	None
Runoff Class:	High	Very 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

Wetland Description:	<u>System</u>	<u>Subsystem</u>	<u>Class</u>	<u>Subclass</u>
Cowardin, et al., 1979	Lacustrine	Littoral	Unconsolidated Shoreline	Permanently or Semi-permanently or Seasonally Flooded
OR:				
Cowardin, et al., 1979	Palustrine	N/A	Persistent Emergent Wetland	Permanently or Semi-permanently or Seasonally Flooded or Saturated

Representative Soil Features

The soils in this site are very poorly drained and formed in clayey alluvium. The surface layer is five to six inches thick. The surface texture is silty clay or silty clay loam, while the subsurface ranges

from clay to silty clay loam. This site should show no evidence of rills, wind scoured areas, or pedestalled plants. Water flow paths should not be present. The soil surface is stable and intact. These soils are not susceptible to water erosion. Low available water capacity coupled with high accumulations of sodium and slow permeability strongly influences the soil-water-plant relationship.

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

Parent Material Kind: alluvium
Parent Material Origin: shale, unspecified
Surface Texture: silty clay, silty clay loam
Surface Texture Modifier: none
Subsurface Texture Group: clayey
Surface Fragments ≤3" (% Cover): 0
Surface Fragments >3" (%Cover): 0
Subsurface Fragments ≤3" (% Volume): 0
Subsurface Fragments >3" (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	very poorly	very poorly
Permeability Class:	slow	slow
Depth to Bedrock (inches):	80	80
Electrical Conductivity (mmhos/cm)*:	0	8
Sodium Absorption Ratio*:	0	8
Soil Reaction (1:1 Water)*:	7.4	8.4
Soil Reaction (0.1M CaCl2)*:	NA	NA
Available Water Capacity (inches)*:	6	6
Calcium Carbonate Equivalent (percent)*:	0	15

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

Plant Communities

Ecological Dynamics of the Site:

The site developed under Northern Great Plains climatic conditions and included natural influence of large herbivores, occasional fire, and yearly flooding events. Changes will occur in the plant communities due to management actions and/or climatic conditions. Due to the nature of the soils, the site is considered highly variable but very stable. Under continued adverse impacts, a slow decline in vegetative vigor and composition will occur. Under favorable vegetative management treatments, the site can rapidly recover to the climax plant community. High variability of ponding levels and duration is the major cause of the fluctuating plant community. However, management can greatly influence the plant community dynamics during extended drought periods.

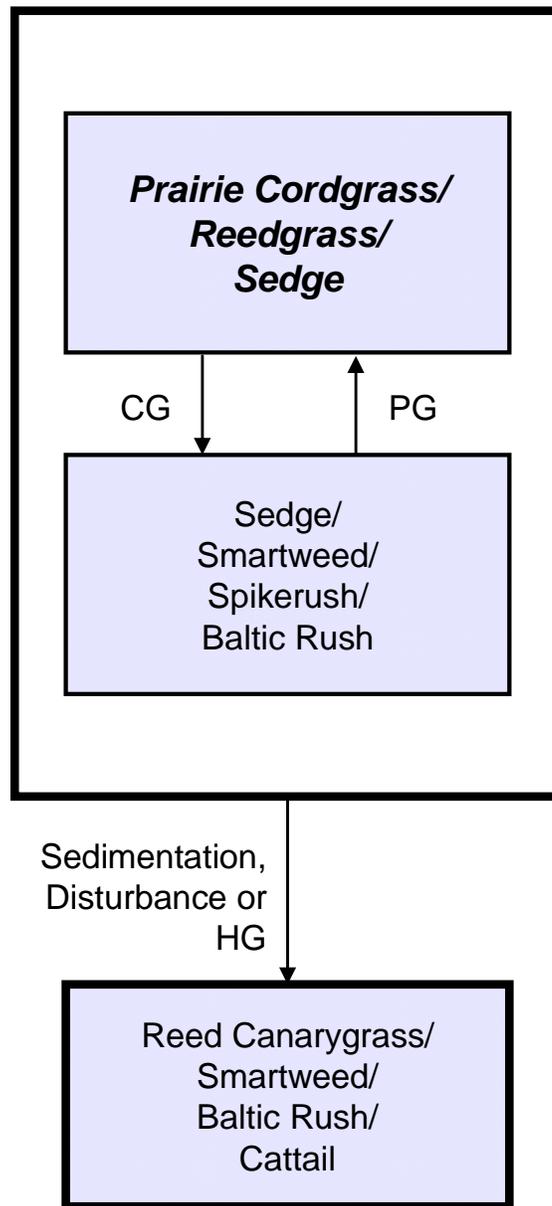
The plant community upon which interpretations are primarily based is the Prairie Cordgrass/ Reedgrass/Sedge Plant Community under normal precipitation periods. This community has been determined by study of rangeland relic areas, areas protected from excessive disturbance, and areas under long-term 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.

Continuous grazing without adequate recovery opportunities between grazing events over several years will cause this site to depart from the climax. Species such as reed canarygrass, spikerush, and Baltic rush will increase in frequency and density. Nonuse (rest) and lack of fire will cause litter

levels and plant decadence/mortality to increase. Cattails are greatly influenced by the fluctuating water regime and increase dramatically during above average precipitation cycles.

The following diagram illustrates the common plant communities and vegetation states commonly occurring on the site and the transition pathways between communities and states. The ecological processes will be discussed in more detail in the plant community descriptions following the diagram.

Plant Communities and Transitional Pathways



CG – Continuous grazing without adequate recovery periods;
HG – Heavy grazing; **LTPG** – Long-term prescribed grazing;
PG – Prescribed grazing with adequate recovery opportunity;
WR – Wetland restoration.

Plant Community Composition and Group Annual Production

COMMON/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Prairie Cordgrass/Reedgrass/Sedge		
			Group	lbs./acre	% Comp
GRASSES & GRASS-LIKES				4640 - 5510	80 - 95
TALL WARM-SEASON GRASS			1	1450 - 2610	25 - 45
prairie cordgrass	Spartina pectinata	SPPE	1	1450 - 2610	25 - 45
TALL COOL-SEASON GRASSES			2	870 - 1450	15 - 25
bluejoint reedgrass	Calamagrostis canadensis	CACA4	2	290 - 1160	5 - 20
northern reedgrass	Calamagrostis stricta ssp. inexpansa	CASTI3	2	290 - 1160	5 - 20
narrow reedgrass	Calamagrostis stricta ssp. stricta	CASTS5	2	0 - 580	0 - 10
reed canarygrass	Phalaris arundinacea	PHAR3	2	0 - 290	0 - 5
SEDGE			3	870 - 1450	15 - 25
Nebraska sedge	Carex nebrascensis	CANE2	3	290 - 870	5 - 15
Sartwell's sedge	Carex sartwellii	CASA8	3	290 - 870	5 - 15
woolly sedge	Carex pellita	CAPE42	3	116 - 580	2 - 10
fox sedge	Carex vulpinoidea	CAVU2	3	0 - 580	0 - 10
broom sedge	Carex scoparia	CASC11	3	0 - 580	0 - 10
OTHER GRASS-LIKES			4	116 - 464	2 - 8
green bulrush	Scirpus atrovirens	SCAT2	4	0 - 290	0 - 5
river bulrush	Schoenoplectus fluviatilis	SCFL11	4	0 - 290	0 - 5
spikerush	Eleocharis spp.	ELEOC	4	58 - 174	1 - 3
Baltic rush	Juncus balticus	JUBA	4	0 - 174	0 - 3
rush	Juncus spp.	JUNCU	4	0 - 174	0 - 3
other grass-likes		2GL	4	0 - 290	0 - 5
FORBS			5	290 - 580	5 - 10
arrowgrass	Triglochin palustre	TRPA6	5	0 - 58	0 - 1
blue skullcap	Scutellaria lateriflora	SCLA2	5	58 - 116	1 - 2
cattail	Typha latifolia	TYLA	5	0 - 174	0 - 3
curlytop knotweed	Polygonum lapathifolium	POLA4	5	58 - 116	1 - 2
cutleaf waterparsnip	Berula erecta	BEER	5	0 - 58	0 - 1
giant goldenrod	Solidago gigantea	SOGI	5	0 - 116	0 - 2
longbeak buttercup	Ranunculus longirostris	RALO2	5	0 - 58	0 - 1
New England aster	Symphotrichum novae-angliae	SYNO2	5	58 - 116	1 - 2
nodding beggartick	Bidens cernua	BICE	5	0 - 58	0 - 1
Pennsylvania smartweed	Polygonum pensylvanicum	POPE2	5	58 - 174	1 - 3
roughfruit amaranth	Amaranthus tuberculatus	AMTU	5	0 - 58	0 - 1
shrubby cinquefoil	Dasiphora floribunda	DAFL3	5	0 - 58	0 - 1
spotted water hemlock	Cicuta maculata	CIMA2	5	0 - 58	0 - 1
swamp milkweed	Asclepias incarnata	ASIN	5	58 - 116	1 - 2
swamp smartweed	Polygonum hydropiperoides	POHY2	5	58 - 174	1 - 3
water knotweed	Polygonum amphibium	POAM8	5	0 - 116	0 - 2
western dock	Rumex aquaticus	RUAQ	5	0 - 116	0 - 2
white panicle aster	Symphotrichum lanceolatum	SYLA6	5	58 - 116	1 - 2
native forbs		2FN	5	0 - 290	0 - 5
SHRUBS			6	58 - 406	1 - 7
false indigo	Amorpha fruticosa	AMFR	6	58 - 174	1 - 3
willow	Salix spp.	SALIX	6	0 - 290	0 - 5
other shrubs		2SHRUB	6	0 - 116	0 - 2

Annual Production lbs./acre	LOW	RV	HIGH
GRASSES & GRASS-LIKES	4500	5133	5620
FORBS	245	435	695
SHRUBS	55	232	485
TOTAL	4800	5800	6800

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	Prairie Cordgrass/ Reedgrass/Sedge			Sedge/Smartweed/ Spikerush/Baltic Rush			Reed Canarygrass/Smartweed/ Baltic Rush/Cattail		
		Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp
GRASSES & GRASS-LIKES										
TALL WARM-SEASON GRASS		1	1450 - 2610	25 - 45	1	0 - 450	0 - 10	1		
prairie cordgrass	SPPE	1	1450 - 2610	25 - 45	1	0 - 450	0 - 10			
TALL COOL-SEASON GRASSES		2	870 - 1450	15 - 25	2	225 - 675	5 - 15	2	400 - 1600	10 - 40
bluejoint reedgrass	CACA4	2	290 - 1160	5 - 20	2	0 - 450	0 - 10			
northern reedgrass	CASTI3	2	290 - 1160	5 - 20	2	0 - 450	0 - 10			
narrow reedgrass	CASTS5	2	0 - 580	0 - 10	2	0 - 135	0 - 3			
reed canarygrass	PHAR3	2	0 - 290	0 - 5	2	0 - 450	0 - 10	2	400 - 1600	10 - 40
SEDGE		3	870 - 1450	15 - 25	3	900 - 1800	20 - 40	3	80 - 600	2 - 15
Nebraska sedge	CANE2	3	290 - 870	5 - 15	3	225 - 1125	5 - 25	3	0 - 400	0 - 10
Sartwell's sedge	CASA8	3	290 - 870	5 - 15	3	225 - 1125	5 - 25	3	0 - 400	0 - 10
woolly sedge	CAPE42	3	116 - 580	2 - 10	3	90 - 900	2 - 20	3	0 - 320	0 - 8
fox sedge	CAVU2	3	0 - 580	0 - 10	3	0 - 675	0 - 15	3	0 - 200	0 - 5
broom sedge	CASC11	3	0 - 580	0 - 10	3	0 - 675	0 - 15	3	0 - 200	0 - 5
OTHER GRASS-LIKES										
green bulrush	SCAT2	4	0 - 290	0 - 5	4	0 - 360	0 - 8	4	0 - 400	0 - 10
river bulrush	SCFL11	4	0 - 290	0 - 5	4	0 - 360	0 - 8	4	0 - 400	0 - 10
spikerush	ELEOC	4	58 - 174	1 - 3	4	225 - 675	5 - 15	4	0 - 400	0 - 10
Baltic rush	JUBA	4	0 - 174	0 - 3	4	90 - 675	2 - 15	4	80 - 600	2 - 15
rush	JUNCU	4	0 - 174	0 - 3	4	0 - 360	0 - 8	4	0 - 400	0 - 10
other grass-likes	2GL	4	0 - 290	0 - 5	4	0 - 360	0 - 8	4	0 - 320	0 - 8
FORBS		5	290 - 580	5 - 10	5	450 - 900	10 - 20	5	600 - 1200	15 - 30
arrowgrass	TRPA6	5	0 - 58	0 - 1	5	0 - 45	0 - 1	5	0 - 40	0 - 1
blue skullcap	SCLA2	5	58 - 116	1 - 2	5	0 - 45	0 - 1			
cattail	TYLA	5	0 - 174	0 - 3	5	0 - 225	0 - 5	5	0 - 600	0 - 15
curlytop knotweed	POLA4	5	58 - 116	1 - 2	5	45 - 360	1 - 8	5	40 - 480	1 - 12
cutleaf waterparsnip	BEER	5	0 - 58	0 - 1	5	0 - 45	0 - 1	5	0 - 40	0 - 1
giant goldenrod	SOGI	5	0 - 116	0 - 2	5	0 - 135	0 - 3	5	0 - 200	0 - 5
longbeak buttercup	RALO2	5	0 - 58	0 - 1						
New England aster	SYNO2	5	58 - 116	1 - 2	5	45 - 180	1 - 4	5	40 - 400	1 - 10
nodding beggartick	BICE	5	0 - 58	0 - 1						
Pennsylvania smartweed	POPE2	5	58 - 174	1 - 3	5	90 - 450	2 - 10	5	80 - 600	2 - 15
roughfruit amaranth	AMTU	5	0 - 58	0 - 1	5	0 - 90	0 - 2	5	0 - 80	0 - 2
shrubby cinquefoil	DAFL3	5	0 - 58	0 - 1	5	0 - 45	0 - 1			
spotted water hemlock	CIMA2	5	0 - 58	0 - 1	5	0 - 90	0 - 2	5	0 - 80	0 - 2
swamp milkweed	ASIN	5	58 - 116	1 - 2	5	45 - 135	1 - 3	5	40 - 200	1 - 5
swamp smartweed	POHY2	5	58 - 174	1 - 3	5	90 - 450	2 - 10	5	80 - 600	2 - 15
water knotweed	POAM8	5	0 - 116	0 - 2	5	45 - 360	1 - 8	5	40 - 480	1 - 12
western dock	RUAQ	5	0 - 116	0 - 2	5	0 - 45	0 - 1			
white panicle aster	SYLA6	5	58 - 116	1 - 2	5	45 - 180	1 - 4	5	40 - 280	1 - 7
native forbs	2FN	5	0 - 290	0 - 5	5	0 - 225	0 - 5	5	0 - 400	0 - 10
introduced forbs	2FI				5	0 - 225	0 - 5	5	0 - 400	0 - 10
SHRUBS		6	58 - 406	1 - 7	6	0 - 450	0 - 10	6	0 - 400	0 - 10
false indigo	AMFR	6	58 - 174	1 - 3	6	0 - 45	0 - 1			
willow	SALIX	6	0 - 290	0 - 5	6	0 - 450	0 - 10	6	0 - 400	0 - 10
other shrubs	2SHRUB	6	0 - 116	0 - 2						
Annual Production lbs./acre			LOW RV HIGH			LOW RV HIGH			LOW RV HIGH	
GRASSES & GRASS-LIKES			4500 - 5133 - 5620			3335 - 3600 - 3805			2820 - 2900 - 3565	
FORBS			245 - 435 - 695			365 - 675 - 960			480 - 900 - 960	
SHRUBS			55 - 232 - 485			0 - 225 - 535			0 - 200 - 475	
TOTAL			4800 - 5800 - 6800			3700 - 4500 - 5300			3300 - 4000 - 5000	

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.

Prairie Cordgrass/Reedgrass/Sedge Plant Community

This plant community occurs during the more normal to drier precipitation/hydrology cycles. During these periods, grasses become more dominant in the plant community. Grasses and grass-likes will make up about 80-95 percent of the community, forbs make up 5-10 percent, and shrubs 1-7 percent. Dominant species are prairie cordgrass, bluejoint reedgrass, northern reedgrass, Nebraska sedge, and Sartwell’s sedge. Common forbs include cattail, Pennsylvania smartweed, and swamp smartweed. Shrubs familiar to the site are false indigo and willow.

The plant community is well adapted to the Northern Great Plains climatic conditions. It is a critical plant community, providing water and habitat for the surrounding area. The diversity in plant species provides a variety of habitats for wildlife. It is resistant to drought due to a dependable water supply. This is a sustainable plant community (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: SD6008

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

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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	4	11	19	23	20	12	6	5	0	0

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

- Continuous grazing without adequate recovery periods between grazing occurrences, will shift this community to the *Sedge/Smartweed/Spikerush/Baltic Rush Plant Community*.

Sedge/Smartweed/Spikerush/Baltic Rush Plant Community

This plant community developed with continuous grazing without adequate recovery periods between grazing events. This plant community is approximately 70-85 percent grasses and grass-like species, 10-20 percent forbs, and 0-10 percent shrubs. The plant community becomes dominated by grass-likes such as Nebraska sedge, Sartwell’s sedge, woolly sedge, spikerush, and Baltic rush. Forbs include Pennsylvania smartweed, swamp smartweed, and cattail.

When compared to the Prairie Cordgrass//Reedgrass/Sedge Plant Community, prairie cordgrass, northern reedgrass, bluejoint reedgrass, and Nebraska sedge have decreased. Low growing unpalatable sedges, Baltic rush, and cattails have increased. The abundant production and proximity to water make this plant community important for livestock and wildlife such as birds, mule deer, and

antelope. The plant community is stable and protected from excessive erosion. The biotic integrity of this plant community is usually intact. The watershed is usually functioning.

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: SD6306

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

Growth curve description: Cool-season dominant, lowland.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	6	15	20	26	17	9	4	3	0	0

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

- Sedimentation, disturbance, or heavy grazing will shift this plant community to the *Reed Canarygrass/Smartweed/Baltic Rush/Cattail Plant Community*.

Reed Canarygrass/Smartweed/Baltic Rush/Cattail Plant Community

This plant community develops from sedimentation occurring after a ponding or flooding event. When compared to the Prairie Cordgrass/Reedgrass/Sedge Plant Community, prairie cordgrass, northern reedgrass, bluejoint reedgrass, and narrow reedgrass have been virtually eliminated. Reed canarygrass, Baltic rush, spikerush, and bulrushes have increased.

A significant amount of production and diversity has been lost when compared to the Prairie Cordgrass/Reedgrass/Sedge Plant Community. Loss or reduction of native grasses, grass-like, and forbs has negatively impacted energy flow and nutrient cycling. It will take a relatively long time to restore this plant community back to the Prairie Cordgrass/Reedgrass/Sedge Plant Community with improved management alone. Renovation (mechanical and/or chemical inputs) is not recommended due to high salt content of the soil and saltgrass persistence.

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: SD6306

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

Growth curve description: Cool-season dominant, lowland.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	6	15	20	26	17	9	4	3	0	0

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

- No restoration pathway has been identified or is expected to occur.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

-- Under Development --

Prairie Cordgrass/Reedgrass/Sedge Plant Community:

Sedge/Smartweed/Spikerush/Baltic Rush Plant Community:

Reed Canarygrass/Smartweed/Baltic Rush/Cattail Plant Community:

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

Common Name	Cattle	Sheep	Horses	Deer	Antelope	Bison	Elk
Grasses & Grass-like							
Baltic rush	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N
bluejoint reedgrass	U P D U	N D U N	U P D U	N D U N	N D U N	U P D U	U P D U
broom sedge	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
fox sedge	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
green bulrush	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
narrow reedgrass	U P U D	N D U N	U P U D	N D U N	N D U N	U P U D	U P U D
Nebraska sedge	U P U D	U P N D	U P U D	U D U D	U D U D	U P U D	U P U D
northern reedgrass	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 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
reed canarygrass	U D U U	N N N N	U D U U	N N N N	N N N N	U D U U	U D U U
river 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
Sartwell's sedge	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
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
woolly sedge	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
Forbs							
arrowgrass	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T
blue skullcap	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
cattail	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
curlytop knotweed	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
cutleaf waterparsnip	U U U U	N U U N	U U U U	N U U N	U U U U	U U U U	N U U N
giant goldenrod	N N U N	N U U N	N N U N	N U U N	N U U N	N N U N	N N U N
longbeak buttercup	N N U N	N N N U	N N U N	N N U N	N N U N	N N U N	N N U N
New England aster	U U U D	U U P U	U U D U	U U P U	U U P U	U U D U	U U P U
nodding beggartick	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
Pennsylvania smartweed	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
roughfruit amaranth	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
shrubby cinquefoil	N N U N	N U D U	N N U N	N U D U	N U D U	N N U N	N U D U
spotted water hemlock	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
swamp milkweed	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
swamp smartweed	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
water knotweed	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
western dock	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 panicle 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
false indigo	N U U N	N U U N	N U U N	N U U N	N U U N	N U U N	N U U N
willow	P U D P	P U D P	P U D P	P U D P	U U U U	P U D P	P U D P

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)
Prairie Cordgrass/Reedgrass/Sedge	5800	1.59
Sedge/Smartweed/Spikerush/Baltic Rush	4500	1.23
Reed Canarygrass/Smartweed/Baltic Rush/Cattail	4000	1.10

*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 group D. Infiltration is very slow to slow and runoff potential is very high depending on slope and ground cover. In many cases, areas with greater than 75 percent ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where shortgrasses form a strong sod and dominate the site. Areas where ground cover is less than 50 percent have the greatest potential to have reduced infiltration and higher runoff (refer to Section 4, NRCS National Engineering Handbook for runoff quantities and hydrologic curves).

Recreational Uses

This site provides hunting, hiking, photography, bird watching, and other opportunities. The wide varieties of plants that bloom from spring until fall have an aesthetic 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

Loamy Overflow (R063AY020SD), Subirrigated (R063AY003SD), Saline Lowland (R063AY007SD).

Similar Sites

(R063AY001SD) – Shallow Marsh [lesser amounts of prairie cordgrass, bulrush and spikerush; higher production]

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	0			

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 Description Approval

SD, State Range Management Specialist

Date