FORAGE SUITABILITY GROUP
WET

FSG No.: G055BY900ND

Major Land Resource Area: 55B - Central Black Glaciated Plains

Physiographic Features

The soils in this group are found in swales and depressions on flood plains, glacial lake and outwash plains, upland depressions and swales, and on gently sloping side slopes of streams.

	Minimum	Maximum
Elevation (feet):	980	1970
Slope (percent):	0	3
Flooding:		
Frequency:	None	Frequent
Duration:	None	Long
Ponding:		
Depth (inches):	0	12
Frequency:	None	Frequent
Duration:	None	
Runoff Class:	Negligible	Medium

Climatic Features

This group occurs in a mid-continental climate characterized by wide seasonal temperature and precipitation fluctuations and extremes.

Annual precipitation varies widely from year to year in MLRA 55B. Average annual precipitation for all climate stations listed below is about 19 inches. About 78 percent of that occurs during the months of April through September. On average, there are about 28 days with greater than .1 inches of precipitation during the same timeframe. Precipitation is lowest in the northwest and highest in the south in the MLRA.

Average annual snowfall ranges from 25 inches at Forman, North Dakota (ND), to 37 inches at Columbia, South Dakota (SD). Snow cover at depths greater than 1 inch range from 32 days at Petersburg, ND, to 98 days at Gackle, ND.

Average July temperatures are about 71^0F and average January temperatures are about 7^0F. Recorded temperature extremes in the MLRA during the years 1961 to 1990 are a low of -39 at both Petersburg and Oakes in ND, and a high of 114 recorded at Mellette, SD. The MLRA lies in USDA Plant Hardiness Zones 3b and 4a.

At Aberdeen, SD, the average annual wind speeds are about 11 mph. The highest wind speeds occur during March through May, but average monthly wind speeds do not vary significantly throughout the year. It is cloudy about 163 days a year. Average morning relative humidity in June is about 85 percent and average afternoon humidity is 60 percent.

The climate data listed in the tables below represent high and low ranges and averages for the climate stations and dates listed. For additional climate data, access the National Water and Climate Center at http://www.wcc.nrcs.usda.gov.

	From	To
Freeze-free period (28 deg)(days): **(9 years in 10 at least)**	115	137
Last Killing Freeze in Spring (28 deg): **(1 year in 10 later than)**	May 28	May 14
Last Frost in Spring (32 deg): **(1 year in 10 later than)**	Jun 06	May 23
First Frost in Fall (32 deg): **(1 year in 10 earlier than)**	Aug 29	Sep 10
First Killing Freeze in Fall (28 deg): **(1 year in 10 earlier than)**	Sep 08	Sep 21

	From	To
Length of Growing Season (32 deg)(days): (9 years in 10 at least)	92	116
Growing Degree Days (40 deg):	3389	4402
Growing Degree Days (50 deg):	1852	2558
Annual Minimum Temperature:	-35	-25
Mean annual precipitation (inches):	16	21

Monthly precipitation (inches) and temperature (F):

2 years in 10:	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Precip. Less Than	0.24	0.13	0.30	0.63	1.08	1.72	1.30	0.94	0.76	0.23	0.18	0.24
Precip. More Than	0.60	0.79	2.10	3.58	4.09	5.07	3.66	4.02	3.07	1.92	1.14	0.74
Monthly Average:	0.50	0.43	1.02	1.89	2.41	3.39	2.65	2.27	1.94	1.18	0.57	0.46
Temp. Min.	-8.2	-2.7	11.6	28.1	39.9	50.0	54.0	51.2	40.8	30.3	15.0	-2.0
Temp. Max.	21.8	28.2	41.0	58.2	70.9	80.0	87.3	85.5	74.0	61.5	42.1	26.2
Temp. Avg.	7.4	13.6	26.9	42.8	55.7	65.4	71.0	68.7	57.6	45.8	28.3	12.9

Climate Station	**Location**	**From**	**To**
ND2482	Edgeley, ND	1961	1990
ND2605	Oaks, ND	1961	1987
ND2605	Ellendale, ND	1961	1987
ND2949	Fessenden, ND	1961	1990
ND3117	Forman, ND	1961	1990
ND3287	Fullerton, ND	1961	1990
ND3309	Gackle, ND	1961	1990
ND4343	Hurdsfield, ND	1961	1990
ND4413	Jamestown, ND	1961	1990
ND4937	La Moure, ND	1961	1990
ND5764	McVille, ND	1961	1990
ND7027	Petersburg, ND	1961	1990
ND8937	Valley City, ND	1961	1990
SD0020	Aberdeen, SD	1961	1990
SD1873	Columbia, SD	1961	1990
SD5456	Mellette, SD	1961	1990

Soil Interpretations

This group consists of poorly drained, coarse to fine textured soils. They are ponded during a portion of the year or have a water table that comes to or near the surface during part of the growing season.

Drainage Class:	Poorly drained	To	Poorly drained
Permeability Class: (0 - 40 inches)	Slow	To	Rapid
Frost Action Class:	Moderate	To	High

	Minimum	**Maximum**
Depth:	72	
Surface Fragments >3" (% Cover):	0	3
Organic Matter (percent): (surface layer)	1.0	10.0
Electrical Conductivity (mmhos/cm): (0 - 24 inches)	0	8
Sodium Absorption Ratio: (0 - 12 inches)	0	15
Soil Reaction (1:1) Water (pH): (0 - 12 inches)	5.6	8.4

	Minimum	Maximum
Available Water Capacity (inches): (0 - 60 inches)	5	
Calcium Carbonate Equivalent (percent): (0 - 12 inches)	0	28

Adapted Species List

The following forage species are considered adapted to grow on the soils in this group. Additional information concerning plant characteristics of a number of the listed species as well as individual cultivars of many of those species can be accessed on the web at http://plants.usda.gov/.

Cool Season Grasses		**Warm Season Grasses**	
Creeping foxtail	G	Prairie cordgrass	G
Dahurian wildrye	F	Switchgrass	F
Meadow bromegrass	F		
Reed canarygrass	G	**Legumes**	
Western wheatgrass	F	Strawberry clover	F

G - Good adaptation for forage production on this group of soils in this MLRA
F - Fair adaptation but will not produce at its highest potential

Production Estimates

Production estimates listed here should only be used for making general management recommendations. Onsite production information should always be used for making detailed planning and management recommendations.

The high forage production estimates listed below are based on dense, vigorous stands of climatically adapted, superior performing cultivars. They are properly fertilized for high yields and pest infestations are kept below economic thresholds. Mechanical harvests are managed to maintain stand life by cutting at appropriate stages of maturity and harvest intervals. If grazed, optimum beginning and ending grazing heights are adhered to. Adequate time is allowed for plant recovery before entering winter dormancy under both uses.

The production estimates listed below represent total annual above ground plant production on an air-dry-matter basis. Estimates of hay and grazing yields can be calculated from these numbers by multiplying them by a harvest efficiency. A 70 percent harvest efficiency is commonly used when converting to hay yields. Pasture harvest efficiency is highly dependent on the grazing management system applied, ranging from 25 to 50 percent.

Forage Crop	**Management Intensity**	
	High	**Low**
	(lbs/ac)	**(lbs/ac)**
Creeping foxtail	8200	4000
Reed Canarygrass	9400	4500

Forage Growth Curves

Growth curves estimate the seasonal distribution of growth of the various forage crops. They indicate when the forages may be available for grazing or mechanical harvest.

Growth Curve Number: ND0002
Growth Curve Name: Cool season grass
Growth Curve Description: Cool season grass

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	40	35	10	5	5	0	0	0

Growth Curve Number: ND0003
Growth Curve Name: Warm season grass
Growth Curve Description: Warm season grass

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	0	10	40	35	15	0	0	0	0

Soil Limitations

The primary limitation for these soils is wetness, which may severely limit species selection, delay planting and harvesting of forage crops or result in wheel track ruts or livestock poach marks from hooves. The result can be soil compaction, injury to plants, poor soil aeration affecting plant growth, and problems with movement of livestock and machinery. Many of the soils in this group are subject to flooding or ponding that will adversely impact forage production when it occurs during the growing season. The time period plants are under water and the soil temperature while it occurs are important for the survival of forage crops. Dormant forages are little affected by inundation unless the water turns to ice.

Management Interpretations

When establishing new stands or renovating older stands select species that are tolerant of poorly and very poorly drained soils. Excluding livestock and machinery during extended periods of soil wetness will reduce poaching, rutting, and soil compaction.

Pasture and hayland can include considerations for wildlife. Delaying grazing on portions of the pasture or rotating pastures will allow nest initiation of grassland nesting birds or species of concern. Nest initiation of most grassland nesting birds occurs from April 15 to June 1. Delaying haying until after July 15 allows for most species to fledge their young. Consider planting species with later maturity to allow for harvesting after nests have fledged. Avoid mowing around the field. Mow back and forth or from the inside to the outside of the field. Consider using flushing bars on swathers and mowers.

FSG Documentation

Similar FSGs:

FSG ID	FSG Narrative
G55BY895ND	Saline soils have elevated levels of salinity that are detrimental to plant

Inventory Data References

Agriculture Handbook 296-Land Resource Regions and Major Land Resource Areas
Natural Resources Conservation Service (NRCS) National Water and Climate Center data
USDA Plant Hardiness Zone maps
National Soil Survey Information System (NASIS) for soil surveys in North Dakota and South Dakota counties in MLRA 55B
North Dakota NRCS Field Office Technical Guide
NRCS South Dakota Technical Guide
NRCS National Range and Pasture Handbook
Various Agricultural Research Service, Cooperative Extension Service, and NRCS research trials for plant adaptation and production.

State Correlation

This site has been correlated with the following states: North Dakota and South Dakota

Forage Suitability Group Approval

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