FORAGE SUITABILITY GROUP

Organic Soils in Depressions and on Flood Plains

FSG No.: G155XB645FL

Major Land Resource Area (MLRA 155): Southern Florida Flatwoods

Soil Series List

Due to the large list of map units in this group, please refer to Appendix 1.

- Bluff (FL109)
- Brighton
- Canova
- Chobee
- Dania
- Denaud
- Gator
- Hontoon
- Kaliga
- Lauderhill
- Nittaw
- Okeechobee
- Okeelanta
- Pahokee
- Plantation
- Samsula
- Sanibel
- Scoggin
- Shenks
- Tequesta
- Terra Ceia
- Tomoka

Adapted Species List

The following native forage species are considered adapted to grow on the soils in this group at their natural pH levels. All introduced grasses will need native pH raised to min. 5.5 (unless noted) for best production. Consult with state extension service for current cultivar recommendations (http://agronomy.ifas.ufl.edu/foragesofflorida/).

Perennial Species:

Grasses

Warm season (Introduced)

- Limpograss (*Hemarthria altissima*)
- St. Augustinegrass (*Stenotaphrum secundatum*, south of I-4 only)

Warm season (Native)

- Maidencane (*Panicum hemitomon*)
- Blue Maidencane (*Amphicarpum muhlenbergianum*)

Annual Species:

Grasses

Warm season

- Japanese Millet (*Echinochloa esculenta*)

Legumes

Warm season

- Aeschynomene (*Aeschynomene americana*)

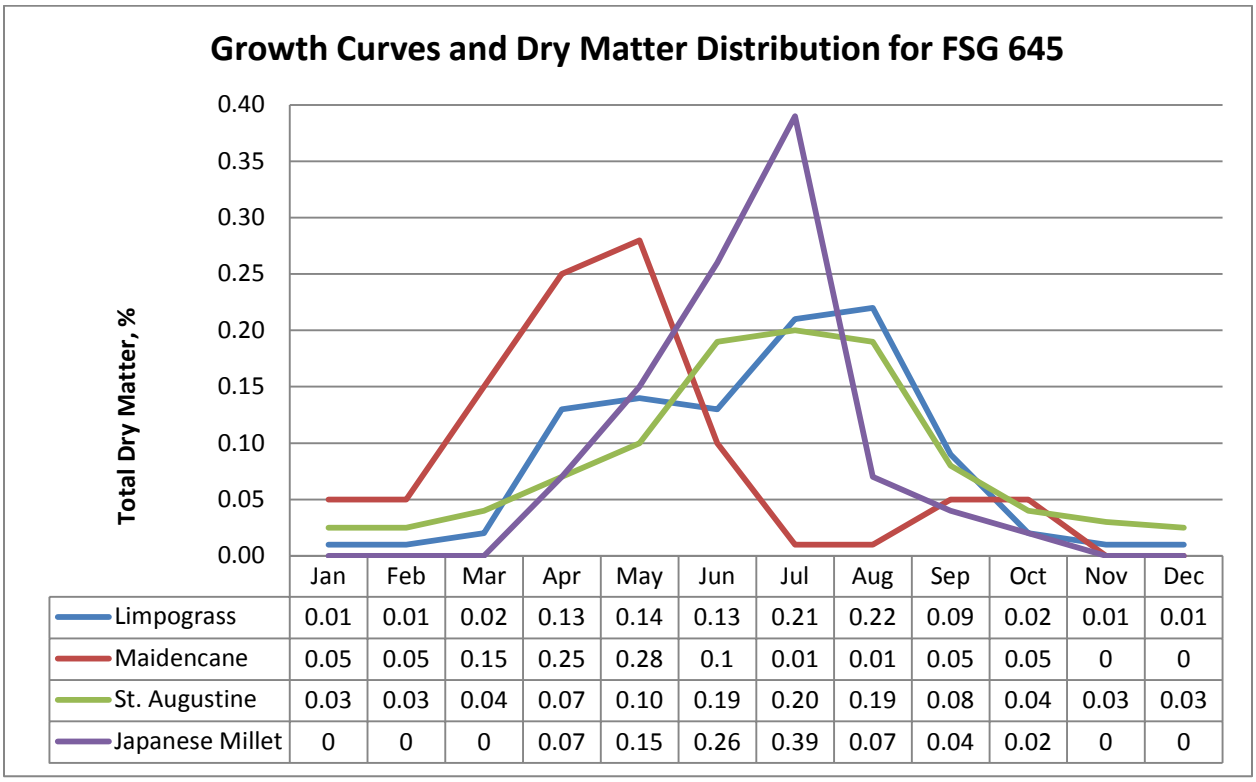
Seasonal and Total Production Estimates

Unless previously drained, soils in this FSG have very few forage species adapted to their seasonal high water table (1 to 2 feet above the soil surface). St. Augustinegrass has proved to be very productive on these organic soils south of I-4.

Expected Range in Dry Matter Production and Animal Unit Months (AUM) for Different Forages

Forage	Range in Dry Matter, lbs/acre		Range in AUM/acre†	
Limpograss (≈400 lb N/acre)[4,6]	8,000	13,000	5.1	8.2
Maidencane[1]#	5,000	6,700	3.2	4.3
Blue Maidencane[1]#	2,100	2,500	1.3	1.6
St. Augustinegrass[2,3]	14,000	16,000	8.9	10.1
Aeschynomene[5]	2,000	3,000	1.3	1.9

†Animal Unit Month based on 50% grazing efficiency and 2.6% intake per day.
‡Superscript numbers refer to references.
#Dry matter estimated based on the assumption air dried yield in reference had ≈16% moisture.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limpograss	0.01	0.01	0.02	0.13	0.14	0.13	0.21	0.22	0.09	0.02	0.01	0.01
Maidencane	0.05	0.05	0.15	0.25	0.28	0.1	0.01	0.01	0.05	0.05	0	0
St. Augustine	0.03	0.03	0.04	0.07	0.10	0.19	0.20	0.19	0.08	0.04	0.03	0.03
Japanese Millet	0	0	0	0.07	0.15	0.26	0.39	0.07	0.04	0.02	0	0

Physiographic Features

Dominantly very deep, nearly level, very poorly drained soils formed in organic material or organic material over sandy, loamy, or clayey marine deposits or alluvial deposits. These soils are on flats or depressions of flood plains or in depressions of marine terraces. Diagnostic subsurface horizons are absent. The organic matter content of the surface layer is dominantly very high. Unless limed, the reaction in the surface layer ranges from extremely acid to slightly alkaline.

Climatic Features

Freeze-free period (>28° F 9 years in 10 at least): averages 337 d (range 290-365 d)

Length of growing season (>32° F 9 years in 10 at least): averages 309 d (range 253-365 d)

Annual minimum temperature (° F in month of January): average 50.2 (range 45.2-59.2)

USDA Plant Hardiness Zone:
9a (20-25° F, Ocala)
9b (25-30° F, Orlando)
10a (30-35 °F, Ft. Myers)

Mean annual precipitation (inches): averages 51.89 (range 45.66-69.53)

Soil Properties

Percent Slope: 0 to 2 percent

Surface Texture: Muck, mucky peat

Sand Content of Surface Layer: Less than 5 percent

Clay Content of Surface Layer: Less than 5 percent

Organic Matter Content of Surface Layer: 20 to 90 percent

Cation Exchange Capacity of Surface Layer (meq/100g): 58.9 to 195.1

Effective Cation Exchange Capacity of Surface Layer (meq/100g): 6.2 to 92.1

Bulk Density of Surface Layer (g/cc): 0.15 to 1.05

Saturated Hydraulic Conductivity of Surface Layer: Moderate to rapid

Soil Reaction of Surface Layer: 3.5 to 7.8

Available Water Capacity (0 to 30 inches): 2 to 14.4 inch per inch

Depth to Sandy or Loamy Material: Dominantly greater than 16 inches, but ranges to 5 inches

Depth to Bedrock: Dominantly greater than 80 inches. A few members have bedrock at less than 80 inches

Drainage Class (Agronomic): Very poorly

Depth to Seasonal High Water Table (during wet periods): 1 to 2 feet above the surface

Flooding: If flooded, frequent or occasional with brief to very long duration

Ponding: If ponded, long or very long duration

Monthly precipitation (inches) and temperature (°F):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precip avg	2.70	2.59	3.37	2.39	3.90	7.26	6.98	7.14	6.75	3.50	2.66	2.24
Avg Min	50.2	51.4	55.7	59.6	65.5	70.8	72.3	72.7	71.6	63.9	58.9	53.0
Avg Temp	62.3	63.5	67.8	70.5	77.1	81.1	82.0	82.3	81.1	75.8	69.6	63.9
Avg Max	72.7	74.4	78.6	82.7	87.5	90.2	91.5	91.3	89.5	84.8	79.2	74.0

Climate Station Locations (averages from 1971 to 2000; see Appendix 2)

FSG Documentation

Inventory Data References:

1. --------. 1987. Range management for important native grasses of Florida. Gainesville, FL, USA: US Department of Agriculture, Natural Resources Conservation Service. 168 p.

2. Enzenwa, I. V., R.M. Muchovej, F.M. Pate, and J. Vendramini. 2011. Forage grasses for Florida's organic soils. Gainesville, FL, USA: University of Florida, Institute of Food and Agricultural Sciences. SS-AGR-71. Available at: http://edis.ifas.ufl.edu/pdffiles/AA/AA25500.pdf. Accessed 19 December 2012.

3. Haines, C.E, H.L. Chapman, Jr., R.J. Allen, Jr., and R.W. Kidder. 1965. Roselawn St. Augustinegrass as a perennial pasture forage for organic soils. Gainesville, FL, USA: University of Florida, Institute of Food and Agricultural Sciences, Agriculture Experiment Station. Bulletin 689. 19 p.

4. Kalmbacher, R.S., P.H. Everett, F.G. Martin, K.H. Quesenberry, E.M. Hodges, O.C. Ruelke, and S.C. Schank. 1987. Yield and persistence of perennial grasses at Immokalee, Florida: 1981 to 1984. Gainesville, FL, USA: University of Florida, Institute of Food and Agricultural Sciences, Agriculture Experiment Station. Bulletin 865. Available at: http://ufdc.ufl.edu/UF00027614/00001?search=kalmbacher. Accessed 17 December 2012.

5. Mislevy, P., R.S. Kalmbacher, and F.G. Martin. 1981. Cutting management of the tropical legume American jointvetch. Agronomy Journal 73:771-775 Available at: https://www.agronomy.org/publications/aj/abstracts/73/5/AJ0730050771. Accessed 17 December 2012.

6. Newman Y.C., A. Agyin-Birikorang, M.B. Adjei, J.M. Silveira, J.M.B. Vendramini, J.E. Rechcigl, and L.E. Sollenberger. 2009. Nitrogen fertilization effect on phosphorus remediation potential of three perennial warm-season forages. Agronomy Journal 101:1243-1248. Available at: https://www.soils.org/publications/aj/pdfs/101/5/1243. Accessed 19 December 2012.

State Correlation: (NA)

Forage Suitability Group Approval:

Greg Hendricks, State Resource Conservationist

Tom Weber, State Soil Scientist

FL NRCS
December 2012

Appendix 1: Map Unit List

Bakersville muck†	Okeelanta muck
Bluff sandy clay loam, frequently flooded (FL109)‡	Okeelanta muck, depressional
Brighton muck	Pahokee muck
Brighton, Samsula, and Sanibel mucks	Plantation muck
Canova and Terra Ceia mucks	Plantation muck, drained
Canova muck	Samsula and Hontoon soils, depressional
Chobee muck	Samsula muck
Chobee muck, depressional	Samsula muck, depressional
Dania muck	Sanibel muck
Dania muck, drained*	Sanibel muck, depressional
Denaud muck	Sanibel muck, drained
Denaud-Gator mucks	Shenks muck, frequently flooded
Gator muck	Tequesta muck
Gator muck, depressional	Tequesta muck, drained
Hontoon muck	Terra Ceia muck
Hontoon mucky peat	Terra Ceia muck, depressional
Kaliga muck	Terra Ceia muck, drained
Kaliga muck, frequently flooded	Terra Ceia muck, frequently flooded
Lauderhill muck	Tomoka muck
Lauderhill muck, drained*	Plantation muck
Nittaw muck	Plantation muck, drained
Nittaw muck, occasionally flooded	Samsula and Hontoon soils, depressional
Okeechobee muck	Samsula muck
Okeelanta and Dania soils, depressional	Samsula muck, depressional

†Note: Some members do not identify flooding or depressional in the map unit name but are subject to flooding or ponding. In these cases, please refer to the water features data on the Web Soil Survey or Soil Data Mart.

‡Note: Some members do not have muck in the name, but have muck on the surface. Information in parenthesis refers to county or soil survey code where map unit occurs.

***Note: Some members of this group have been artificially drained.**

Appendix 2: Climate Station Locations		
COOP ID (FL=08)	**Location**	**County**
8942	Titusville	Brevard
3163	Fort Lauderdale	Broward
7397	Punta Gorda	Charlotte
2850	Everglades	Collier
4210	Immokalee	Collier
228	Arcadia	DeSoto
5895	Moore Haven Lock	Glades
9401	Wauchula	Hardee
1654	Clewiston US Engin.	Hendry
2298	Devils Garden	Hendry
4662	La Belle	Hendry
236	Archbold Biol. Station	Highlands
369	Avon Park	Highlands
7205	Plant City	Hillsborough
8788	Tampa Intl. Air.	Hillsborough
9214	Vero Beach Muni. Air.	Indian River
9219	Vero Beach	Indian River
1641	Clermont	Lake
5076	Lisbon	Lake
3186	Fort Myers	Lee
6880	Parrish	Manatee
8620	Stuart	Martin
2137	Fort Drum	Okeechobee
6485	Okeechobee	Okeechobee
6628	Orlando Intl. Air.	Orange
4625	Kissimmee	Osceola
611	Belle Glade Exp. Stn.	Palm Beach
1276	Canal Point USDA	Palm Beach
5182	Loxahatchee	Palm Beach
9525	West Palm Beach Intl. Air.	Palm Beach
7851	St. Leo	Pasco
478	Bartow	Polk
4707	Lake Alfred Exp Stn	Polk
4797	Lakeland	Polk
5973	Mountain Lake	Polk
9707	Winter Haven	Polk
1978	Crescent City	Putnam
2915	Federal Point	Putnam
6753	Palatka	Putnam
6065	Myakka River State Park	Sarasota
9176	Venice	Sarasota
7982	Sanford Orlando	Seminole
3874	Hastings ARC	St. Johns
7826	St. Augustine WFOY	St. Johns
3207	Fort Pierce	St. Lucie
1163	Bushnell	Sumter
2158	Daytona Beach Inter. Air.	Volusia
2229	Deland	Volusia