FORAGE SUITABILITY GROUP

Sandy Soils on Strongly Sloping to Steep Side Slopes of Mesic Uplands

FSG No.: G138XA123FL

Major Land Resource Area (MLRA 138):

Atlantic Coast Flatwoods

Map Unit List

Wampee-Blanton complex, 12 to 20 percent slopes
Wampee-Blanton complex, 12 to 35 percent slopes
Wampee-Blanton complex, 5 to 12 percent slopes
Wampee-Blanton complex, 8 to 12 percent slopes

Adapted Species List

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

Perennial Species:

Grasses

Warm season (Introduced)

- Bahiagrass (*Paspalum notatum*; pH 5.0-6.5)
- Bermudagrass (*Cynodon dactylon*)

Warm season (Native)

- Chalky Bluestem (*Andropogon virginicus* var. *glaucus*)
- Big Bluestem (*Andropogon gerardii*)
- Splitbeard Bluestem (*Andropogon ternarius*)
- Yellow Indiangrass (*Sorghastrum nutans*)
- Switchgrass (*Panicum virgatum*)

Legumes

Warm season (Introduced)

- Rhizoma Perennial Peanut (*Arachis glabrata*; pH 5.8-7.0)

Annual Species:

Annual species are not recommended due to erosion hazard associated with steep slope.

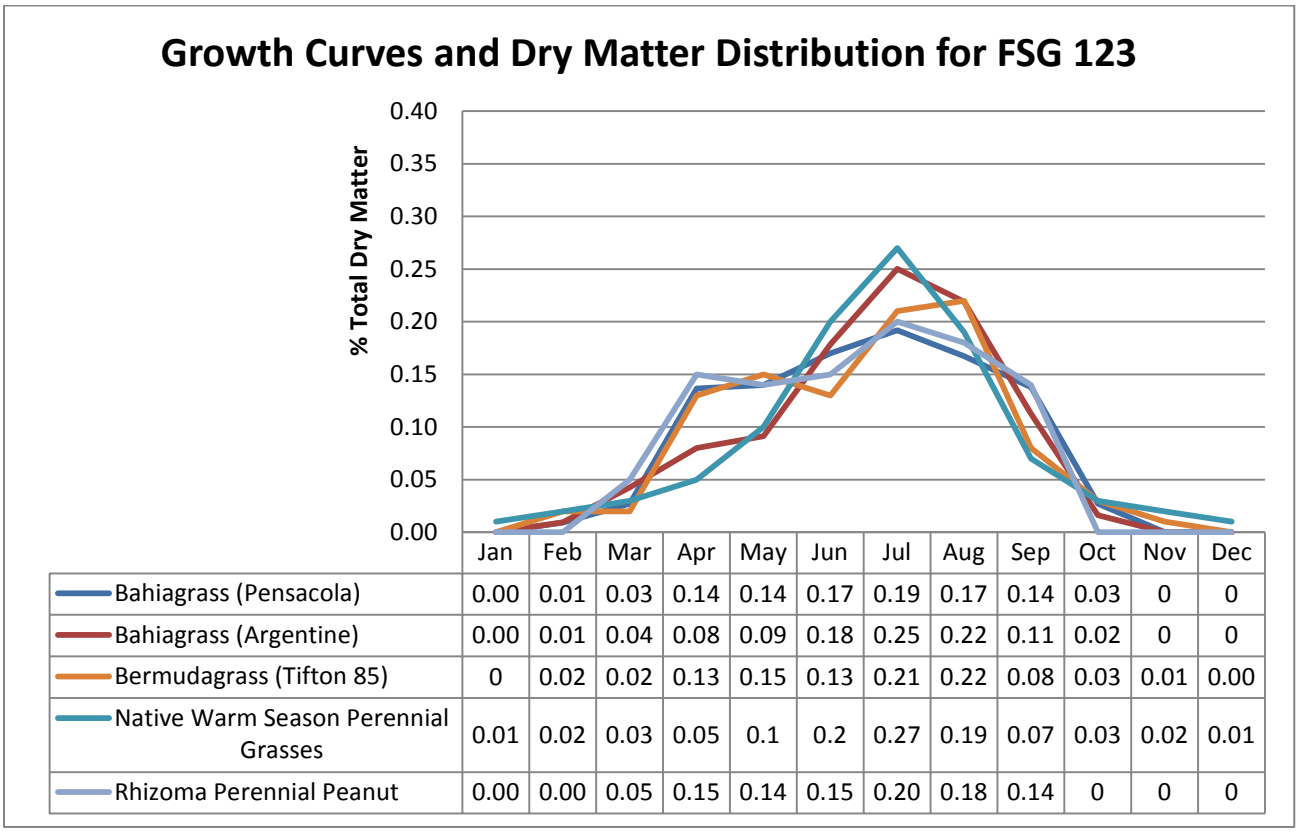
Seasonal and Total Production Estimates

Forage production should be similar to FSG G138XA121FL because the surface texture and seasonal high water table are similar, but strong slopes (predominantly 8-12 percent) will reduce rainfall infiltration and increase surface runoff compared to FSG G138XA121FL. Thus forage yields should more consistently be at the lower end of the range listed. As with FSG G138XA121FL, total annual production is driven largely by rainfall and yields can increase by > 1,000 lbs/acre in years with above average rainfall. However greatly reduced production and even stand loss associated with over grazing can occur in years with below average rainfall. Irrigation is not recommended for these soils due to poor water holding capacity, steep slopes, decreased water infiltration, and increased soil erosion potential. Establishment of both annual and perennial warm season forages maybe delayed due to limited rainfall in the spring and short term drought periods in the summer months. In general, the growth curve for all warm season species still weighted more towards the later part of the growing season. Although not recommended due to erosion concerns, annual forages should only be used when no-till or overseeding existing sod is an option. See species list and discussion for FSG G138XA121FL for annual species.

Expected Range in Dry Matter Production and Animal Unit Months (AUM) for Different Forages†				
Forage	**Range in Dry Matter Yield, lb/acre**		**Range in AUM/acre‡**	
Bahiagrass (0 lb N/acre)[4]#	2,350	3,200	1.5	2.0
Bahiagrass (60 lb N/acre)[4,6]	3,750	4,700	2.4	3.0
Bermudagrass (400 lb N/acre)[3]	13,125	18,750	8.3	11.9
Switchgrass, Alamo[1]	7,000	7,500	4.4	4.7
Rhizoma Perennial Peanut, Florigraze[2,5]	6,500	9,400	4.1	5.9

†Production data based on a 25% decrease from FSG G138XA121FL.
‡Animal Unit Month based on 50% grazing efficiency and 2.6% intake per day.
#Superscript numbers refer to references.

Production Curves:



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bahiagrass (Pensacola)	0.00	0.01	0.03	0.14	0.14	0.17	0.19	0.17	0.14	0.03	0	0
Bahiagrass (Argentine)	0.00	0.01	0.04	0.08	0.09	0.18	0.25	0.22	0.11	0.02	0	0
Bermudagrass (Tifton 85)	0	0.02	0.02	0.13	0.15	0.13	0.21	0.22	0.08	0.03	0.01	0.00
Native Warm Season Perennial Grasses	0.01	0.02	0.03	0.05	0.1	0.2	0.27	0.19	0.07	0.03	0.02	0.01
Rhizoma Perennial Peanut	0.00	0.00	0.05	0.15	0.14	0.15	0.20	0.18	0.14	0	0	0

Physiographic Features

Dominantly very deep, strongly sloping to very steep, well drained or moderately well drained soils formed in sandy marine deposits. These soils are on back slopes of marine terraces. They have 40 inches to greater than 80 inches of fine sand or sand. Diagnostic subsurface horizon is an argillic horizon below 40 inches or is absent. The organic matter content of the surface layer is dominantly very low or low. Unless limed, the reaction in the surface layer ranges from extremely acid to slightly acid.

Climatic Features

Freeze-free period (>28° F 9 years in 10 at least): averages 270 d (range 266-278 d)

Length of growing season (>32° F 9 years in 10 at least): averages 234 d (range 225-247 d)

Annual minimum temperature (° F in month of January): averages 41.1 (range 38.6-43.5)

USDA Plant Hardiness Zone:
8b (15-20° F, Jacksonville)
8a (10-15° F, Glen St. Mary)

Mean annual precipitation (inches): averages 54.40 (range 52.24-59.65)

Soil Properties

Percent Slope: Dominantly 8 to 30 percent, but ranges to 60 percent

Surface Texture: Fine sand, sand, loamy fine sand, loamy sand

Sand Content of Surface Layer: 84 to 97 percent

Clay Content of Surface Layer: 1 to 11 percent

Organic Matter Content of Surface Layer: 0.5 to 4 percent

Cation Exchange Capacity of Surface Layer (meq/100g): 0.1 to 5.3

Effective Cation Capacity of Surface Layer (meq/100g): 0.1 to 5.8

Bulk Density of Surface Layer (g/cc): 1.3 to 1.61

Saturated Hydraulic Conductivity of Surface Layer: Rapid or very rapid

Soil Reaction of Surface Layer: 3.5 to 6.5 (unless limed)

Available Water Capacity (0 to 30 inches): 0.3 to 1.5 inch per inch

Depth to Finer Textured Material: 40 to more than 80 inches

Depth to Bedrock: Greater than 80 inches.

Drainage Class (Agronomic): Moderately well, well

Depth to Seasonal High Water Table (during wet periods): 3.0 to 5.0 feet below the surface

Flooding: None

Ponding: None

Monthly precipitation (inches) and temperature (F):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precip avg	4.89	3.82	5.09	3.28	3.27	6.23	6.84	7.12	4.86	2.98	2.69	3.34
Avg Min	41.1	43.6	49.4	54.3	62.0	68.5	71.1	70.8	67.9	57.7	50.0	43.2
Avg Temp	55.1	56.3	62.3	67.5	74.4	79.6	81.6	81.2	78.4	69.8	62.4	55.4
Avg Max	65.7	68.9	75.2	80.5	86.8	90.7	92.0	91.5	88.9	82.1	74.7	67.6

Climate Station Locations (averages from 1971 to 2000; see Appendix 1)

FSG Documentation

Inventory Data References:

1. -------. 2000. Plant Materials Adaption Study Final Report, Belleview-Perry Sprayfield., USDA, NRCS, Brooksville Plant Material Center Brooksville, Florida. 25 p.
2. Beltranena, R., J. Breman, and G. Prine. 1981. Yield and quality of Florigraze rhizoma peanut (*Arachis glabrata* Benth.) as affected by cutting height and frequency. Proc. Soil Crop Sci. Soc. Florida. 40:153-156.
3. Coleman, S., and M. Williams. 2007. Bermudagrass yield and quality through the grazing season. *In* Proc. USDA-ARS STARS Field Day, May 25, 2007. Brooksville, FL.
4. Engibous, J.C., W.J. Friedmann, and M.B. Gillis. 1958. Yield and Quality of Pangolagrass and Bahiagrass as affected by Rate and Frequency of Fertilization. SSSAJ. 22:423-425. (https://www.agronomy.org/publications/sssaj/abstracts/22/5/SS0220050423, accessed August 22, 2011).
5. Williams, M.J. 1994. Growth Characteristics of Rhizoma Peanut and Nitrogen-Fertilized Bahia Swards. Agron. J. 86:819-823. (https://www.agronomy.org/publications/aj/abstracts/86/5/AJ0860050819, accessed August 22, 2011.)
6. Williams, M.J., and R.S. Kalmbacher. 1996. Renovation Effects on Bahiagrass Productivity. Agron. J. 88:191-198. (https://www.agronomy.org/publications/aj/abstracts/88/2/AJ0880020191, accessed August 22, 2011)

State Correlation: (NA)

Forage Suitability Group Approval:

Greg Hendricks, State Resource Conservationist

Tom Weber, State Soil Scientist

Appendix 1: Climate Station Locations		
COOP ID (FL=08)	**Location**	**County**
4731	Lake City	Columbia
4394	Jasper	Hamilton
5539	Mayo	LaFayette
9120	Usher Tower	Levy
5275	Madison	Madison
5099	Live Oak	Suwannee