

Lake Assessment Report

MARION, LAKE

8/2/2004

Lake assessments are being conducted to contribute physical and ecological data to the Atlas as a collaborative effort between project partners. The goal is to rapidly assess many of the lakes in the county and thus provide stakeholders a better understanding of the character of the lake, its shore, and the aquatic plants present there. These data are intended to assist in the future management of the lake and its watershed.

The first section of the report provides the results of the bottom mapping effort: a contour (bathymetric) map of the lake, area, volume and depth statistics, and the water level at the time of assessment (if available).

The second section provides the results of the ecological (vegetation) assessment conducted on the lake. These results can be used to better manage vegetation in the lake. A list is provided with the different plant species found at various sites around the lake. Potentially invasive, exotic (non-native) species are identified in a plant list and the percent of exotics is presented in a summary table. The results of this study are compared with other lakes in the watershed.

The intent of the assessment is to provide a starting point from which to track changes in the lake. These data can provide the information needed to determine changes and to monitor trends in physical condition and ecological health of the lake.

I. Physical Data – Area, Depth, Volume, & Bottom Contours

The bottom of the lake was mapped using a Global Positioning System (GPS) to determine the boat's position, and a depth-finder to provide depth associated with that measured position. The result is an estimate of the lake's area, mean and maximum depths, and volume (Table 1) and the creation of a bottom contour map. *NOTE: This map is for recreational purposes only.*

Table 1: Physical Characteristics of the Lake

Surface Area (acres):	<u>15.00</u>
Mean Depth (feet):	<u>4.10</u>
Maximum Depth (feet):	<u>9.60</u>
Volume (gallons):	<u>19,758,216</u>



The lake assessments are created in partnership with Seminole County and the Florida Center for Community Design and Research at USF. If you have any questions, please use the "Contact Us" form on the Seminole Atlas Website (www.seminole.wateratlas.org)

Lake Marion

Section Township Range
12-21-29

 Contour Lines Expressed
in 2 Foot Intervals

 Estimated Lake
Perimeter

EXPLANATION:

Assessment Date: August 02, 2004
Lake water level was 55.2 ft above sea level when the lake was assessed.
Contours are expressed in absolute depth below this level and may not exclude the presence of submerged aquatic vegetation.

DATA SOURCES

Seminole County 1999 Color aerials provided by Seminole County Public Works. All contours generated by Florida Center For Community Design and Research based on GPS/Sonar data provided by Seminole County Stormwater Division.



0 150 300 450 600 Feet



II. Ecological Data - Aquatic Plant Survey

Approximately equispaced sites (typically ten or more) are mapped around the lake and the aquatic plants at each site are surveyed. The total number of species from all sites is used to approximate the total diversity of aquatic plants and the percent of invasive-exotic plants on the lake and in the watershed (Table 2). Many of these plants are considered ecologically harmful, as they tend to out-compete beneficial native species. Such “nuisance” plants can also make boating and other recreational activities difficult or impossible. The common and scientific names of plant species found on your lake are listed in Table 3.

Table 2: Comparison of species diversity between the lake and other assessed lakes located within the same watershed

	<u>Lake</u> MARION, LAKE <i>(Average)</i>	<u>Watershed</u> Little Wekiva
Number of Taxa:	27	36
Percent Exotic Plants:	19%	18%

Table 3: Botanical and common names of the most commonly found plants on the lake. Percent frequency (of occurrence), habit (location where found), status (native or exotic), and EPPC status are provided

Common Name	Scientific Name	Frequency	Habit	Status	EPPC
Algal Mats, Floating	Algal spp.	100%	Floating	Unknown	Unknown
Southern Naiad	Najas guadelupensis	100%	Submersed	Native	NL
Maidencane	Panicum hemitomon	100%	Emergent	Native	NL
Knotted Spikerush, Giant-Spikerush	Eleocharis interstincta	90%	Emergent	Native	NL
Torpedo Grass	Panicum repens	90%	Emergent	Exotic	I
Alligator Weed	Alternanthera philoxeroides	60%	Emergent	Exotic	II
Panic Grasses	Panicum spp.	50%	Emergent	Unknown	NL
Bald Cypress	Taxodium distichum	40%	Emergent	Native	NL
Aster spp., Elliot's Aster	Aster spp.	30%	Unknown	Unknown	Unknown
Fragrant Flatsedge	Cyperus odoratus	30%	Emergent	Native	NL
Carolina Willow	Salix caroliniana	30%	Emergent	Native	NL
Southern Red Maple	Acer rubrum	20%	Emergent	Native	NL

Common Name	Scientific Name	Frequency	Habit	Status	EPPC
Asian Pennywort, Coinwort	<i>Centella asiatica</i>	20%	Emergent	Native	NL
Camphor-tree	<i>Cinnamomum camphora</i>	20%	Emergent	Native	I
Manyflower Marshpennywort, Water Pennywort	<i>Hydrocotyl umbellata</i>	20%	Emergent	Native	NL
Para Grass	<i>Urochloa mutica</i>	20%	Emergent	Exotic	I
Buttonbush	<i>Cephalanthus occidentalis</i>	10%	Emergent	Native	NL
Duckweed	<i>Lemna spp.</i>	10%	Floating	Native	NL
American Spongeplant, Frog's Bit	<i>Limnobium spongia</i>	10%	Floating	Native	NL
Creeping Primrosewillow, Red Ludwigia	<i>Ludwigia repens</i>	10%	Emergent	Native	NL
Wax Myrtle	<i>Myrica cerifera</i>	10%	Emergent	Native	NL
Stonewort	<i>Nitella spp.</i>	10%	Submersed	Native	NL
Pickereel Weed	<i>Pontederia cordata</i>	10%	Emergent	Native	NL
Wapato, Common Arrowhead, Duck Potato	<i>Sagittaria latifolia</i>	10%	Emergent	Native	NL
Water Spangles, Water Fern	<i>Salvinia minima</i>	10%	Floating	Native	NL
Brazilian Pepper	<i>Schinus terebinthifolius</i>	10%	Emergent	Exotic	I
Creeping Oxeye	<i>Wedelia trilobata</i>	10%	Emergent	Exotic	II