

Lake Assessment Report

EVA, LAKE

7/29/2004

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)

Eva Lake

Section Township Range
19 & 20-21-33

 Contour Lines Expressed
in 2 Foot Intervals

 Estimated Lake
Perimeter

EXPLANATION:

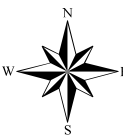
Assessment Date: July 29, 2004

Lake water level was 39.5 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.



0 125 250 375 500 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> EVA, LAKE (Average)	<u>Watershed</u> Big Econlockhatchee
Number of Taxa:	32	31
Percent Exotic Plants:	16%	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
American White Water Lily, Fragrant Water Lily	<i>Nymphaea odorata</i>	100%	Floating	Native	NL
Torpedo Grass	<i>Panicum repens</i>	100%	Emergent	Exotic	I
Pine Tree	<i>Pinus</i> spp.	100%	Emergent	Native	NL
Buttonbush	<i>Cephalanthus occidentalis</i>	90%	Emergent	Native	NL
Peruvian Primrosewillow	<i>Ludwigia peruviana</i>	90%	Emergent	Exotic	NL
Wax Myrtle	<i>Myrica cerifera</i>	90%	Emergent	Native	NL
Sweetbay Magnolia	<i>Magnolia virginiana</i>	80%	Emergent	Native	NL
Dahoon Holly	<i>Ilex cassine</i>	70%	Emergent	Native	NL
Climbing Hempvine	<i>Mikania scandens</i>	70%	Emergent	Native	NL
Loblolly Bay	<i>Gordonia lasianthus</i>	60%	Emergent	Native	NL
Punk Tree, Melaleuca	<i>Melaleuca quinquenervia</i>	60%	Emergent	Exotic	I

Common Name	Scientific Name	Frequency	Habit	Status	EPPC
Wapato, Common Arrowhead, Duck Potato	<i>Sagittaria latifolia</i>	60%	Emergent	Native	NL
Para Grass	<i>Urochloa mutica</i>	60%	Emergent	Exotic	I
Spatterdock, Yellow Pondlily	<i>Nuphar lutea</i>	40%	Floating	Native	NL
Pickerel Weed	<i>Pontederia cordata</i>	40%	Emergent	Native	NL
Baldwin's Spikerush, Roadgrass	<i>Eleocharis baldwinii</i>	30%	Submersed	Native	NL
Pond Weed	<i>Potamogeton</i> spp.	30%	Submersed	Native	NL
Cattails	<i>Typha</i> spp.	30%	Emergent	Native	NL
Southern Red Maple	<i>Acer rubrum</i>	20%	Emergent	Native	NL
Algal Mats, Floating	Algal spp.	20%	Floating	Unknown	Unknown
Manyflower Marshpennywort, Water Pennywort	<i>Hydrocotyl umbellata</i>	20%	Emergent	Native	NL
Southern Naiad	<i>Najas guadelupensis</i>	20%	Submersed	Native	NL
Maidencane	<i>Panicum hemitomon</i>	20%	Emergent	Native	NL
Bald Cypress	<i>Taxodium distichum</i>	20%	Emergent	Native	NL
Jamaica Swamp Saw Grass	<i>Cladium jamaicense</i>	10%	Emergent	Native	NL
Fragrant Flatsedge	<i>Cyperus odoratus</i>	10%	Emergent	Native	NL
Fourpetal St. John's-Wort	<i>Hypericum tetrapetalum</i>	10%	Emergent	Native	NL
Carolina Redroot	<i>Lachnanthes caroliniana</i>	10%	Emergent	Native	NL
Mexican Primrosewillow, Long-stalked Ludwigia	<i>Ludwigia octovalvis</i>	10%	Emergent	Native	NL
Pond Cypress	<i>Taxodium acendens</i>	10%	Emergent	Native	NL
Creeping Oxeye	<i>Wedelia trilobata</i>	10%	Emergent	Exotic	II
Yellow-eyed Grass	<i>Xyris</i> spp.	10%	Emergent	Native	NL