

Lake Assessment Report

EAST CRYSTAL 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>37.30</u>
Mean Depth (feet):	<u>4.80</u>
Maximum Depth (feet):	<u>18.00</u>
Volume (gallons):	<u>63,909,183</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)

East Crystal Lake

Section Township Range
3 & 4 & 9 & 10-20-30



Contour Lines Expressed
in 2 Foot Intervals



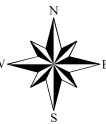
Estimated Lake
Perimeter

EXPLANATION:

Assessment Date: August 2, 2004
Lake water level was 40 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.



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> EAST CRYSTAL LAKE (Average)	<u>Watershed</u> Lake Monroe (L-S Canal)
Number of Taxa:	29	32
Percent Exotic Plants:	7%	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
Stonewort	Nitella spp.	100%	Submersed	Native	NL
American White Water Lily, Fragrant Water Lily	Nymphaea odorata	100%	Floating	Native	NL
Maidencane	Panicum hemitomon	100%	Emergent	Native	NL
Torpedo Grass	Panicum repens	100%	Emergent	Exotic	I
Buttonbush	Cephalanthus occidentalis	90%	Emergent	Native	NL
Water Primroses, Primrosewillow	Ludwigia spp.	90%	Emergent	Unknown	NL
Pickerel Weed	Pontederia cordata	90%	Emergent	Native	NL
Beaksedge, Beakrush	Rhynchospora spp.	90%	Emergent	Unknown	NL
Southern Umbrellasedge	Fuirena scirpoidea	80%	Emergent	Native	NL
Wax Myrtle	Myrica cerifera	80%	Emergent	Native	NL
Pine Tree	Pinus spp.	60%	Emergent	Native	NL
Manyflower Marshpennywort, Water Pennywort	Hydrocotyl umbellata	50%	Emergent	Native	NL
Chinese Tallow Tree	Sapium sebiferum	40%	Emergent	Exotic	I
Southern Red Maple	Acer rubrum	30%	Emergent	Native	NL

Common Name	Scientific Name	Frequency	Habit	Status	EPPC
Hypericum spp., St. John's Wort	Hypericum spp.	30%	Emergent	Unknown	Unknown
Marsh Fleabane, Camphorweed	Pluchea spp.	30%	Emergent	Native	NL
Sedge	Cyperus spp.	20%	Emergent	Unknown	NL
Southern Naiad	Najas guadelupensis	20%	Submersed	Native	NL
Carolina Willow	Salix caroliniana	20%	Emergent	Native	NL
Cattails	Typha spp.	20%	Emergent	Native	NL
Camphor-tree	Cinnamomum camphora	10%	Emergent	Native	I
Jamaica Swamp Saw Grass	Cladium jamaicense	10%	Emergent	Native	NL
Fragrant Flatsedge	Cyperus odoratus	10%	Emergent	Native	NL
Baldwin's Spikerush, Roadgrass	Eleocharis baldwinii	10%	Submersed	Native	NL
Dahoon Holly	Ilex cassine	10%	Emergent	Native	NL
Carolina Redroot	Lachnanthes caroliniana	10%	Emergent	Native	NL
Climbing Hempvine	Mikania scandens	10%	Emergent	Native	NL
Arrowhead	Sagittaria spp.	10%	Emergent	Native	NL
Yellow-eyed Grass	Xyris spp.	10%	Emergent	Native	NL