

# Lake Assessment Report

## CHARM, LAKE

### 6/25/2003

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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**

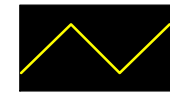
Surface Area (acres):	<u>20.40</u>
Mean Depth (feet):	<u>5.20</u>
Maximum Depth (feet):	<u>10.30</u>
Volume (gallons):	<u>34,914,189</u>



*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](http://www.seminole.wateratlas.org))*

# Charm Lake

Section Township Range  
10,11-21-31



Contour Lines Expressed  
in 2-Ft intervals



Estimated Lake  
Perimeter

## EXPLANATION:

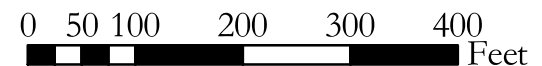
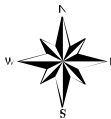
Assessment Date: June 25, 2003

Lake water level was 46.1 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> CHARM, LAKE <i>(Average)</i>	<u>Watershed</u> Lake Jesup
Number of Taxa:	31	31
Percent Exotic Plants:	23%	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
Alligator Weed	Alternanthera philoxeroides	100%	Emergent	Exotic	II
Maidencane	Panicum hemitomon	100%	Emergent	Native	NL
Torpedo Grass	Panicum repens	100%	Emergent	Exotic	I
Hydrilla, waterthyme	Hydrilla verticillata	90%	Submersed	Exotic	I
Manyflower Marshpennywort, Water Pennywort	Hydrocotyl umbellata	90%	Emergent	Native	NL
Duckweed	Lemna spp.	80%	Floating	Native	NL
Hornwort, Coontail	Ceratophyllum demersum	60%	Submersed	Native	NL
Peruvian Primrosewillow	Ludwigia peruviana	60%	Emergent	Exotic	NL
Spatterdock, Yellow Pondlily	Nuphar lutea	60%	Floating	Native	NL
Common Bacopa	Bacopa monnieri	50%	Submersed	Native	NL

Baldwin's Spikerush, Roadgrass	<i>Eleocharis baldwinii</i>	50%	Submersed	Native	NL
Wax Myrtle	<i>Myrica cerifera</i>	40%	Emergent	Native	NL
Para Grass	<i>Urochloa mutica</i>	40%	Emergent	Exotic	I
Southern Naiad	<i>Najas guadelupensis</i>	30%	Submersed	Native	NL
Cattails	<i>Typha spp.</i>	30%	Emergent	Native	NL
Southern Red Maple	<i>Acer rubrum</i>	20%	Emergent	Native	NL
Wild Taro	<i>Colocasia esculenta</i>	20%	Emergent	Exotic	I
Fragrant Flatsedge	<i>Cyperus odoratus</i>	20%	Emergent	Native	NL
Mexican Primrosewillow, Long- stalked Ludwigia	<i>Ludwigia octovalvis</i>	20%	Emergent	Native	NL
Climbing Hempvine	<i>Mikania scandens</i>	20%	Emergent	Native	NL
Bald Cypress	<i>Taxodium distichum</i>	20%	Emergent	Native	NL
Aster spp., Elliot's Aster	<i>Aster spp.</i>	10%	Unknown	Unknown	Unknown
Sedge	<i>Carex spp.</i>	10%	Emergent	Unknown	Unknown
Jamaica Swamp Saw Grass	<i>Cladium jamaicense</i>	10%	Emergent	Native	NL
Buttonweed	<i>Diodia virginiana</i>	10%	Emergent	Native	NL
Waterspider False Reinorchid	<i>Habenaria repens</i>	10%	Emergent	Native	NL
Shore Rush, Grassleaf Rush	<i>Juncus marginatus</i>	10%	Emergent	Native	NL
Creeping Primrosewillow, Red Ludwigia	<i>Ludwigia repens</i>	10%	Emergent	Native	NL
Water milfoil, parrot feather	<i>Myriophyllum spp.</i>	10%	Emergent	Exotic	II
Pine Tree	<i>Pinus spp.</i>	10%	Emergent	Native	NL