

# LAKE ASSESSMENT REPORT

## SECRET LAKE

8 /9 /2000

---

---

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**

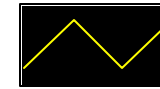
Surface Area (acres):	8
Mean Depth (feet):	9.3
Maximum Depth (feet):	21.3
Volume (gallons):	25,829,602



The lake assessments are created in partnership with Seminole County and the Florida Center for Community Design and Research. 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)).

# Secret Lake

Section - Township - Range  
9-21-30



Contour Lines  
Expressed in  
2-Foot Intervals



Estimated Lake  
Perimeter

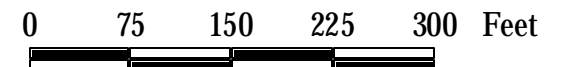
## EXPLANATION:

Assessment Date: August 7, 2000

Lake water level was 51.83 ft.  
above sea level when the lake was  
assessed. Contours are expressed in  
absolute depth below this level.

## 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 the 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> SECRET LAKE	<u>Watershed</u> Gee Creek
	(Average)	
Number of Taxa:	29	30
Percent Exotic Plants:	24%	19%

**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
Torpedo Grass	<i>Panicum repens</i>	83%	Emergent	Exotic	I
Pickereel Weed	<i>Pontederia cordata</i>	83%	Emergent	Native	NL
Peruvian Primrosewillow	<i>Ludwigia peruviana</i>	67%	Emergent	Exotic	NL
Smartweed, Knotweed	<i>Polygonum spp.</i>	67%	Emergent	Native	NL
Willow	<i>Salix spp.</i>	67%	Emergent	Native	NL
Wild Taro	<i>Colocasia esculenta</i>	50%	Emergent	Exotic	I
Haspan Flatsedge	<i>Cyperus haspan</i>	50%	Emergent	Native	NL
Baldwin's Spikerush, Roadgrass	<i>Eleocharis baldwinii</i>	50%	Submersed	Native	NL
Spatterdock, Yellow Pondlily	<i>Nuphar lutea</i>	50%	Floating	Native	NL
Southern Red Maple	<i>Acer rubrum</i>	33%	Emergent	Native	NL
Alligator Weed	<i>Alternanthera philoxeroides</i>	33%	Emergent	Exotic	II
Manyflower Marshpennywort, Water Penny	<i>Hydrocotyl umbellata</i>	33%	Emergent	Native	NL
Wax Myrtle	<i>Myrica cerifera</i>	33%	Emergent	Native	NL
Frog-fruit, Carpetweed, Turkey Tangle Fogf	<i>Phyla nodiflora</i>	33%	Emergent	Native	NL
Cattails	<i>Typha spp.</i>	33%	Emergent	Native	NL
Common Ragweed	<i>Ambrosia artemisiifolia</i>	17%	Emergent	Native	NL
Buttonbush	<i>Cephalanthus occidentalis</i>	17%	Emergent	Native	NL
Willow-herb; Swamp Loosestrife	<i>Decodon verticillatus</i>	17%	Emergent	Native	NL

Yerba De Tajo	<i>Eclipta alba</i>	17%	Emergent	Native	NL
Water Hyacinth	<i>Eichsornia crassipes</i>	17%	Floating	Exotic	I
Dog Fennel	<i>Eupatorium capillifolium</i>	17%	Emergent	Native	NL
Southern Cut Grass	<i>Leersia hexandra</i>	17%	Emergent	Native	NL
Sweetbay Magnolia	<i>Magnolia virginiana</i>	17%	Emergent	Native	NL
Climbing Hempvine	<i>Mikania scandens</i>	17%	Emergent	Native	NL
Cinnamon Fern	<i>Osmunda cinnamomea</i>	17%	Emergent	Native	NL
Sugarcane Plumegrass	<i>Saccharum giganteum</i>	17%	Terrestrial	Exotic	NL
Chinese Tallow Tree	<i>Sapium sebiferum</i>	17%	Emergent	Exotic	I
Cypress	<i>Taxodium spp.</i>	17%	Emergent	Native	NL
Grapevine	<i>Vitis spp.</i>	17%	Emergent	Native	NL