

LAKE ASSESSMENT REPORT

HOWELL, LAKE

7 /19/2000

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

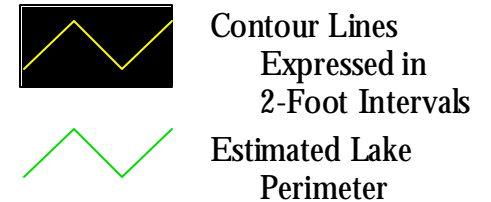
Surface Area (acres):	402
Mean Depth (feet):	7.6
Maximum Depth (feet):	14.9
Volume (gallons):	994,065,952



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).

Lake Howell

Section - Township - Range
21,22,27 & 28 -21 -30



EXPLANATION:

Assessment Date: July 18, 2000.

Lake water level was 51.8 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.



0 500 1000 1500 2000 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> HOWELL, LAKE	<u>Watershed</u> Howell Creek
	(Average)	
Number of Taxa:	62	42
Percent Exotic Plants:	21%	17%

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
Cypress	Taxodium spp.	79%	Emergent	Native	NL
Alligator Weed	Alternanthera philoxeroides	75%	Emergent	Exotic	II
Southern Red Maple	Acer rubrum	68%	Emergent	Native	NL
Wild Taro	Colocasia esculenta	68%	Emergent	Exotic	I
Manyflower Marshpennywort, Water Penny	Hydrocotyl umbellata	64%	Emergent	Native	NL
Peruvian Primrosewillow	Ludwigia peruviana	61%	Emergent	Exotic	NL
Maidencane	Panicum hemitomon	57%	Emergent	Native	NL
Spanish Moss	Tillandsia usneoides	54%	Epiphytic	Native	NL
Buttonbush	Cephalanthus occidentalis	46%	Emergent	Native	NL
Dayflower	Commelina diffusa	46%	Emergent	Native	NL
Dog Fennel	Eupatorium capillifolium	46%	Emergent	Native	NL
Algae	Periphyton spp.	46%	Submersed	Native	NL
Cattails	Typha spp.	43%	Emergent	Native	NL
Wax Myrtle	Myrica cerifera	39%	Emergent	Native	NL
Torpedo Grass	Panicum repens	36%	Emergent	Exotic	I
Virginia Creeper, Woodbine	Parthenocissus quinquefolia	36%	Emergent	Native	NL
Sedge	Carex spp.	32%	Emergent	Unknown	
Sabal Palm, Cabbage Palm	Sabal palmetto	32%	Terrestrial	Native	NL

Hydrilla, waterthyme	Hydrilla verticillata	29%	Submersed	Exotic	I
Haspan Flatsedge	Cyperus haspan	25%	Emergent	Native	NL
False Daisy	Eclipta prostrata	25%	Emergent	Native	NL
Black Gum, Swamp Tupelo	Nyssa sylvatica var. biflora	25%	Emergent	Native	NL
Sedge	Cyperus polystachyos var. texensis	21%	Emergent	Native	NL
Water Hyacinth	Eichsornia crassipes	21%	Floating	Exotic	I
Willow	Salix spp.	21%	Emergent	Native	NL
Grapevine	Vitis spp.	21%	Emergent	Native	NL
Baldwin's Spikerush, Roadgrass	Eleocharis baldwinii	18%	Submersed	Native	NL
Water Spangles, Water Fern	Salvinia minima	18%	Floating	Native	NL
Para Grass	Urochloa mutica	18%	Emergent	Exotic	I
Hairy pod Cowpea	Vigna luteola	18%	Terrestrial	Native	NL
Dahoon Holly	Ilex cassine	14%	Emergent	Native	NL
Cinnamon Fern	Osmunda cinnamomea	14%	Emergent	Native	NL
Elderberry	Sambucus canadensis	14%	Emergent	Native	NL
Poison Ivy	Toxicodendron radicans	14%	Emergent	Native	NL
Common Bacopa	Bacopa monnieri	11%	Submersed	Native	NL
Manatee Mudflower, Baby's Tears	Micranthemum glomeratum	11%	Submersed	Native	NL
Climbing Hempvine	Mikania scandens	11%	Emergent	Native	NL
Long-leafed Pine	Pinus palustris	11%	Emergent	Native	NL
Chinese Tallow Tree	Sapium sebiferum	11%	Emergent	Exotic	I
Tapegrass	Valisneria americana	11%	Submersed	Native	NL
Sea Myrtle	Baccharis halimifolia	7%	Emergent	Native	NL
Bog Hemp, False Nettle	Boehmeria cylindrica	7%	Emergent	Native	NL
Asian Pennywort, Coinwort	Centella asiatica	7%	Emergent	Native	NL
Royal Fern	Osmunda regalis	7%	Emergent	Native	NL
Marsh Fleabane, Camphorweed	Pluchea spp.	7%	Emergent	Native	NL
Water Oak	Quercus nigra	7%	Emergent	Native	NL
Saw Palmetto	Serenoa repens	7%	Terrestrial	Native	NL
Creeping Oxeye	Wedelia trilobata	7%	Emergent	Exotic	II
Bamboo	Bambusa spp.	4%	Emergent	Exotic	NL
Water Hickory	Carya aquatica	4%	Emergent	Native	NL
Hickory	Carya spp.	4%	Emergent	Native	NL
Umbrella Flat Sedge	Cyperus alternifolius	4%	Emergent	Exotic	II
Inkberry, Gallberry	Ilex glabra	4%	Emergent	Native	NL
Swampbay	Persea palustris	4%	Emergent	Native	NL
Frog-fruit, Carpetweed, Turkey Tangle Fog	Phyla nodiflora	4%	Emergent	Native	NL
Sensitive Plant	Phyllanthus urinaria	4%	Terrestrial	Exotic	NL
Rosy Camphorweed	Pluchea rosea	4%	Emergent	Native	NL
Beaksedge, Beakrush	Rhynchospora spp.	4%	Emergent	Unknown	NL
Duck Potato	Sagittaria lancifolia	4%	Emergent	Native	NL
Brazilian Pepper	Schinus terebinthifolius	4%	Emergent	Exotic	I

American Snowbell	<i>Styrax americanus</i>	4%	Emergent	Native	NL
Caesar's-weed	<i>Urena lobata</i>	4%	Emergent	Native	II