

LAKE ASSESSMENT REPORT

HARNEY, LAKE

8 /14/2001

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

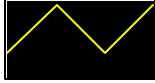

Surface Area (acres):	<u>6113</u>
Mean Depth (feet):	<u>7.3</u>
Maximum Depth (feet):	<u>15.0</u>
Volume (gallons):	<u>14,465,351,103</u>



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 Harney

Sections - Township - Range
12,13,14,23 & 24-20-32
4,5,6,7,8,17,18,19,20-20-33

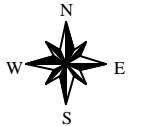
-  Contour Lines
Expressed in
2-Foot Intervals
-  Estimated Lake
Perimeter

EXPLANATION:

Assessment Date: Aug 16, 2001
Lake water level was 4.9 ft.
above sea level when the lake was
assessed. Contours are expressed in
absolute depth below this level.

DATA SOURCES:

April 2000 georeferenced Color Infrared
Digital Ortho Quarter Quads (DOQQs)
obtained from Seminole County GIS
Division. 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> HARNEY, LAKE	<u>Watershed</u> Lake Harney
	(Average)	
Number of Taxa:	57	57
Percent Exotic Plants:	14%	14%

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
Water Lettuce	<i>Pistia stratiotes</i>	96%	Floating	Exotic	I
Water Spangles, Water Fern	<i>Salvinia minima</i>	96%	Floating	Native	NL
Water Hyacinth	<i>Eichsornia crassipes</i>	93%	Floating	Exotic	I
Tapegrass	<i>Valisneria americana</i>	89%	Submersed	Native	NL
Alligator Weed	<i>Alternanthera philoxeroides</i>	85%	Emergent	Exotic	II
Duckweed	<i>Lemna</i> spp.	81%	Floating	Native	NL
Southern Naiad	<i>Najas guadelupensis</i>	70%	Submersed	Native	NL
Aster spp., Elliot's Aster	<i>Aster</i> spp.	56%	Unknown	Unknown	Unknow
Carolina Mosquito Fern	<i>Azolla caroliniana</i>	56%	Floating	Native	NL
Torpedo Grass	<i>Panicum repens</i>	56%	Emergent	Exotic	I
Manyflower Marshpennywort, Water Penny	<i>Hydrocotyl umbellata</i>	52%	Emergent	Native	NL
Hornwort, Coontail	<i>Ceratophyllum demersum</i>	48%	Submersed	Native	NL
Common Bacopa	<i>Bacopa monnieri</i>	41%	Submersed	Native	NL
Frog-fruit, Carpetweed, Turkey Tangle Fogf	<i>Phyla nodiflora</i>	41%	Emergent	Native	NL
Hydrilla, waterthyme	<i>Hydrilla verticillata</i>	33%	Submersed	Exotic	I
Southern Cut Grass	<i>Leersia hexandra</i>	33%	Emergent	Native	NL
Swamp Rosemallow, Swamp Hibiscus	<i>Hibiscus grandiflorus</i>	30%	Emergent	Native	NL
Maidencane	<i>Panicum hemitomon</i>	30%	Emergent	Native	NL

Cordgrass	<i>Spartina</i> spp.	30%	Emergent	Native	NL
Bald Cypress	<i>Taxodium distichum</i>	30%	Emergent	Native	NL
Smartweed, Knotweed	<i>Polygonum</i> spp.	26%	Emergent	Native	NL
Unidentified Plant Species	UNKNOWN SPP	26%	Unknown	Unknown	Unknow
Sedge	<i>Carex</i> spp.	22%	Emergent	Unknown	
Buttonweed	<i>Diodia virginiana</i>	22%	Emergent	Native	NL
Savannah False Pimpernel	<i>Lindernia grandiflora</i>	22%	Emergent	Native	NL
Asian Pennywort, Coinwort	<i>Centella asiatica</i>	19%	Emergent	Native	NL
Pond Cypress	<i>Taxodium acendens</i>	19%	Emergent	Native	NL
Para Grass	<i>Urochloa mutica</i>	19%	Emergent	Exotic	I
Buttonbush	<i>Cephalanthus occidentalis</i>	11%	Emergent	Native	NL
Marsh Fleabane, Camphorweed	<i>Pluchea</i> spp.	11%	Emergent	Native	NL
Carolina Willow	<i>Salix caroliniana</i>	11%	Emergent	Native	NL
Giant Bulrush	<i>Scirpus californicus</i>	11%	Emergent	Native	NL
Bristlegrass, Foxtail	<i>Setaria</i> spp.	11%	Emergent	Unknown	
Fragrant Flatsedge	<i>Cyperus odoratus</i>	7%	Emergent	Native	NL
Southern Umbrellasedge	<i>Fuirena scirpoidea</i>	7%	Emergent	Native	NL
Rush	<i>Juncus</i> spp.	7%	Emergent	Native	NL
Peruvian Primrosewillow	<i>Ludwigia peruviana</i>	7%	Emergent	Exotic	NL
Creeping Primrosewillow, Red Ludwigia	<i>Ludwigia repens</i>	7%	Emergent	Native	NL
Watergrass	<i>Luziola fluitans</i>	7%	Emergent	Native	NL
Climbing Hempvine	<i>Mikania scandens</i>	7%	Emergent	Native	NL
Yellow Waterlily	<i>Nymphaea mexicana</i>	7%	Floating	Native	NL
Pickereel Weed	<i>Pontederia cordata</i>	7%	Emergent	Native	NL
Lemon Bacopa	<i>Bacopa caroliniana</i>	4%	Submersed	Native	NL
Dayflower	<i>Commelina</i> spp.	4%	Emergent	Native	NL
Knotted Spikerush, Giant-Spikerush	<i>Eleocharis interstincta</i>	4%	Emergent	Native	NL
Hypericum spp., St. John's Wort	<i>Hypericum</i> spp.	4%	Emergent	Unknown	Unknow
Shore Rush, Grassleaf Rush	<i>Juncus marginatus</i>	4%	Emergent	Native	NL
Bog Buttons	<i>Lachnocaulon</i> spp.	4%	Emergent	Native	NL
Water Primroses, Primrosewillow	<i>Ludwigia</i> spp.	4%	Emergent	Unknown	NL
Wax Myrtle	<i>Myrica cerifera</i>	4%	Emergent	Native	NL
Common Reed	<i>Phragmites australis</i>	4%	Emergent	Native	NL
Pine Tree	<i>Pinus</i> spp.	4%	Emergent	Native	NL
Mock Bishopsweed; Herbwilliam	<i>Ptilimnium capillaceum</i>	4%	Emergent	Native	NL
Willow	<i>Salix</i> spp.	4%	Emergent	Native	NL
Chinese Tallow Tree	<i>Sapium sebiferum</i>	4%	Emergent	Exotic	I
Cattails	<i>Typha</i> spp.	4%	Emergent	Native	NL
Yellow-eyed Grass	<i>Xyris</i> spp.	4%	Emergent	Native	NL