

LAKE ASSESSMENT REPORT

MILLS, LAKE

8 /11/2000

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

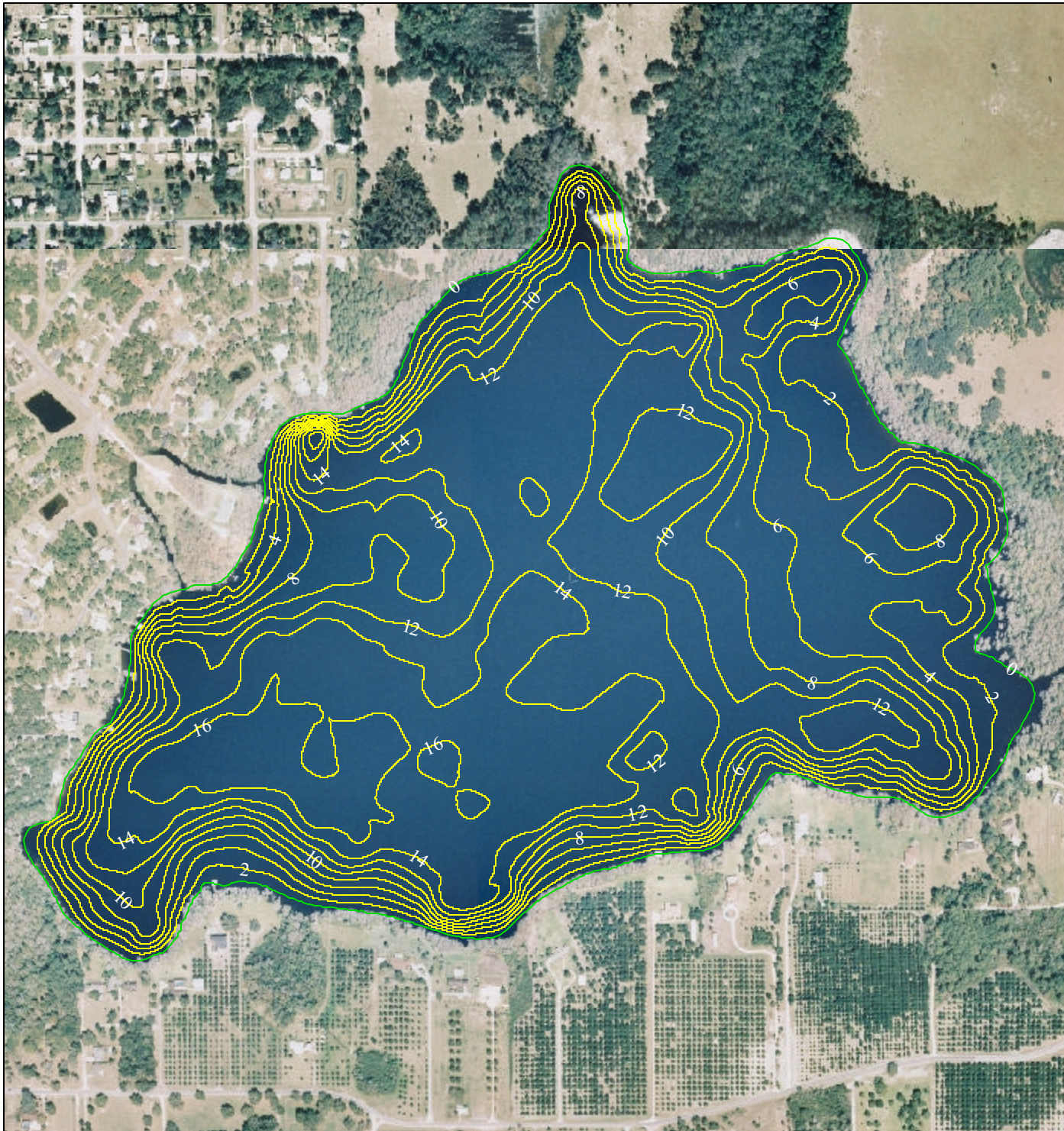
Surface Area (acres):	233
Mean Depth (feet):	9.6
Maximum Depth (feet):	23.9
Volume (gallons):	728,877,269

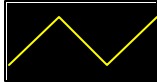



The lake assessments are created in partnership with Seminole County and the Florida Center for Community Design and Research. If you have any questions, please use the "Contact Us" form on the Seminole Atlas Website (www.seminole.wateratlas.org).

Lake Mills

Section - Township - Range
27 & 28-21-32



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

EXPLANATION:

Assessment Date: August 11, 2000

Lake water level was 40.6 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 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> MILLS, LAKE (Average)	<u>Watershed</u> Big Econlockhatchee
Number of Taxa:	42	31
Percent Exotic Plants:	12%	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
Cypress	Taxodium spp.	81%	Emergent	Native	NL
Wax Myrtle	Myrica cerifera	69%	Emergent	Native	NL
Peruvian Primrosewillow	Ludwigia peruviana	63%	Emergent	Exotic	NL
Southern Red Maple	Acer rubrum	56%	Emergent	Native	NL
Buttonbush	Cephalanthus occidentalis	56%	Emergent	Native	NL
Dahoon Holly	Ilex cassine	56%	Emergent	Native	NL
Torpedo Grass	Panicum repens	56%	Emergent	Exotic	I
Baldwin's Spikerush, Roadgrass	Eleocharis baldwinii	44%	Submersed	Native	NL
Manyflower Marshpennywort, Water Penny	Hydrocotyl umbellata	44%	Emergent	Native	NL
Black Gum, Swamp Tupelo	Nyssa sylvatica var. biflora	44%	Emergent	Native	NL
Grapevine	Vitis spp.	44%	Emergent	Native	NL
Spatterdock, Yellow Pondlily	Nuphar lutea	38%	Floating	Native	NL
Alligator Weed	Alternanthera philoxeroides	31%	Emergent	Exotic	II
Swamp Fern	Blechnum serrulatum	31%	Emergent	Native	NL
Haspan Flatsedge	Cyperus haspan	31%	Emergent	Native	NL
Dog Fennel	Eupatorium capillifolium	25%	Emergent	Native	NL
Manatee Mudflower, Baby's Tears	Micranthemum glomeratum	25%	Submersed	Native	NL
Cinnamon Fern	Osmunda cinnamomea	25%	Emergent	Native	NL

Willow	Salix spp.	25%	Emergent	Native	NL
Saw Palmetto	Serenoa repens	25%	Terrestrial	Native	NL
Wild Taro	Colocasia esculenta	19%	Emergent	Exotic	I
Royal Fern	Osmunda regalis	19%	Emergent	Native	NL
Maidencane	Panicum hemitomom	19%	Emergent	Native	NL
Lizard's Tail	Saururus cernuus	19%	Emergent	Native	NL
Cattails	Typha spp.	19%	Emergent	Native	NL
Tapegrass	Valisneria americana	19%	Submersed	Native	NL
Hatpins, Pipeworts	Eriocaulon spp.	13%	Emergent	Native	NL
Climbing Hempvine	Mikania scandens	13%	Emergent	Native	NL
Pickerel Weed	Pontederia cordata	13%	Emergent	Native	NL
Virginia Live Oak	Quercus virginiana	13%	Terrestrial	Native	NL
Sabal Palm, Cabbage Palm	Sabal palmetto	13%	Terrestrial	Native	NL
Poison Ivy	Toxicodendron radicans	13%	Emergent	Native	NL
Dimorphic Chain Fern	Woodwardia areolata	13%	Emergent	Native	NL
Titi	Cyrilla racemiflora	6%	Emergent	Native	NL
Common Persimmon	Diospyros virginiana	6%	Emergent	Native	NL
Rush Fuirena	Fuirena spp.	6%	Emergent	Native	NL
Boston Fern	Nephrolepis spp.	6%	Emergent	Unknown	NL
Virginia Creeper, Woodbine	Parthenocissus quinquefolia	6%	Emergent	Native	NL
Pine Tree	Pinus spp.	6%	Emergent	Native	NL
Marsh Fleabane, Camphorweed	Pluchea spp.	6%	Emergent	Native	NL
Guava	Psidium guajava	6%	Emergent	Exotic	I
Arrowhead	Sagittaria spp.	6%	Emergent	Native	NL