



The lake assessments are created in partnership with Hillsborough County and the Florida Center for Community Design and Research
LAKE ASSESSMENT DOCUMENT

Lake Helen 8/25/99 Watershed: Rocky/ Brushy Creek

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 your 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 your 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 sophisticated 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 your lake's area, mean and maximum depths, and volume (Table 1) and the creation of a bottom contour map.

Table 1. Physical Characteristics of Your Lake.

Surface Area (acres):	16
Mean Depth (feet):	8.9
Maximum Depth (feet):	25.8
Volume (gallons):	47,025,186

Lake Helen

Section - Township - Range
19-27-18

- Contour Lines
Expressed in
2-Foot Intervals
- Lake Perimeter
Ground Level

EXPLANATION:

Survey Date August 25, 1999.

Lake water level was 50 ft. above sea level when the lake was surveyed. Contours are expressed in absolute depth below this level.

DATA SOURCES:

Digital orthophotos by United States Geological Survey. All contours generated by Florida Center for Community Design and Research based on survey data provided by the Hillsborough County Lake Management Program.

25 0 25 50 Meters



Hillsborough County



University of
South Florida
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II. Ecological Data

Aquatic Plant Survey

Approximately equispaced sites are haphazardly 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 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 your lake and other assessed lakes located within your watershed.

	<u>Lake Helen</u>	<u>Rocky/ Brushy Creek</u> (Average)
Number of Taxa:	44	35
Percent Exotic Plants:	18%	18%

Table 3. Botanical and common names of the most commonly found plants on your lake. Percent frequency (of occurrence), habit (location where found), status (native or exotic), and EPPC status are provided.

Common Name	Plant Species	Frequency	Habit	Status	EPPC
Torpedo Grass	Panicum repens	100%	Emergent	Exotic	I
Cypress	Taxodium spp.	100%	Emergent	Native	NL
Baldwin's Spikerush, Roadgrass	Eleocharis baldwinii	90%	Submersed	Native	NL
Maidencane	Panicum hemitomon	90%	Emergent	Native	NL
Pickereel Weed	Pontederia cordata	90%	Emergent	Native	NL
Creeping Oxeye	Sphagneticola (Wedelia) trilobata	90%	Emergent	Exotic	II
Water Primroses, Primrosewillow	Ludwigia spp.	70%	Emergent	Unknown	NL
Swamp Fern	Blechnum serrulatum	60%	Emergent	Native	NL
Common Buttonbush	Cephalanthus occidentalis	60%	Emergent	Native	NL
Southern Red Maple	Acer rubrum var. trilobum	50%	Emergent	Native	NL
Rush Fuirena	Fuirena spp.	50%	Emergent	Native	NL
Manyflower Marshpennywort, Water Penny	Hydrocotyl umbellata	50%	Emergent	Native	NL
Loblolly Bay	Gordonia lasianthus	40%	Emergent	Native	NL
Climbing Hempvine	Mikania scandens	40%	Emergent	Native	NL
Fourpetal St. John's-Wort	Hypericum tetrapetalum	30%	Emergent	Native	NL
Punk Tree, Melaleuca	Melaleuca quinquenervia	30%	Emergent	Exotic	I

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Laurel Oak; Diamond Oak	<i>Quercus laurifolia</i>	30%	Emergent	Native	NL
Algal Mats, Floating	Algal spp.	20%	Floating	Unknown	Unknow
Pigweed, Water Hemp	<i>Amaranthus australis</i>	20%	Emergent	Native	NL
Common Bacopa, Herb-Of-Grace	<i>Bacopa monnieri</i>	20%	Submersed	Native	NL
Asian Pennywort, Coinwort, Spadeleaf	<i>Centella asiatica</i>	20%	Emergent	Native	NL
Camphor-tree	<i>Cinnamomum camphora</i>	20%	Emergent	Native	I
Swamp Rosemallow, Swamp Hibiscus	<i>Hibiscus grandiflorus</i>	20%	Emergent	Native	NL
Sweetbay Magnolia	<i>Magnolia virginiana</i>	20%	Emergent	Native	NL
Wax Myrtle	<i>Myrica cerifera</i>	20%	Emergent	Native	NL
Stonewort	<i>Nitella</i> spp.	20%	Submersed	Native	NL
Algae	Periphyton spp.	20%	Submersed	Native	NL
Willow	<i>Salix</i> spp.	20%	Emergent	Native	NL
Filamentous Algae, Algal Mats	Algae, Filamentous	10%	Floating	Native	NL
Wild Taro, Dasheen, Coco Yam	<i>Colocasia esculenta</i>	10%	Emergent	Exotic	I
Dayflower	<i>Commelina diffusa</i>	10%	Emergent	Exotic	NL
Fragrant Flatsedge	<i>Cyperus odoratus</i>	10%	Emergent	Native	NL
Sedge	<i>Cyperus</i> spp.	10%	Emergent	Unknown	NL
Buttonweed	<i>Diodia virginiana</i>	10%	Emergent	Native	NL
False Daisy, Yerba De Tajo	<i>Eclipta alba</i> (prostrata)	10%	Emergent	Native	NL
Dahoon Holly	<i>Ilex cassine</i>	10%	Emergent	Native	NL
Spatterdock, Yellow Pondlily	<i>Nuphar lutea</i> var. <i>advena</i>	10%	Floating	Native	NL
Frog-fruit, Carpetweed, Turkey Tangle Fogf	<i>Phyla nodiflora</i>	10%	Emergent	Native	NL
Pine Tree	<i>Pinus</i> spp.	10%	Emergent	Native	NL
Marsh Fleabane, Camphorweed	<i>Pluchea</i> spp.	10%	Emergent	Native	NL
Popcorn Tree, Chinese Tallow Tree	<i>Sapium sebiferum</i>	10%	Emergent	Exotic	I
Brazilian Pepper	<i>Schinus terebinthifolius</i>	10%	Emergent	Exotic	I
Cattails	<i>Typha</i> spp.	10%	Emergent	Native	NL
Elephant-Ear	<i>Xanthosoma sagittifolium</i>	10%	Emergent	Exotic	NL

Standing Crop

In addition to an overall survey of the types of plants on a lake, an estimate of the standing crop (biomass) of the lake has been obtained for many lakes. This was done by calculating the average weight of the vegetation within a quarter-meter square quadrat tossed haphazardly into three zones (see Figure) at each sampling site around the lake: (1) the emergent zone, (2) the floating zone and (3) the submersed zone. The average weight of the plants (Table 4) from all sampling sites and the dominant type of vegetation (Table 5) are provided. If data tables are not shown, no standing crop estimates were obtained for this lake.

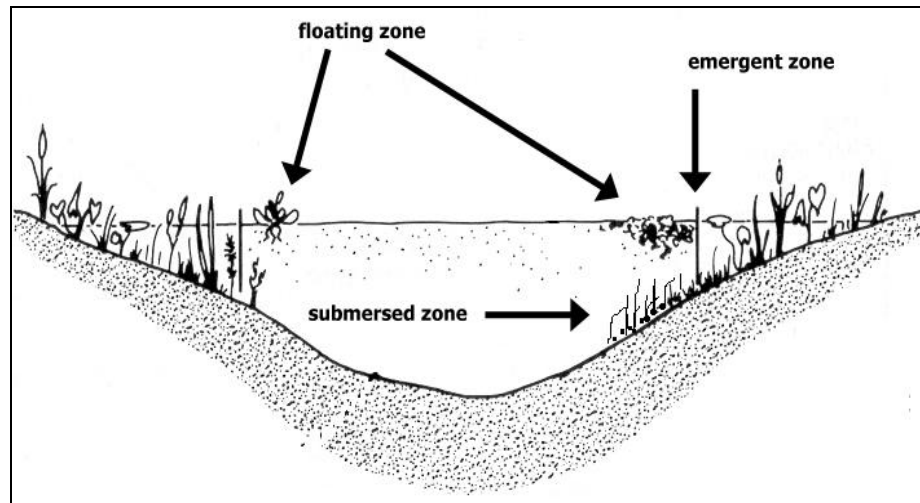


Table 4. Comparison between the average biomass from three zones within your lake and among all lakes assessed within your watershed.

	<u>Lake Helen</u>	<u>Rocky/ Brushy Creek</u> (Average)
Emergent Zone:	13.92	4.74
Floating Zone:	0.00	0.69
Submersed Zone:	1.06	1.54

Number of lakes sampled in your watershed: 29

Note: All biomass measurements are shown in kilograms per square meter.

Table 5. Dominant taxa from three zones within your lake.

<u>Zone</u>	<u>Dominant Plant</u>	<u>Status</u>
Emergent Zone:	Torpedo Grass	Exotic
Floating Zone:		
Submersed Zone:	Baldwin's Spikerush, Roadgrass	Native