



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

Lake Elizabeth 8/20/99 Watershed: Brooker 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):	<u>19</u>
Mean Depth (feet):	<u>11.5</u>
Maximum Depth (feet):	<u>29.1</u>
Volume (gallons):	<u>70,450,267</u>

Lake Elizabeth

Section - Township - Range
11-27-17

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

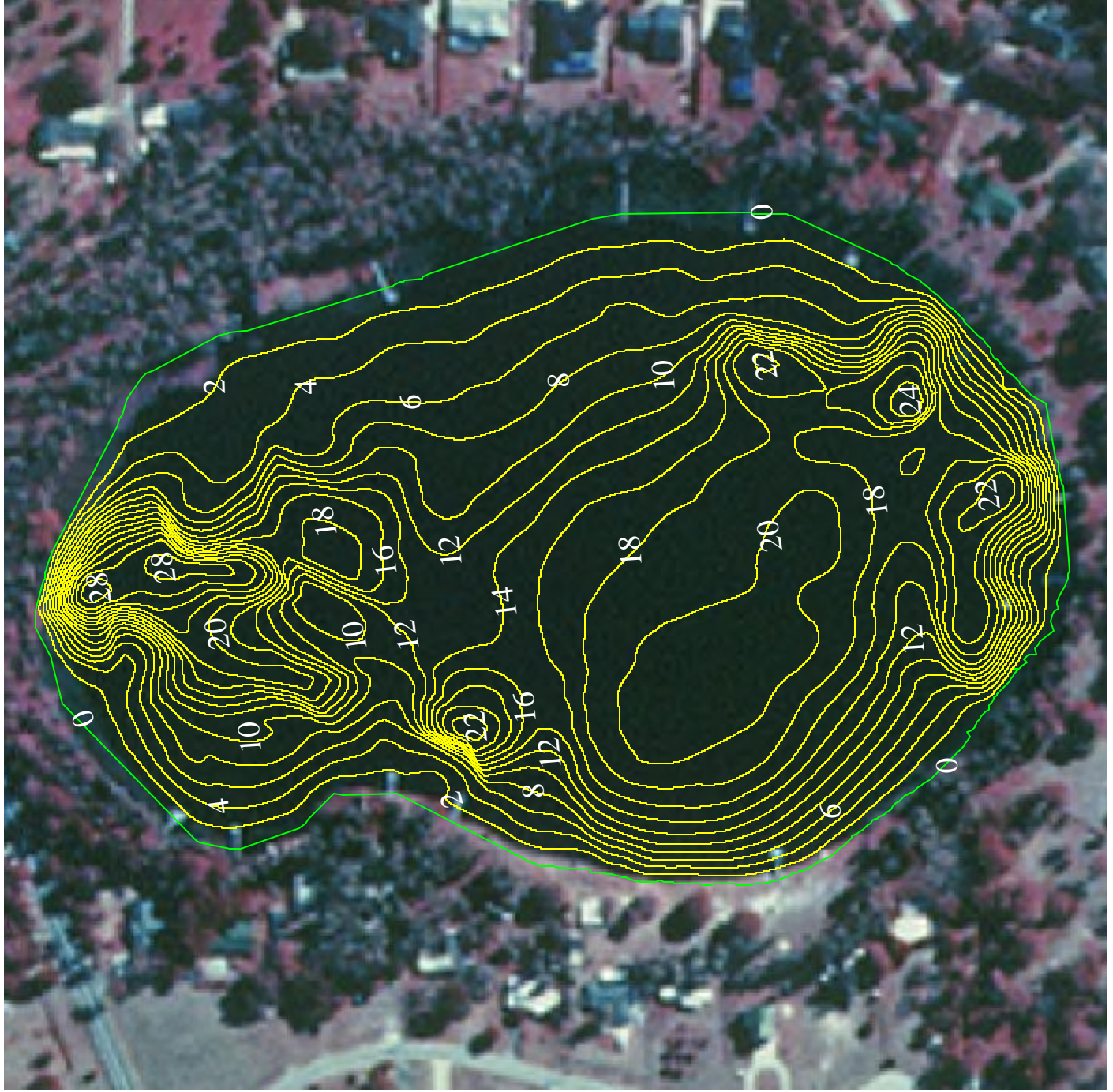
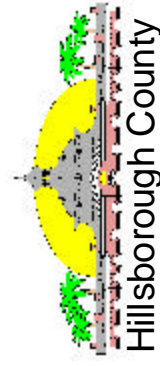
EXPLANATION:

Survey Date August 20, 1999.

Staff gage water level was measured at 49.12 (August 24, 1999). 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.





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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 Elizabeth</u>	<u>Brooker Creek</u> (Average)
Number of Taxa:	41	31
Percent Exotic Plants:	15%	14%

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.

<u>Common Name</u>	<u>Plant Species</u>	<u>Frequency</u>	<u>Habit</u>	<u>Status</u>	<u>EPPC</u>
Filamentous Algae, Algal Mats	Algae, Filamentous	100%	Floating	Native	NL
Lemon Bacopa	Bacopa caroliniana	100%	Submersed	Native	NL
Water Primroses, Primrosewillow	Ludwigia spp.	100%	Emergent	Unknown	NL
Climbing Hempvine	Mikania scandens	88%	Emergent	Native	NL
Banana Lily, Big Floatingheart	Nymphoides aquatica	88%	Floating	Native	NL
Maidencane	Panicum hemitomon	88%	Emergent	Native	NL
Torpedo Grass	Panicum repens	88%	Emergent	Exotic	I
Cypress	Taxodium spp.	88%	Emergent	Native	NL
Swamp Fern	Blechnum serrulatum	75%	Emergent	Native	NL
Manyflower Marshpennywort, Water Penny	Hydrocotyl umbellata	63%	Emergent	Native	NL
Wax Myrtle	Myrica cerifera	63%	Emergent	Native	NL
Spatterdock, Yellow Pondlily	Nuphar lutea var. advena	63%	Floating	Native	NL
Sedge	Cyperus spp.	50%	Emergent	Unknown	NL
Laurel Oak; Diamond Oak	Quercus laurifolia	50%	Emergent	Native	NL
Asian Pennywort, Coinwort, Spadeleaf	Centella asiatica	38%	Emergent	Native	NL
Buttonweed	Diodia virginiana	38%	Emergent	Native	NL

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False Daisy, Yerba De Tajo	<i>Eclipta alba (prostrata)</i>	38%	Emergent	Native	NL
Punk Tree, Melaleuca	<i>Melaleuca quinquenervia</i>	38%	Emergent	Exotic	I
Frog-fruit, Carpetweed, Turkey Tangle Fogf	<i>Phyla nodiflora</i>	38%	Emergent	Native	NL
Smartweed, Knotweed	<i>Polygonum spp.</i>	38%	Emergent	Native	NL
Caesar's-weed	<i>Urena lobata</i>	38%	Emergent	Exotic	II
Southern Red Maple	<i>Acer rubrum var. trilobum</i>	25%	Emergent	Native	NL
Wild Taro, Dasheen, Coco Yam	<i>Colocasia esculenta</i>	25%	Emergent	Exotic	I
Baldwin's Spikerush, Roadgrass	<i>Eleocharis baldwinii</i>	25%	Submersed	Native	NL
Creeping Primrosewillow, Red Ludwigia	<i>Ludwigia repens</i>	25%	Emergent	Native	NL
Sweetbay Magnolia	<i>Magnolia virginiana</i>	25%	Emergent	Native	NL
Pickereel Weed	<i>Pontederia cordata</i>	25%	Emergent	Native	NL
Algal Mats, Floating	Algal spp.	13%	Floating	Unknown	Unknow
Alligator Weed	<i>Alternanthera philoxeroides</i>	13%	Emergent	Exotic	II
Pigweed, Water Hemp	<i>Amaranthus australis</i>	13%	Emergent	Native	NL
Common Bacopa, Herb-Of-Grace	<i>Bacopa monnieri</i>	13%	Submersed	Native	NL
White Beggar-ticks, Romerillo	<i>Bidens alba</i>	13%	Terrestrial	Native	NL
Common Buttonbush	<i>Cephalanthus occidentalis</i>	13%	Emergent	Native	NL
Dayflower	<i>Commelina diffusa</i>	13%	Emergent	Exotic	NL
Fragrant Flatsedge	<i>Cyperus odoratus</i>	13%	Emergent	Native	NL
Southern Wood Fern	<i>Dryopteris ludoviciana</i>	13%	Emergent	Native	NL
Morning Glory	<i>Ipomoea spp.</i>	13%	Emergent	Unknown	NL
Royal Fern	<i>Osmunda regalis</i>	13%	Emergent	Native	NL
Pine Tree	<i>Pinus spp.</i>	13%	Emergent	Native	NL
Poison Ivy	<i>Toxicodendron radicans</i>	13%	Emergent	Native	NL
Cattails	<i>Typha spp.</i>	13%	Emergent	Native	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.

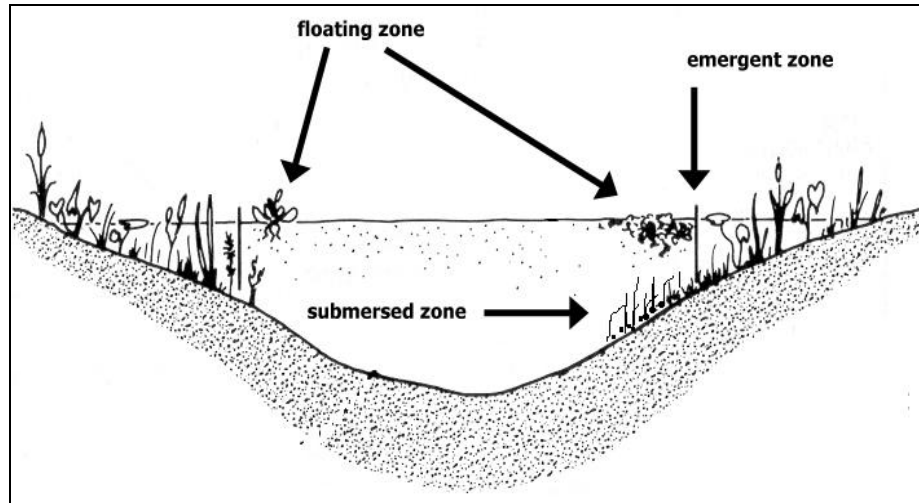


Table 4. Comparison between the average biomass from three zones within your lake and among all lakes assessed within your watershed.

	<u>Lake Elizabeth</u>	<u>Brooker Creek</u> (Average)
Emergent Zone:	6.29	3.71
Floating Zone:	0.66	0.82
Submersed Zone:	6.35	1.63

Number of lakes sampled in your watershed: 25

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:	Spatterdock, Yellow Pondlily	Native
Submersed Zone:	Lemon Bacopa	Native