



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

Mead Lake 10/11/01 Watershed: Tampa Bypass Canal

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): _____

Mean Depth (feet): _____

Maximum Depth (feet): _____

Volume (gallons): _____

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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>Mead Lake</u>	<u>Tampa Bypass Canal</u> (Average)
Number of Taxa:	20	19
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.

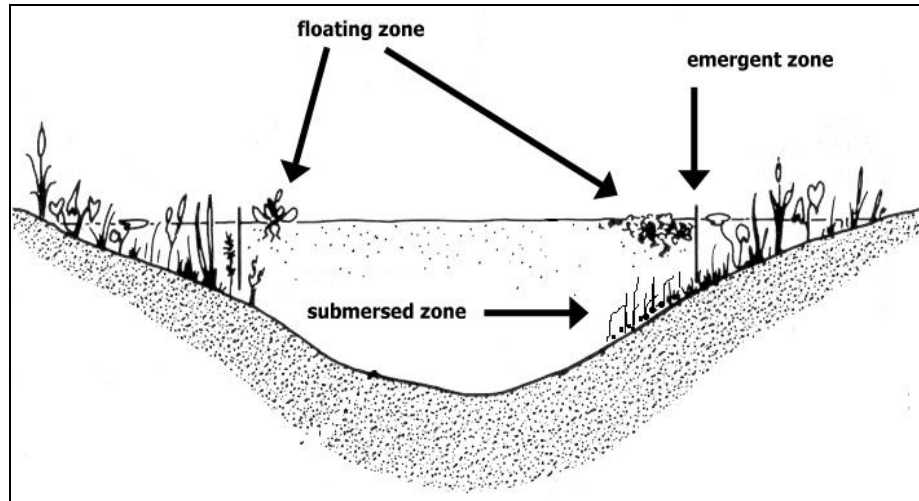
<u>Common Name</u>	<u>Plant Species</u>	<u>Frequency</u>	<u>Habit</u>	<u>Status</u>	<u>EPPC</u>
Carolina Mosquito Fern	Azolla caroliniana	100%	Floating	Native	NL
Water Hyacinth	Eichhornia crassipes	100%	Floating	Exotic	I
Hydrilla, waterthyme	Hydrilla verticillata	100%	Submersed	Exotic	I
Common Duckweed	Lemna spp.	100%	Floating	Native	NL
Water Spangles, Water Fern	Salvinia minima	100%	Floating	Native	NL
Giant Duckweed	Spirodela polyrhiza	100%	Floating	Native	NL
Alligator Weed	Alternanthera philoxeroides	90%	Emergent	Exotic	II
Water Primroses, Primrosewillow	Ludwigia spp.	90%	Emergent	Unknown	NL
Algal Mats, Floating	Algal spp.	80%	Floating	Unknown	Unknow
Maidencane	Panicum hemitomon	80%	Emergent	Native	NL
Willow	Salix spp.	80%	Emergent	Native	NL
Smartweed, Knotweed	Polygonum spp.	60%	Emergent	Native	NL
Baldwin's Spikerush, Roadgrass	Eleocharis baldwinii	50%	Submersed	Native	NL
Climbing Hempvine	Mikania scandens	50%	Emergent	Native	NL
Unidentified Plant Species	UNKNOWN SPP	50%	Unknown	Unknown	Unknow
Creeping Primrosewillow, Red Ludwigia	Ludwigia repens	40%	Emergent	Native	NL

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Burhead Sedge, Cuban Scirpus	Scirpus cubensis	20%	Emergent	Native	NL
Manyflower Marshpennywort, Water Penny	Hydrocotyl umbellata	10%	Emergent	Native	NL
Banana Lily, Big Floatingheart	Nymphoides aquatica	10%	Floating	Native	NL
Bladderwort	Utricularia spp.	10%	Submersed	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.

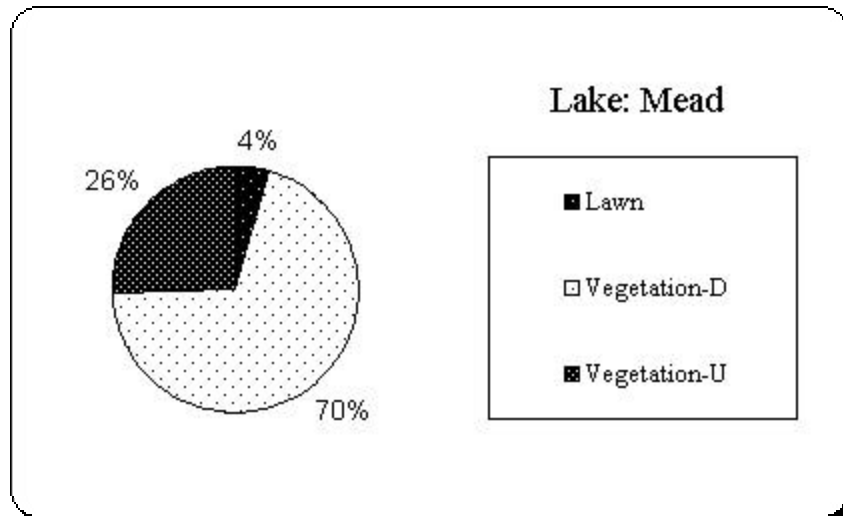




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Habitat Quality

The shoreline is mapped by navigating the circumference of the lake and characterizing the adjacent shore using sophisticated GPS. Categories for characterization include: 1) Lawn 2) Seawall 3) Beach, Bare Soil 4) Undisturbed Vegetation (*Vegetation-U*) 5) Disturbed Vegetation (*Vegetation-D*) 6) Impervious Surface and 7) Ornamentals, etc. The result is an estimate of the percent of each type of shoreline per lake. This information assists in the interpretation of the aquatic plant survey as an indicator of relative habitat quality.



Percent of lake shore types