



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

Sapphire Lake      11/1/01      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): \_\_\_\_\_

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>Sapphire Lake</u> | <u>Rocky/ Brushy Creek</u><br>(Average) |
|------------------------|----------------------|---|
| Number of Taxa:        | 25                   | 34                                      |
| Percent Exotic Plants: | 20%                  | 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.

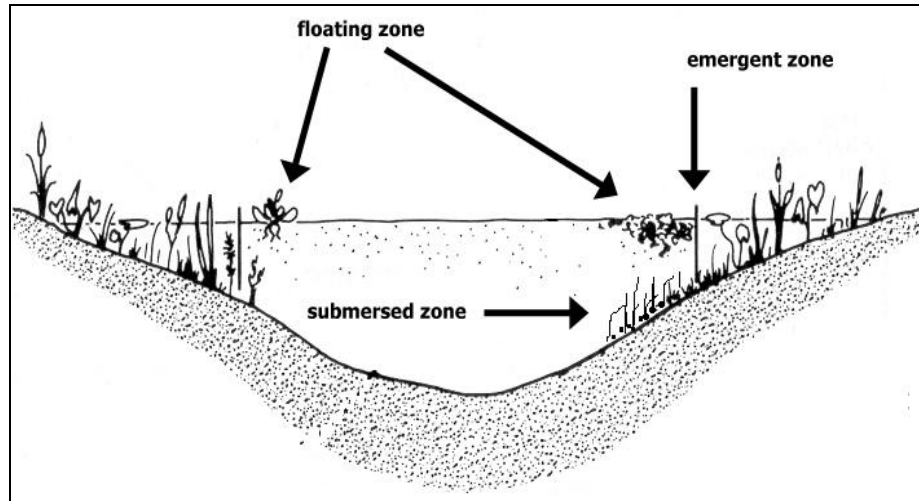
| <u>Common Name</u>                     | <u>Plant Species</u>        | <u>Frequency</u> | <u>Habit</u> | <u>Status</u> | <u>EPPC</u> |
|--|-----------------------------|------------------|--------------|---------------|-------------|
| Torpedo Grass                          | Panicum repens              | 100%             | Emergent     | Exotic        | I           |
| Alligator Weed                         | Alternanthera philoxeroides | 86%              | Emergent     | Exotic        | II          |
| Manyflower Marshpennywort, Water Penny | Hydrocotyl umbellata        | 86%              | Emergent     | Native        | NL          |
| Common Bacopa, Herb-Of-Grace           | Bacopa monnieri             | 71%              | Submersed    | Native        | NL          |
| Cypress                                | Taxodium spp.               | 71%              | Emergent     | Native        | NL          |
| Climbing Hempvine                      | Mikania scandens            | 57%              | Emergent     | Native        | NL          |
| Maidencane                             | Panicum hemitomon           | 57%              | Emergent     | Native        | NL          |
| Bur Marigold                           | Bidens spp.                 | 43%              | Emergent     | Native        | NL          |
| Sedge                                  | Cyperus spp.                | 43%              | Emergent     | Unknown       | NL          |
| Baldwin's Spikerush, Roadgrass         | Eleocharis baldwinii        | 43%              | Submersed    | Native        | NL          |
| Punk Tree, Melaleuca                   | Melaleuca quinquenervia     | 43%              | Emergent     | Exotic        | I           |
| Cattails                               | Typha spp.                  | 43%              | Emergent     | Native        | NL          |
| Southern Red Maple                     | Acer rubrum var. trilobum   | 29%              | Emergent     | Native        | NL          |
| Water Primroses, Primrosewillow        | Ludwigia spp.               | 29%              | Emergent     | Unknown       | NL          |
| Spatterdock, Yellow Pondlily           | Nuphar lutea var. advena    | 29%              | Floating     | Native        | NL          |
| Algae                                  | Periphyton spp.             | 29%              | Submersed    | Native        | NL          |

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|                                      |                          |     |          |         |        |
|--------------------------------------|--------------------------|-----|----------|---------|--------|
| Smartweed, Knotweed                  | Polygonum spp.           | 29% | Emergent | Native  | NL     |
| Algal Mats, Floating                 | Algal spp.               | 14% | Floating | Unknown | Unknow |
| Asian Pennywort, Coinwort, Spadeleaf | Centella asiatica        | 14% | Emergent | Native  | NL     |
| Wild Taro, Dasheen, Coco Yam         | Colocasia esculenta      | 14% | Emergent | Exotic  | I      |
| Fragrant Flatsedge                   | Cyperus odoratus         | 14% | Emergent | Native  | NL     |
| Wax Myrtle                           | Myrica cerifera          | 14% | Emergent | Native  | NL     |
| Marsh Fleabane, Camphorweed          | Pluchea spp.             | 14% | Emergent | Native  | NL     |
| Willow                               | Salix spp.               | 14% | Emergent | Native  | NL     |
| Brazilian Pepper                     | Schinus terebinthifolius | 14% | Emergent | Exotic  | I      |

### 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.

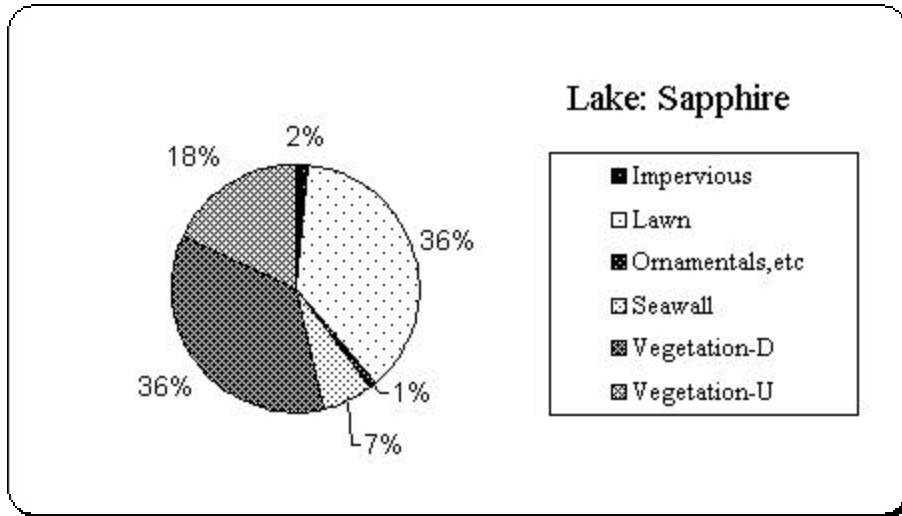




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### Habitat Quality

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