

Lake Assessment Report

RED BUG LAKE

6/24/2003

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):	<u>26.40</u>
Mean Depth (feet):	<u>5.20</u>
Maximum Depth (feet):	<u>12.00</u>
Volume (gallons):	<u>44,944,525</u>



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

Red Bug Lake

Section Township Range
23-21-30

 Contour Lines Expressed
in 2-Ft intervals

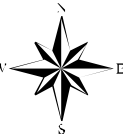
 Estimated Lake
Perimeter

EXPLANATION:

Assessment Date: June 24, 2003
Lake water level was 43.75 ft above
sea level when the lake was assessed.
Contours are expressed in absolute
depth below this level and may not
exclude the presence of submerged
aquatic vegetation.

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 Seminole County
Stormwater Division.



0 55 110 220 330 440
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> RED BUG LAKE	<u>Watershed</u> Howell Creek
	<i>(Average)</i>	
Number of Taxa:	29	40
Percent Exotic Plants:	14%	18%

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
Spatterdock, Yellow Pondlily	Nuphar lutea	100%	Floating	Native	NL
Pickereel Weed	Pontederia cordata	100%	Emergent	Native	NL
American White Water Lily, Fragrant Water Lily	Nymphaea odorata	90%	Floating	Native	NL
Maidencane	Panicum hemitomon	80%	Emergent	Native	NL
Torpedo Grass	Panicum repens	80%	Emergent	Exotic	I
Southern Red Maple	Acer rubrum	70%	Emergent	Native	NL
Dahoon Holly	Ilex cassine	70%	Emergent	Native	NL
Duck Potato	Sagittaria lancifolia	70%	Emergent	Native	NL
Cattails	Typha spp.	70%	Emergent	Native	NL
Mexican Primrosewillow, Long-stalked Ludwigia	Ludwigia octovalvis	50%	Emergent	Native	NL
Sweetbay Magnolia	Magnolia virginiana	50%	Emergent	Native	NL
Cinnamon Fern	Osmunda cinnamomea	50%	Emergent	Native	NL

Buttonbush	<i>Cephalanthus occidentalis</i>	40%	Emergent	Native	NL
Southern Naiad	<i>Najas guadelupensis</i>	40%	Submersed	Native	NL
Royal Fern	<i>Osmunda regalis</i>	40%	Emergent	Native	NL
Para Grass	<i>Urochloa mutica</i>	40%	Emergent	Exotic	I
Manyflower Marshpennywort, Water Pennywort	<i>Hydrocotyl umbellata</i>	30%	Emergent	Native	NL
Climbing Hempvine	<i>Mikania scandens</i>	30%	Emergent	Native	NL
Algal Mats, Floating	Algal spp.	20%	Floating	Unknown	Unknown
Baldwin's Spikerush, Roadgrass	<i>Eleocharis baldwinii</i>	20%	Submersed	Native	NL
Wax Myrtle	<i>Myrica cerifera</i>	20%	Emergent	Native	NL
Stonewort	<i>Nitella spp.</i>	20%	Submersed	Native	NL
Water Spangles, Water Fern	<i>Salvinia minima</i>	20%	Floating	Native	NL
Jamaica Swamp Saw Grass	<i>Cladium jamaicense</i>	10%	Emergent	Native	NL
Umbrella Flat Sedge	<i>Cyperus alternifolius</i>	10%	Emergent	Exotic	II
Shore Rush, Grassleaf Rush	<i>Juncus marginatus</i>	10%	Emergent	Native	NL
Rush	<i>Juncus spp.</i>	10%	Emergent	Native	NL
Carolina Willow	<i>Salix caroliniana</i>	10%	Emergent	Native	NL
Creeping Oxeye	<i>Wedelia trilobata</i>	10%	Emergent	Exotic	II