MIRROR LAKE

LAKE BIOASSESSMENTS

MARCH – MAY 2015

Greetings Mirror Lake Residents,

Please find the latest bioassessment report for your lake below. Key highlights of this update include:

- Hydrilla status
- Submersed aquatic vegetation (SAV)
- Emergent vegetation
- Recommendations for you and your waterbody
- **Aquatic Plant of the Month- Factsheet Attached (may or may not be present in your waterbody)**

Bioassessment

On **March 11th, 2015**, SCLMP personnel, Thomas Calhoun and Sophia Pengra surveyed the aquatic plants in **Mirror Lake.**

At the time of the inspection the water level was high. No hydrilla was observed. We will continue to monitor the hydrilla.

Seven species of native submersed aquatic vegetation (SAV) were found during the inspection. These native species included: roadgrass, baby's tears, eelgrass to 4 feet, lemon bacopa to 3 feet, and three species of bladderwort to 7 feet. Bladderwort was the dominant species of SAV found in Mirror Lake, followed by eelgrass. Native SAV plays an important part within Mirror Lake by providing wildlife habitat, reducing nutrients, and competing for space with hydrilla.

Photo: Bladderwort (native)

Photo: Bladderwort in bloom (native)

Native emergent vegetation found during the survey included: canna, slender spike rush, pennywort, hempweed, yellow cow lily, fragrant water lily, banana lily, pickerelweed, maidencane, Carolina willow, cordgrass, fire flag, and duck potato.

Photo: Slender spike rush (native)

Invasive emergent vegetation included: alligator weed, wild taro, torpedo grass, wedelia, and cattail. No American lotus was present as in previous months. Cattail is coming back and will be targeted during the next herbicide treatment. Access corridors throughout the lake are open and navigable.

Photo: Wild taro (invasive)

Photo: Open access corridor

The water elevation at the time of inspection was 59.31 feet above sea level. The secchi reading (measurement for water clarity) was 7.9 feet in a depth of 11 feet. No grass carp fish were observed during this inspection.

Bioassessment

On **April 15th, 2015**, SCLMP personnel, Thomas Calhoun and Sophia Pengra surveyed the aquatic plants in **Mirror Lake.**

Several sprigs of hydrilla were observed near the boat ramp and one sprig of hydrilla was observed on the northwest side of the lake. We will continue to monitor the hydrilla.

Seven species of native submersed aquatic vegetation (SAV) were found during the inspection. These native species included: southern naiad, baby's tears, eelgrass to 6 feet, lemon bacopa to 3 feet, and three species of bladderwort to 8 feet. Bladderwort was the dominant species of SAV found, with a major increase of topped out bladderwort observed on the south end of the lake. Native SAV plays an important part within Mirror Lake by providing wildlife habitat, reducing nutrients, and competing for space with hydrilla.

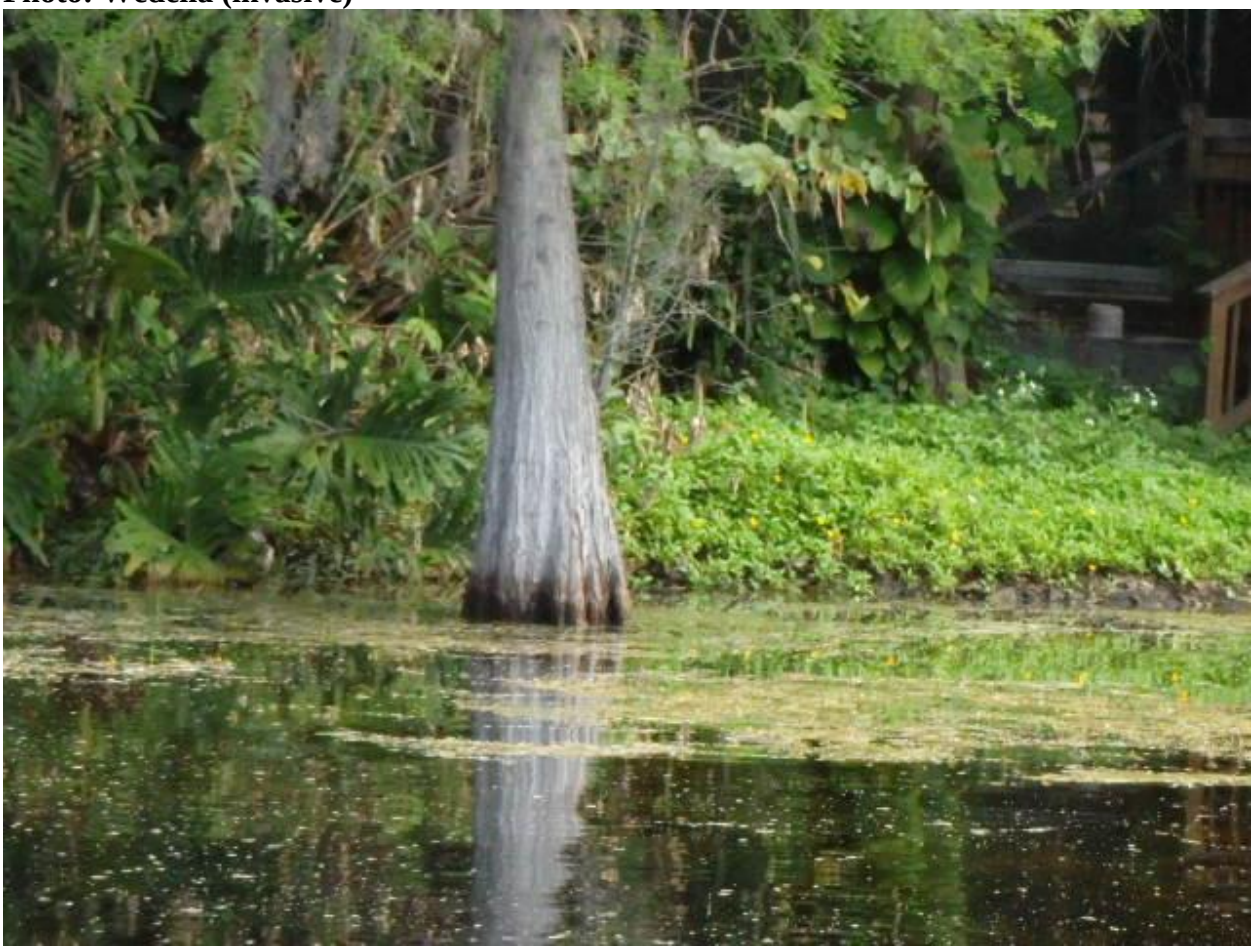
Photo: Eelgrass (native)

Native emergent vegetation found during the survey included: canna, iris, spike rush, pennywort, climbing hempweed, yellow cow lily, fragrant water lily, banana lily, pickerelweed, maidencane, Carolina willow, cordgrass, fire flag, buttonbush, American lotus, watermeal, and duck potato.

Photo: Canna (native)

Invasive emergent vegetation included: alligator weed, wild taro, torpedo grass, wedelia, and cattail. Cattail showed signs of recent treatment. Lily pads and bladderwort will be targeted during the next treatment to ensure access corridors throughout the lake remain open and navigable. Additionally, one grass carp per acre will be added to the lake to help control SAV.

Photo: Wedelia (invasive)



The water elevation at the time of inspection was 59.03 feet above sea level, which was slightly lower than last month's reading of 59.31 feet above sea level. The secchi reading (measurement for water clarity) was visible on bottom in a depth of 8 feet. No grass carp fish were observed during this inspection.

5-8-15

On **May 8th, 2015**, 34 fish were added to Lake Mirror to assist in control of SAVs.

Photo: Grass carp fish added to Mirror Lake.

Recommendations for your waterbody:

1 Work together with other lakefront owners. Have *at least* one annual lake association meeting, invite guest speakers (such as county or state biologists), and discuss lake specific issues, especially nutrients/lake management recommendations. SCLMP staff will be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shorelines (such as pickerelweed, duck potato, and canna).

2 Consider increasing street sweeping services during times of peak leaf fall to ensure that this debris does not enter waterways. Leaf debris contains high levels of phosphorous that can negatively impact your lakes.

3 Increase educational outreach programs, i.e. Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of personal pollution by: decreasing fertilizer usage, using only phosphorous free and slow release nitrogen types of fertilizers, keeping a functional shoreline with beneficial native aquatic plants, and by keeping grass clippings out of your lake and the stormdrains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.

4 Help spread the word! Obtain email addresses from neighbors not currently on the distribution list so that these reports can be shared with everyone. Valuable information is contained within these assessments.

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SEMINOLE COUNTY WATERSHED MANAGEMENT DIVISION

Aquatic Plant of the Month

Bladderwort (*Utricularia* species) : A Florida Native

14 Species of Bladderwort exist in Florida, all of which are native.

Identification

Bladderworts are annual or perennial plants which lack roots and are free floating. The entire free-floating plant is typically 8 inches tall with yellow, purple, or white flowers that rise above the water's surface. Underwater, the plant has fleshy, inflated stems that are filled with air and allow it to float. The leaves are forked and often have a very fine capillary appearance.

This unique carnivorous plant utilizes small oval "bladders" on its underwater leaves to trap and digest small aquatic organisms. Hairs at the edge of the bladder act as a trigger, causing the trap to spring open and draw in water (and organisms) when contacted.

Wildlife Value

Common bladderwort is used by several insects, waterfowl, and mammals as a food source. The stems also provide shelter and a place for wildlife to lay eggs.

Native submersed aquatic plants provide habitat for several micro- and macroinvertebrate species, which in turn provide a source of food for fish and other aquatic wildlife species including reptiles, amphibians, and waterfowl. Once aquatic plants die, their decomposing parts provide food (referred to as "detritus") for several aquatic invertebrates.

Additionally, native submersed plants play an important role in the aquatic ecosystem by reducing nutrients within the waterbody and by competing with invasive species for space.

Control

Although native, bladderwort may impede recreational access. For questions concerning control of bladderwort or to apply for a free aquatic plant removal permit, please contact your state agency, the Florida Fish and Wildlife Conservation Commission, online at: http://myfwc.com/license/aquatic-plants or by calling 863-534-7074.

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

Sources:

Texas A&M AgriLife Extension. (2015). *Bladderwort*. Retrieved from http://aquaplant.tamu.edu/plant-identification/alphabetical-index/bladderwort/

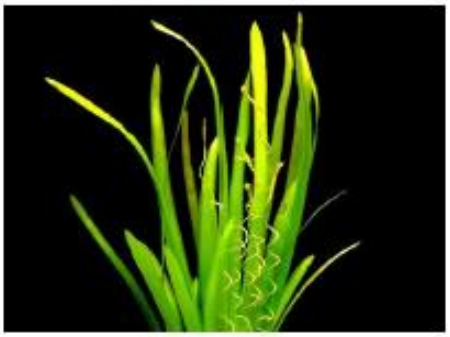
Stritch, L. (n.d.). *Common Bladderwort*. U.S. Forest Service. Retrieved from http://www.fs.fed.us/wildflowers/plant-of-the-week/utricularia_macrorhiza.shtml

Wellendorf, N. (2011, April 27). *How to Distinguish the Aquatic Bladderworts* [PDF]. Retrieved from http://www.dep.state.fl.us/water/frameworks/docs/plants/field-id-utricularia-species.pdf

SEMINOLE COUNTY WATERSHED MANAGEMENT DIVISION

Aquatic Plant of the Month

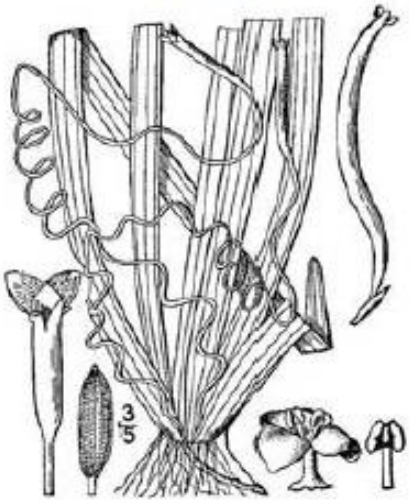
Eelgrass (*Vallisneria americana*): A Florida Native



Eelgrass, also known as tapegrass, is native to the state of Florida.

Identification

Eelgrass is a submersed, perennial plant that can be found throughout the state in both still and flowing waters. Eelgrass leaves often resemble tape or ribbon. They are about an inch wide with raised veins and rounded tips. The leaves can grow several feet in length and their upper parts can often be found floating along the water surface. Eelgrass produces both male and female flowers, however, the small, white female flowers are most often seen, as their long, corkscrew-like flower stalks reach the surface of the water.

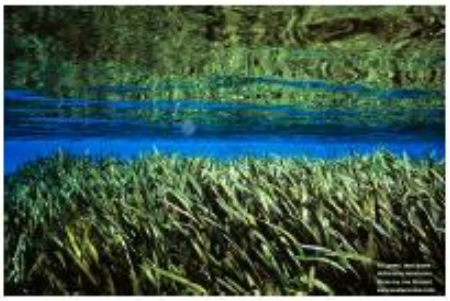


Wildlife Value

Eelgrass is an important food source for the endangered West Indian manatee (*Trichechus manatus*) and various species of waterfowl. Additionally, eelgrass provides important habitat, protection, and nursery grounds for fish.

Native submersed aquatic plants provide habitat for several micro- and macroinvertebrate species, which in turn provide a source of food for fish and other aquatic wildlife species including reptiles, amphibians, and waterfowl. Once aquatic plants die, their decomposing parts provide food (referred to as "detritus") for several aquatic invertebrates.

Additionally, native submersed plants play an important role in the aquatic ecosystem by reducing nutrients within the waterbody and by competing with invasive species for space.



Control

Although native, eelgrass may impede recreational access. For questions concerning control of eelgrass or to apply for a free aquatic plant removal permit, please contact your state agency, the Florida Fish and Wildlife Conservation Commission, online at: http://myfwc.com/license/aquatic-plants or by calling 407-858-6170.

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

Sources:

NOAA. (2012, October 22). *Eelgrass-Habitat of the Month*. Retrieved from http://www.habitat.noaa.gov/abouthabitat/eelgrass.html

UF/IFAS. (2014). *Eel-grass, tape-grass*. Retrieved from http://plants.ifas.ufl.edu/node/465

UF/IFAS. (2014). *Algae*. Retrieved from http://plants.ifas.ufl.edu/manage/why-manage-plants/algae

Washington State Department of Ecology. (n.d.). *Vallisneria Americana*. Retrieved from http://www.ecy.wa.gov/programs/wq/plants/plantid2/descriptions/valame.html