Greetings Spring Lake!

Below please find the latest bioassessment for your lake. Our next scheduled bioassessment will be **August 6th**; weather permitting. Key highlights of this update will include:

- Hydrilla observations- hydrilla plants found during this inspection
- Eelgrass corridor maintenance- treatments on hold due to higher water elevation
- Increase in water elevation- easier navigation as result
- Recommendations for you and your lake

On **July 2nd**, **2013**, Seminole County Lake Management Program (SCLMP) staff, Thomas Calhoun and Gloria Eby, surveyed the aquatic plants in **Spring Lake**.

Only 2 plants of rooted hydrilla were found during inspection at a depth of 6 feet. Native submersed aquatic plants observed during the inspection included; eelgrass to a depth of 6 feet, pondweed to 6 feet, water hyssop to 2 feet, and nitella to 2.5 feet. Nitella was observed to be expanding in biomass from prior survey (May 2013). Eelgrass continues to be the dominant SAV with blades reaching the surface from a depth of 6 feet. The eelgrass corridors were found in good condition especially with elevated lake levels. With the rise in water elevation, eelgrass corridor maintenance treatments will be on hold as access is currently not impeded. Additionally, the cost and successes of treatments are a large factor to consider when much of the plant is located in deeper water.

Photo: Nitella (left) and hydrilla (right) shown mixed in with eelgrass.

The MSBU funded herbicide applicator continues to treat the torpedo grass around the lake as well as cattails, pennywort, and primrose willow. It is encouraged to remove the torpedo grass once the contractor has treated it, allowing for natives to expand.

The water elevation during the time of the inspection was 63.45 feet above sea level; an increase from the previous survey of 63.00 feet. The secchi reading (measurement for water clarity) was 3.6 feet which is an increase from prior survey of 1.5 feet. No grass carp fish were observed during this inspection.

Recommendations for your lake:

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 would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).

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

3 Increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of personal pollution by using low fertilizer use; phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass clippings out of your storm drains leading to the lake. All these activities aid in protecting your waterbody! Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.

Greetings Spring Lake!

Below please find the latest bioassessment for your lake. Our next scheduled bioassessment will be **July 2nd**, weather permitting. Key highlights of this update will include:

- Hydrilla observations- hydrilla plant fragments found during this inspection
- Eelgrass corridor maintenance- treatments conducted with impacts to plant
- Encouragement of torpedo grass removal
- Increase in water elevation- easier navigation as result
- Recommendations for you and your lake

On **May 7th**, **2013**, Seminole County Lake Management Program (SCLMP) staff, Marie Lackey and Gloria Eby, surveyed the aquatic plants in **Spring Lake**.

Only plant fragments of hydrilla were found floating during inspection. Lake samples taken did not find any rooted/established hydrilla at this time. Native submersed aquatic plants observed during the inspection included eelgrass to a depth of 8 feet and nitella to 3 feet. Eelgrass continues to be the dominant SAV with blades reaching the surface from a depth of 6 feet. The eelgrass corridors were found in good condition with some locations requiring maintenance/treatment. This maintenance treatment took place the week of April 22nd and a retreatment is currently being coordinated.

The navigational corridor is currently open and navigable. This corridor (as indicated on map below in green) was previously marked with buoys connecting the two deeper lobes of Spring Lake. This would be the third occurrence in which the buoys were removed from the lake. *Please continue to navigate in the shallow areas with caution especially with current low water conditions.*

Map: Eelgrass access corridor (in green) and illustrated navigable loop (in yellow).

Photo: Eelgrass with coiled flower stalk.

Photo: Nitella (left) and pondweed (right) shown mixed in with eelgrass.

The MSBU funded herbicide applicator continues to treat the torpedo grass around the lake as well as cattails, pennywort, and primrose willow. It is encouraged to remove the torpedo grass once the contractor has treated it, allowing for natives to expand.

Photo: Example of treated torpedo grass around duck potato.

The water elevation during the time of the inspection was 63.00 feet above sea level; an increase from the previous survey of 62.04 feet. The secchi reading (measurement for water clarity) was 1.5 feet which is a decrease from prior survey of 1.9 feet. One sizable grass carp fish was observed during this inspection.

Recommendations for your lake:

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 would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).

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

3 Increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of personal pollution by using low fertilizer use; phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass clippings out of your storm drains leading to the lake. All these activities aid in protecting your waterbody! Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.

Greetings Spring Lake and Happy New Year!

Below please find the latest assessment for your lake. Our next scheduled assessment will be January 8th, weather permitting. Key highlights of this update will include:

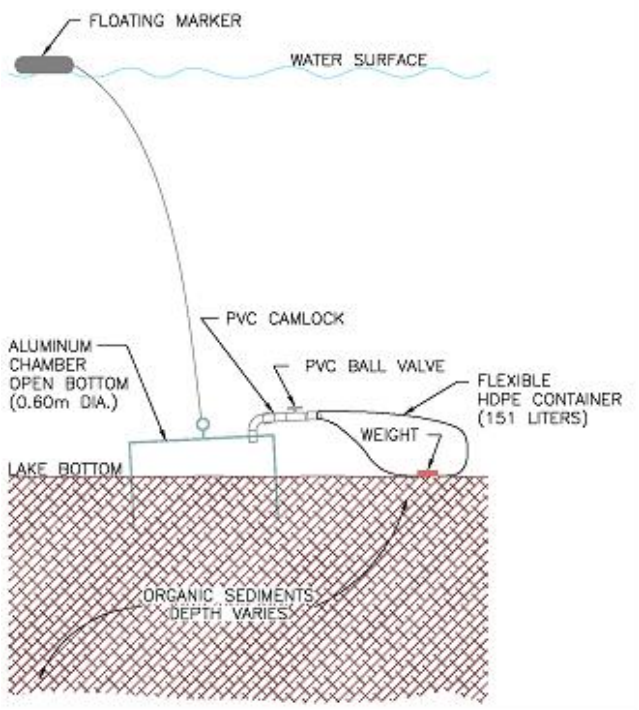
- Spring Lake Water Quality Study
- Hydrilla observations- no hydrilla found nine months in a row
- Encouragement of torpedo grass removal
- Recommendations for you and your lake

Spring Lake Study

Environmental Research & Design, Inc. (ERD) is currently conducting a study to develop a water and nutrient budget for Spring Lake. This study, funded by Seminole County, includes a 12 month field monitoring program to assist in quantifying water and nutrient inputs to the lake. One of the inputs under evaluation by ERD is groundwater seepage, which consists of shallow subsurface inflow around the perimeter of the lake. Groundwater seepage has been shown to be a significant input to many lakes in the Central Florida area. This input is evaluated using an aluminum underwater chamber which is placed on the bottom of the lake. A schematic of a typical chamber is shown below. Water, which seeps into the lake from groundwater, is collected in a plastic bag that is attached to the seepage meter. The bag is retrieved by a diver, and the volume of water is measured and a sample is collected for lab analyses. This information is used to estimate the volume and quality of groundwater seepage entering the lake.

A total of 15 seepage meters are currently installed in Spring Lake by ERD. These meters will remain in the lake for the 12 month field monitoring period. ERD personnel will collect samples from the meters on a monthly basis. The locations of the seepage meters are indicated by orange or white floats connected to the meter by a steel cable.

Schematic and photo example of seepage meter:



Please do not disturb this equipment. Valuable data for the lake will be lost in the event of vandalism. If you notice a meter which has been damaged, please call ERD at **407-855-9465**.

Photo: Buoy indicating seepage meter in center of lake.

12/20/2012

On **December 20th, 2012**, Seminole County Lake Management Program (SCLMP) staff Thomas Calhoun and Devin Whitney surveyed the aquatic plants of **Spring Lake**.

No hydrilla was found during this inspection. This is the ninth month in a row that the plant was not observed. Four native submersed aquatic plants were found during the inspection which included eelgrass to a depth of 6 feet, southern naiad to a depth of 3 feet, stonewort to a depth of 3 feet and baby's tears to a depth of 3 feet. Eelgrass continues to be the dominant SAV with blades reaching the surface from a depth of 5 feet. The eelgrass corridors were found open during this inspection. The corridors will continue to be monitored to see if treatment will be needed.

Photo: Baby's tears.

In many areas pickerelweed, duck potato, fire flag and canna are continuing to expand to the point that native species are the dominant vegetation. After torpedo grass has been treated and has died back, it is a great time to pull the dead grass to allow for natives to expand.

Photo: Pickerelweed expanding along shoreline.

The water elevation during the time of the inspection was 62.01 feet above sea level. The secchi reading (measurement for water clarity) was 3.1 feet in a depth of 12.6 feet. No grass carp fish were seen during this inspection.

11/21/2012

On **November 21st, 2012**, Seminole County Lake Management Program (SCLMP) staff Thomas Calhoun and Devin Whitney surveyed the aquatic plants of **Spring Lake**.

No hydrilla was found during this inspection. This is the eighth month in a row that the plant was not observed. Also again four native submersed aquatic plants were found during the inspection which included eelgrass to a depth of 6 feet, southern naiad to a depth of 3 feet, stonewort to a depth of 3 feet and baby's tears to a depth of 3 feet. Eelgrass continues to be the dominant SAV with blades reaching the surface from a depth of 5 feet. These native SAV species are playing an important role in competing for space with hydrilla. The eelgrass corridors were found open during this inspection.

Photo: Birds feeding in eelgrass along the shoreline.

Invasive shoreline plants found during the inspection included; torpedo grass, cattail, alligator weed, umbrella flat sedge and elephant ear. However, in many areas pickerelweed, duck potato, fire flag and canna has expanded to the point that native species are the dominant vegetation.

Photo: Duck potato expanding along shoreline.

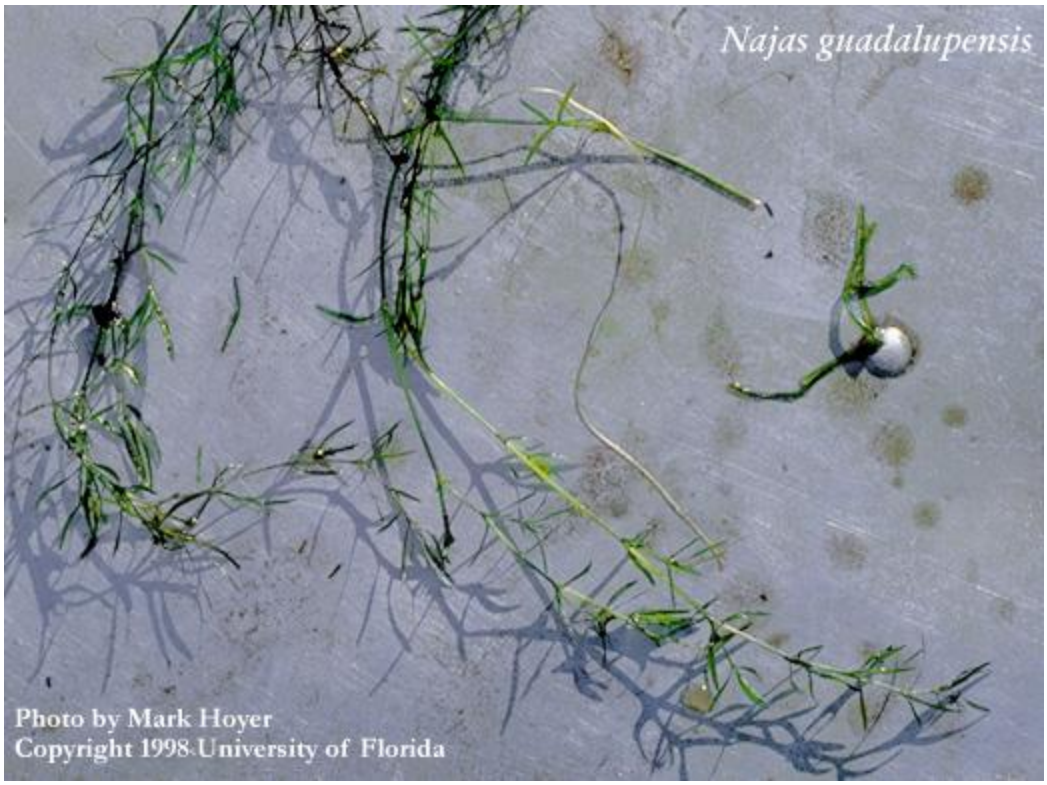
The water elevation during the time of the inspection was 62.64 feet above sea level. The secchi reading (measurement for water clarity) was 2.8 feet in a depth of 10.4 feet. One grass carp fish was seen during this inspection.

10/2/2012

On **October 2nd, 2012**, Seminole County Lake Management Program (SCLMP) staff Thomas Calhoun, Marie Lackey and FWC regional biologist, C.J. Greene, surveyed the aquatic plants of **Spring Lake**.

No hydrilla was found during this inspection. This is the seventh month in a row that the plant was not observed. Four native submersed aquatic plants were found during the inspection which included eelgrass to a depth of 7 feet, southern naiad to a depth of 3 feet, stonewort to a depth of 3 feet and baby's tears to a depth of 3 feet. Eelgrass continues to be the dominant SAV with blades reaching the surface from a depth of 5 feet. The eelgrass corridors were found open during this inspection.

Photo: Native SAV southern naiad.



Invasive shoreline plants found during the inspection included; torpedo grass, cattail and elephant ear. These invasives will continue to be targeted by the Seminole County herbicide contractor. Also found during the inspection were the invasive Brazilian pepper tree and camphor tree.

Photo: Brazilian pepper tree.

The water elevation during the time of the inspection was 63.1 feet above sea level. The secchi reading (measurement for water clarity) was 2.8 feet in a depth of 10.4 feet. No grass carp fish were seen during this inspection.

Recommendations for your lake:

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 would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).

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