

Greetings please find the latest assessment for your lake below. Key highlights of this update will include:

- Lake Vegetation Index assessment and results
- Submersed aquatic vegetation updates- increase in native plants!
- Water hyacinth updates
- Recommendations for you and your lake

On **September 17th, 2014**, Seminole County Lake Management and Water Quality Program staff (Gloria Eby, Marianne Pluchino, and Thomas Calhoun) surveyed the aquatic plants in **Buck Lake** and conducted a Lake Vegetation Index (LVI).

LVI was created by the Florida Department of Environmental Protection as a rapid screening tool (bioassessment) for ecological condition; it determines how closely a lake's flora (aquatic plants) resembles that of an undisturbed lake. Historical LVI scores for Buck Lake range from 42 to 56 with the most current score being 42; impaired.

LVI Range	Description
78-100	Exceptional
43-77	Healthy
0-42	Impaired

Buck Lake is 160 surface acres in size with a mean depth of 4.5 feet, maximum depth of 15 feet, and is located in the Big Econlockhatchee watershed. The current Trophic State Index (TSI) is 24 (taken 6-12-2014) with scores ranging from 12-56; all within the good category. This information can be viewed online at: <http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7520&wbodyatlas=lake>

Six native submersed aquatic vegetation (SAV) were observed during this inspection which included road grass to a depth 4 feet, stonewort (*Nitella spp.*) to 3 feet, and three bladderwort species to 3 feet.

Photo: Road-grass.



Photo: Native SAV observed in Buck Lake (mainly road grass).



Water hyacinth, a floating invasive-exotic aquatic plant continues to expand in the northern portion of the lake, now consisting of over 60% of the shoreline (photo attached). Water hyacinth is now coined one of the worst floating weeds in Florida. A new publication on this plant can be found at: <http://edis.ifas.ufl.edu/pdffiles/AG/AG38500.pdf>.

Five invasive plants and trees were observed during this inspection which included: water hyacinth (*Eichornia crassipes*), bur-head sedge (*Scirpus cubensis*), torpedo grass (*Panicum repens*), Chinese tallow tree (*Sapium sebiferum*), and creeping oxeye (*Wedelia trilobata*). With a little effort, most of these invasives could be controlled, especially the water hyacinth.

Photo: Water hyacinth images taken during inspection.



The Secchi reading (a measurement for water clarity) was 6.7 feet in a depth of 7.4 feet. Historic readings have been 1.6 to 10.6 feet.

Lake Recommendations:

1 Work together or establish a lake association with other lakefront owners to control and if possible eliminate invasive plants observed during this survey and increase native aquatic plantings along shoreline (such as pickerelweed, maidencane grass, and duck potato). Have at least one annual lake association meeting, invite guest speakers (such as county or state biologists) and discuss lake specific issues, especially lake management recommendations. Seminole County Lake Management staff would be glad to present our findings from this and other surveys. Contact Gloria Eby at (407) 665-2439 for assistance.

2 Treat invasives (water hyacinth, torpedo grass, and bur-head sedge): Either do it yourself and establish a spray program or hire a contracted aquatic herbicide application company (we can provide a list of companies). Control of aquatic and wetland plants could require a free Florida Fish and Wildlife Conservation Commission (FWC) aquatic plant control permit. Contact FWC at (407) 858-6170 for a permit.

3 These recommendations could be managed by Seminole County by establishing a Municipal Service Benefit Unit (MSBU); a funding format for aquatic weed control services via a special assessment. For additional information contact Carol Watral at (407) 665-7164 or cwatral@seminolecountyfl.gov

4 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 Buck Lake Residents! Please find the latest bioassessment for your lake below.

Key highlights of this update will include:

- Status of Submersed Aquatic Vegetation
- Status of water hyacinths-continues to expand lake-wide
- Recommendations for you and your lake

On **September 18th, 2013**, Seminole County Lake Management Program (SCLMP) staff (Thomas Calhoun, Gloria Eby, and Marianne Pluchino) surveyed the aquatic plants and conducted a Lake Vegetation Assessment (LVI) in **Buck Lake**.

The LVI was created by the Florida Department of Environmental Protection as a rapid screening tool (bioassessment) for ecological condition; it determines how closely a lake's flora (aquatic plants) resembles that of an undisturbed lake.

Buck Gully Lake is 160 surface acres in size with a mean depth of 4.5 feet, maximum depth of 15.3 feet, and is located in the Big Econlockhatchee watershed. Historical LVI scores range from 40 to 56 with 54 being the most current and in the healthy category.

LVI Range	Description
78-100	Exceptional
38-77	Healthy
0-37	Impaired

The native submersed aquatic vegetation (SAV) observed during this inspection included: road grass to a depth 4.5 feet, stone wort to a depth of 4.0 feet, eelgrass to a depth of 4.5 feet, and 2 types of bladderwort found to a depth of 2.5 feet. This is an increase in both diversity and biomass. Native SAV plays an important role in the aquatic ecosystem by providing habitat and reducing nutrients within the lake.

Photo: Road grass found during the inspection.



Photo: Eelgrass found during the inspection.



A good diversity of native emergent shoreline vegetation was observed during the inspection. Native species included: pickerelweed, saw grass, soft rush, rush fuirena, button bush, and maidencane.

Photo: Example of maidencane.



The invasive plant species observed during this inspection included: water hyacinth, bur-head sedge, and primrose willow. Bur-head sedge has expanded along many of the shorelines of the lake. This species of sedge can grow into a large floating mat that can out-compete neighboring plants by shading them, and can creep further into the lake thereby reducing the acreage of open navigable water. The invasive water hyacinth has also increased in extent since the previous inspection in most areas of the lake. It is recommended that both of these species are treated by a licensed herbicide applicator and permitted by FWC.

Photo: Bur-head sedge along shoreline.



Photo: Water hyacinth along shoreline.



The Secchi reading (a measurement for water clarity) was 2.8 feet in a depth of 11.4 feet compared to 5.9 feet on the previous survey. Historic readings have been 1.6 to 10.6 feet. The water elevation at the end of September was 22.3 feet above sea level. This information and much more is available on the Seminole County Wateratlas website at: <http://www.seminole.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7520>

Lake Recommendations:

1 Work together or establish a lake association with other lakefront owners in order to control, and if possible eliminate, invasive plants observed during this survey and increase native aquatic plantings along shoreline (such as pickerelweed, maidencane grass, and duck potato). Have at least one annual lake association meeting, invite guest speakers (such as county or state biologists) and discuss lake specific issues, especially lake management recommendations. Seminole County Lake Management staff would be glad to present our findings from this and other surveys. Contact Gloria Eby at (407) 665-2439 for assistance.

2 Treat invasives (water hyacinth, torpedo grass, and bur-head sedge) along your waterfront. You can remove the plants by hand, obtain the necessary aquatic herbicide to treat them (we can provide information about herbicide sources), or hire a contracted aquatic herbicide company to do the application (we can provide a list of companies). Control of aquatic and wetland plants

will in most cases require a free Florida Fish and Wildlife Conservation Commission (FWC) aquatic plant control permit. Contact CJ Green at (407) 858-6170 or Carl.Greene@myFWC.com for a permit.

3 These aquatic management recommendations could be managed by Seminole County by establishing a Municipal Service Benefit Unit (MSBU); this is a funding format for aquatic weed control services via a special assessment. For additional information contact Carol Watral at (407) 665-7164 or cwatral@seminolecountyfl.gov

4 Increase educational outreach programs such as Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of personal pollution by using less total fertilizer, by using only phosphorous-free fertilizers, by keeping a functional shoreline with beneficial native aquatic plants, and by keeping grass clippings out of your storm drains that lead to the lake. All of these activities aid in protecting your waterbody! Contact Seminole County Lake Management Program (407) 665-2439 to learn about the availability of free educational programs.