LAKE MANAGEMENT NEWSLETTER

Managed by Seminole County Lake Management Program ● Summer / Fall 2023

Summer / Fall 2023

Our Seminole County Lake Management Program (SCLMP) has an exciting new edition of the Lake Management Newsletter for you! We hope you will enjoy reading the summer summaries about your lake or pond, and information about the upcoming fall. Please contact Thomas Calhoun via phone (407-665-2459) or email (tcalhoun@seminolecountyfl.gov) with any questions.

In This Edition

- Highlights for each lake and pond
- New LVI scores and acreage for each waterbody
- *Hydrilla* look-alike tip
- Glossary section
- Upcoming SERV planting event

"The Seminole County Watershed Management Division's Mission is to Protect, Conserve and Restore Seminole County's water resources."

Seminole County Watershed Management Website

Lake Sylvan

Quick Links

- SCLMP website
- Water Atlas
- MSBU website

Waterway Assessments

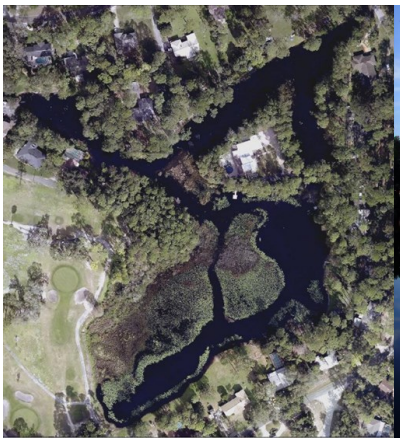
Lake Amory

No *Hydrilla* has been observed during our monthly inspections. Invasive plants are being thinned out along the natural side of the lake by the golf course. Algae is more prevalent this time of the year due to warmer water and runoff from summer rains. Bladderwort, a native submersed plant, is being monitored and managed to determine whether growth gets above desired levels.

Acreage: 10

LVI Score: 55

Category: HEALTHY.



Sandhill crane

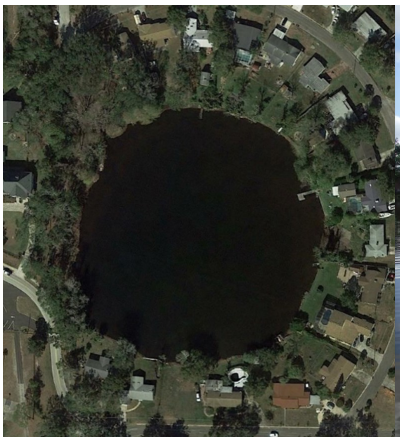
Lake Asher

No *Hydrilla* has been observed in recent assessments. Algae is more prevalent this time of year due to warmer water and increased nutrients due to runoff from summer rains. Algae is treated monthly to combat this issue.

Acreage: 5

LVI Score: 44

Category: HEALTHY.



Ludwigia

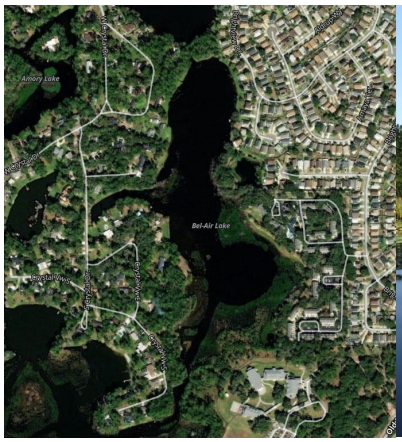
Belair Lake

Hydrilla was observed over the summer and areas of concern were treated. *Hydrilla* was no longer found in these areas in recent inspections. *Ludwigia peruviana*, an invasive tree that can obscure shorelines with its growth, is being targeted for treatment around the lake.

Acreage: 36

LVI Score: 53

Category: HEALTHY.



Sandhill cranes

Lake Burkett

A few sprigs of *Hydrilla* were observed during the summer inspection. Spot treatments took place to quickly eliminate the spread of this invasive plant. 160 triploid grass carp were stocked into Lakes Burkett and Martha last year for the control of *Hydrilla*. The high LVI score was most impacted by the presence of sensitive plants in each section, although the dominance of eelgrass, a native submersed plant, was also helpful.

Acreage: 76

LVI Score: 57

Category: HEALTHY.

Buttonwood Pond

The planting event on May 6th was a success. Our monthly assessments have shown that the majority of the plantings have survived. The plants will help absorb excess nutrients from runoff that may enter the pond. No *Hydrilla* has been observed.

Acreage: 1

LVI Score: N/A



Deforest Lake

Hydrilla was observed on the south side of the lake. Treatments were scheduled and a reduction in *Hydrilla* was subsequently observed. We will continue to monitor the area and treat this invasive plant if it starts to expand again. The low LVI score is mostly due to the lack of native vegetation in some areas around the lake.

Acreage: 12

LVI Score: 31

Category: IMPAIRED.


East Crystal Lake

No *Hydrilla* was observed in East Crystal Lake. Treatments are being conducted to increase flow and open waterways around the lake. The high LVI score is mostly due to the abundant and diverse native vegetation around the lake.

Acreage: 89

LVI Score: 60

Category: HEALTHY.

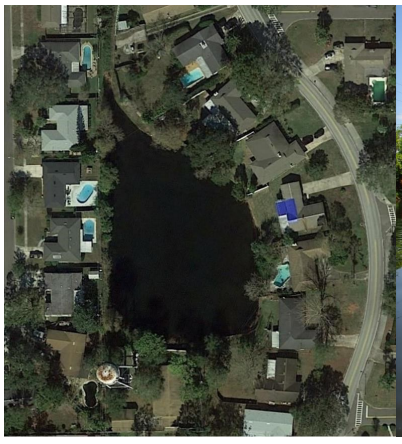
Sandhill crane nest

English Estates Pond

No submersed vegetation has been observed. Algae can be common this time of the year, and nutrient reduction treatments have taken place to reduce the possibility of an algae bloom. The lily pads continue to be managed to mitigate their spread from the desired location. SCLMP is looking into getting boat access through Casselberry property to make treatments easier.

Acreage: 1

LVI Score: N/A



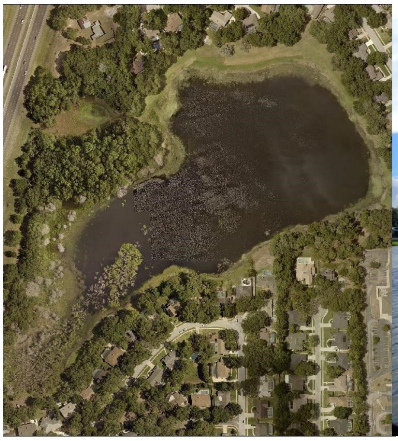
Grace Lake

Hydrilla was observed in recent inspections. Spot treatments are used to stop the spread of this invasive plant and “knock it out”. Grass carp, from the twenty last stocked in December 2022, were observed in the lake; these fish are helping to manage the *Hydrilla*. Southern naiad, a native submersed aquatic plant, is also halting the spread of *Hydrilla* by occupying potential growing areas. The low LVI score is due to the low number of sensitive plants in the waterbody.

Acreage: 14

LVI Score: 36

Category: IMPAIRED.



Horseshoe Lake

Hydrilla has not been observed since the stocking of grass carp and a few spot treatments. At the SERV event on June 10th, 77 volunteers helped to plant 2,135 native aquatic plants at six different locations around the lake.

Acreage: 70

LVI Score: 49

Category: HEALTHY.

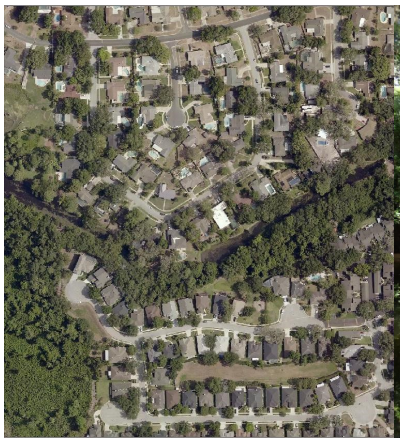


Howell Creek

A few sprigs of *Hydrilla* were observed during recent assessments. The native eelgrass is outcompeting the *Hydrilla*, making it difficult for the *Hydrilla* to become re-established. A tree fell during the storm making it difficult to navigate by kayak and canoe; this tree was removed to allow easier access.

Acreage: 2

TSI Score: N/A



Alligator

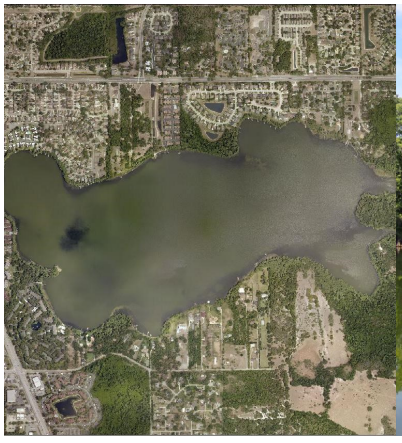
Lake Howell

Eel grass, a native submersed aquatic plant, was the dominant plant in the lake. Eel grass provides foraging areas and shelter for fish and it filters out nutrients that could become food for algae blooms.

Acreage: 401

LVI Score: 52

Category: HEALTHY.



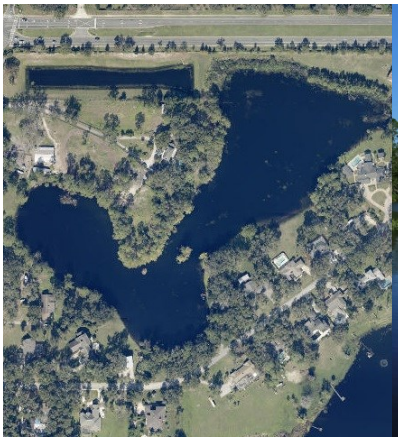
Lake Linden

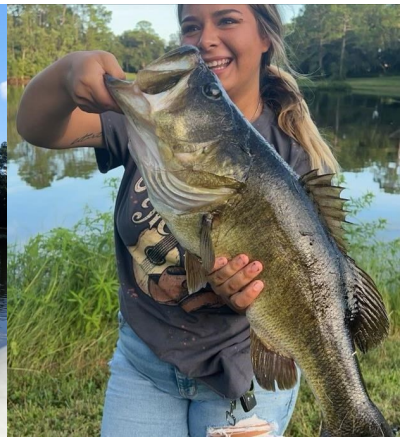
The first LVI assessment was conducted for Lake Linden this year, and it was found to be healthy with a score of 46. *Hydrilla* was not observed in the lake. Treatments are underway for removing the maidencane in the center of the lake.

Acreage: 12

LVI Score: 46

Category: HEALTHY.





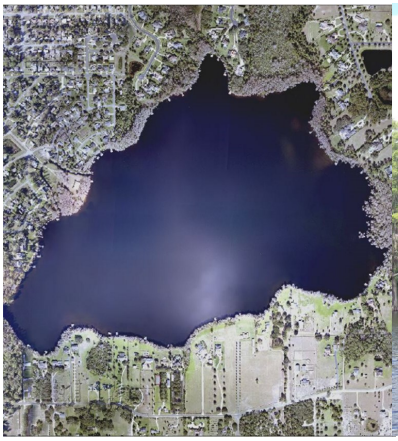
Lake Mills

The high LVI score for Lake Mills can be attributed to several factors. Cypress trees are a high-scoring plant, and they continue to be the dominant vegetation around the lake. The diverse native vegetation around the lake and low number of invasive plants also increased the score.

Acreage: 244

LVI Score: 65

Category: HEALTHY.



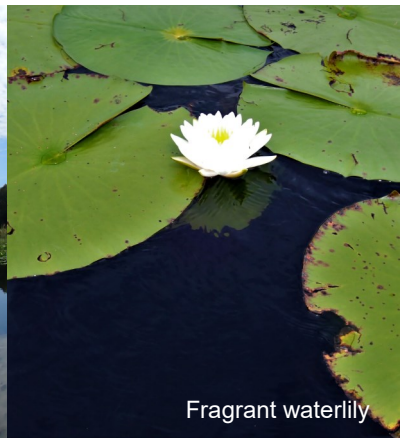
Mirror Lake

Lily pads are being maintained throughout the lake with a focus on treating the American lotus, which has become a nuisance plant in this lake. Removal of tussocks was also accomplished with further work scheduled to remove more in the future. A few sprigs of *Hydrilla* were observed in the waterbody.

Acreage: 32

LVI Score: 54

Category: HEALTHY.



Fragrant waterlily

Myrtle Lake

Hydrilla was observed in a couple of places around the lake which lowered the LVI score. Treatments are being conducted to reduce the spread of this invasive plant, which will complement its removal by grass carp.

Acreage: 34

LVI Score: 40

Category: IMPAIRED.

Duck potato plant

Lake Pickett

Hydrilla and Asian marsh weed continue to decrease around the lake and will be monitored. Orange County EPD continues to treat bur-head sedge and cattails around the lake. The budget has been increased to include mechanical removal of floating bog moss leaves and stems for the new fiscal year.

Acreage: 763

LVI Score: -

Category: Not available

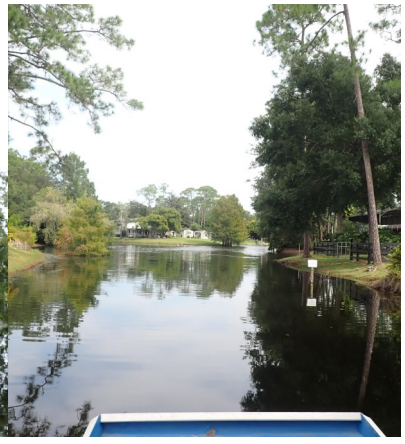
Pine Lake

Algae treatments continue monthly to prevent algae blooms from occurring. Parrot's feather, an invasive plant (SAV), was observed and treated around the lake. Efforts are being made to treat invasive grass on the shoreline.

Acreage: 4

LVI Score: N/A

Category: N/A



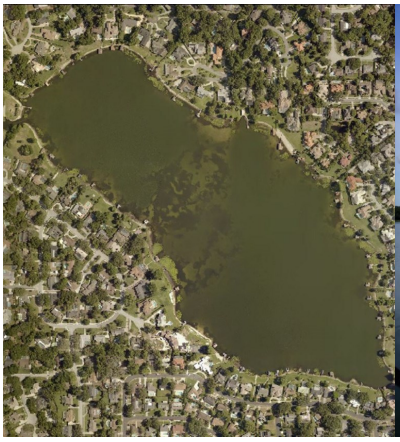
Spring Lake

Although *Hydrilla* was found in the inflows around the lake, the dominance of native eel grass resulted in a high LVI score. *Hydrilla* is being treated to reduce its spread and eliminate the plant as much as possible.

Acreage: 84

LVI Score: 56

Category: HEALTHY.



Spring Wood Lake

An increase of diverse native aquatic plants along barren areas of the shoreline would increase the LVI score. No submersed aquatic vegetation was observed.

Acreage: 8

LVI Score: 37

Category: IMPAIRED.



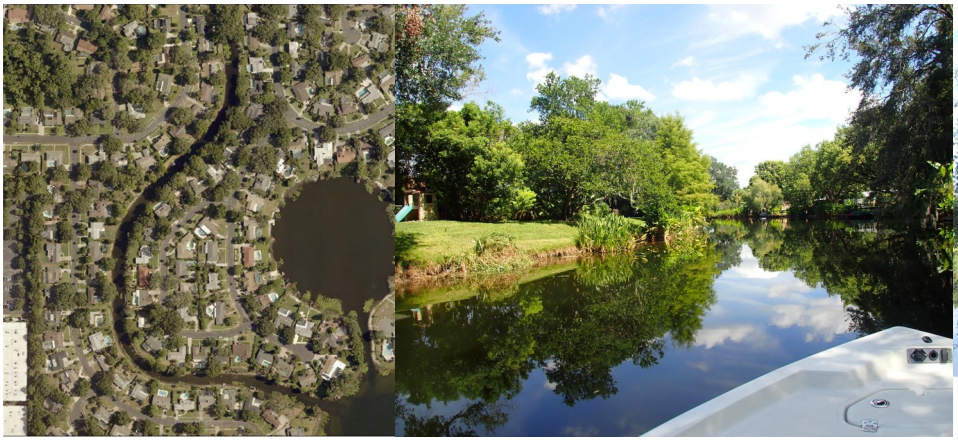
Springwood Waterway

No *Hydrilla* has been observed on the waterway. Lemon bacopa, a *Hydrilla* look-alike (see p. 14 in this newsletter), is mostly growing at the mouth of the waterway in the shallow water. The bacopa is being managed to avoid impeding navigation in and out of the waterway. The native plants along the shoreline are flourishing, bringing a nice aesthetic view to the waterway.

Acreage: 4

LVI Score: N/A

LVI for this waterbody is monitored through Spring Wood Lake.



Sweetwater Lake

No *Hydrilla* has been observed in the Sweetwater system. Sweetwater is a shallow and nutrient rich system causing algae to be more prevalent this time of the year. During the peak algae growing season, April to September, herbicide contractors are scheduled on a 14-day treatment interval. The algae harvester is also out for seven harvesting events from April to October.

Acreage: 17

LVI Score: N/A

Category: N/A.

Lake Sylvan

Hydrilla was observed on a few sections of shoreline. Grass carp were stocked in April of this year to help control the *Hydrilla* in the lake. Spot treatments are currently underway to further stop the spread of this invasive plant.

Acreage: 188

LVI Score: 66

Category: HEALTHY.

Lake Tuskawilla

A few sprigs of *Hydrilla* were observed in two locations in May. Due to early detection, a treatment was conducted and *Hydrilla* has not been observed since. The SERV lake restoration event took place on September 9th, when volunteers planted 2,336 native plants along five homeowners' shorelines. A few homeowners planted additional shoreline plants for a total of 2,538 native plants installed. Lake Tuskawilla is healthy due to the abundance of sensitive native plants that surround the lake.

Acreage: 104

LVI Score: 52

Category: HEALTHY.

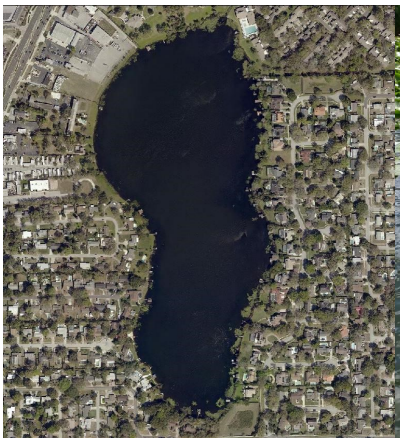
Lake of the Woods

The healthy LVI score was due to the dominance of native eel grass. *Hydrilla* was observed in small amounts and is being controlled by the grass carp in the lake.

Acreage: 51

LVI Score: 52

Category: HEALTHY.



Look-alike Tip

Hydrilla can often be confused with other types of SAV, especially native lemon bacopa. Check out the below features to learn how to distinguish these two aquatic plants.

Hydrilla

- Small pointed leaves in whorls around stem
- Edges of leaves “saw-toothed”, giving them a rough feel
- Stems grow up to 20 ft
- When flowering, tiny flowers on spiral, thread-like stalks (or floating)

Lemon Bacopa

- Has a lemony fragrance when crushed
- Small rounded leaves
- Edges of leaves are smooth
- When flowering, has purplish-blue flowers (no spiral stalks)

Glossary (A-L)

Access Corridor- An area free of aquatic vegetation, which provides access to open water.

Aeration System- a device designed to help introduce dissolved oxygen into a waterbody to improve the quality and health of that waterbody.

Alum (aluminum sulfate)- A compound used to reduce the amount of the nutrient phosphorus in the water.

Aquatic Plant- plants growing in water either floating on the surface, growing up from the bottom of the water body or growing under the surface of the water.

BioBase- A program using sonar to map out in detail the depth, aquatic vegetation abundance, and bottom hardness.

Carp Barrier- A barrier constructed at the outflow of the waterbody, allowing water to move through but not allowing the carp to escape.

Emergent Aquatic Plant- Rooted to the lake bottom, but their leaves and stems extend out of the water.

Eutrophication- The process of a waterbody that becomes enriched in dissolved nutrients.

Floating Leaved Plants- A plant typically rooted in the bottom sediments with leaves floating on the water surface.

Free Floating Plants- Plants floating on the surface with roots in the water column.

Frotus- A device tossed to the bottom of the lake that can collect submersed aquatic vegetation that cannot be seen from the surface.

Hydrilla- An invasive submersed aquatic plant, was introduced to Florida in 1950-1951 through the aquarium trade. *Hydrilla* is highly adaptable, growing in almost any freshwater systems. Each stem can grow 1-4 inches a day and can grow off broken segments.

Invasive Species- A nonnative organism that has spread or expanded its range from the site of its original introduction and has the potential to cause harm to the environment, the economy, or to human health.

Littoral Zone- The down-sloping shelf of a pond or lake. Stretches from the high-water mark to the shore and into the area where the sunlight penetrates through to the sediments at the bottom of a waterbody (shallow water area near the shoreline).

LVI- Lake Vegetation Index, a bioassessment procedure that measures the degree to which a freshwater lake supports a healthy, well-balanced plant community.

Glossary (N-W)

Native Species- An organism that occurs naturally in that ecosystem through natural distribution.

Nonnative Species- An organism that does not occur naturally in an area but is introduced through deliberate or accidental human activities. This category includes invasive species as well as organisms that do not cause ecological or economic harm.

Normal Highwater Elevation- The visible line along the shoreline where water has had a long-term presence.

Outflow- The location where water from the lake or pond discharges downstream.

SAV- Submersed Aquatic Vegetation.

Secchi- A disc with alternating black and white quadrants. It is lowered into the waterbody until it can no longer be seen by the observer. This is the Secchi depth, a measure of the transparency of the water.

SERV- Seminole Education, Restoration and Volunteer. A program that works to actively restore and educate people on how to protect the waterways and natural areas of Seminole County.

Shoreline Ordinance- Any shoreline alteration within unincorporated Seminole County will require a permit. The Ordinance is in place to protect the waterbodies from environmental stressors.

Shoreline Vegetation- Vegetation growing along the shoreline. Landscape can include upland plants growing in drier soils, transitioning to wetland species along the water's edge, and then emergent aquatic vegetation growing directly in the water.

Spot Treatment- A treatment for small patches of aquatic vegetation for maintenance and prevention of further growth into the water body.

Submersed Aquatic Vegetation- Aquatic plants that live at or below the water surface.

Taxa- A collection of one or more populations of organisms (taxa: plural, taxon: singular).

Triploid Grass Carp- A fish used in controlling aquatic vegetation. These carp are genetically altered (triploid) at hatcheries to prevent spawning in Florida waters.

Tussocks- A floating island made up of peat, mud, and plants.

Whole Lake Treatment- Treatment of an entire water body for aquatic vegetation.

Harmful Algae Blooms (HABs): New Hotline and Alerts

The Florida Department of Environmental Protection (FDEP), in conjunction with the Florida Department of Health (FDOH), has a new hotline and alert system for reporting observations of algae blooms: 1-855-305-3903, www.reportalgalbloom.com. Upon receiving hotline information, FDEP will sample the reported waterbody for the presence of blue-green algae. Bloom event information is then released by FDOH through Alert Seminole, a FREE automated, emergency notification system. Residents interested in receiving Alert Seminole notifications via email or phone can register HERE. Residents can also check out blue-green algae sampling efforts with the interactive Algal Bloom Sampling Status Dashboard: https://floridadep.gov/algalbloom.

Report algal blooms at www.reportalgalbloom.com or call toll-free any time: 1-855-305-3903

What is blue-green algae?

Blue-green algae is an ancient[1] microorganism that is found naturally in aquatic environments. Although commonly referred to as “algae”, it is actually a type of bacteria called cyanobacteria. Cyanobacteria acts like a plant or algae in that it feeds through photosynthesis and derives its energy from the sun. This free floating organism also fixes nitrogen from the atmosphere, which certain plants need to survive. As with true algae, blue-green algae blooms tend to be more extensive and last longer in waterbodies with excess nutrients (nitrogen and phosphorus). These blooms can occur at any time, but they are most prevalent in the summer and early fall when temperatures are high and storms bring extra nutrient pollution into our lakes, ponds, and rivers.

Is blue-green algae harmful?

Some types of blue-green algae, but not all types, can produce toxins that affect public health and contribute to environmental problems. The World Health Organization considers toxin levels under 10 micrograms/liter to “represent a low-level risk for adverse health outcomes from short-term recreational exposure; however, certain sensitive populations (e.g., children, the elderly and immunocompromised populations) may still be at risk even at low concentrations and should avoid any exposure[2].” Wildlife and pets can also be affected. Please visit the FDOH website to learn more about how to keep your family and pets safe from HABs.

[1]Whitton, B.A., editor. "The fossil record of cyanobacteria". *Ecology of Cyanobacteria II: Their Diversity in Space and Time*. Springer Science & Business Media, 2012, p. 17.
[2]Florida Department of Environmental Protection - Freshwater Algal Blooms FAQS: https://floridadep.gov/comm/comm/documents/freshwater-algal-bloom-faqs-2019.

LakeWatch

Consider joining Florida LAKEWATCH, a citizen volunteer lake monitoring program that facilitates "hands-on" citizen participation in the management of Florida lakes, rivers and coastal sites through monthly monitoring activities. For more information, you can visit the website at http://lakewatch.ifas.ufl.edu/ or contact Jason “Mo” Bennett (jpb@ufl.edu, 352-273-3639).

Florida
LAKEWATCH
CITIZEN SCIENCE SINCE 1986

Seminole County Shoreline Protection Ordinance Approved

The Board of County Commissioners approved the Shoreline Protection Ordinance on April 27, 2021. Please see the key highlights below, or review the full ordinance here.

Key Highlights

1. Any shoreline alteration will require a Seminole County Shoreline Alteration Permit unless it meets one of the exceptions.
2. Exceptions to the Shoreline Alteration Permit include:
    - Shorelines on waterbodies that are less than 2 acres or over 160 acres (shorelines on waterbodies larger than 160 acres require FWC permit).
    - If aquatic vegetation is removed via physical or mechanical methods within an access corridor of 50 feet or 50% of shoreline, whichever is less.
    - These rules only apply to shorelines within the unincorporated limits of Seminole County, and not to areas within city boundaries.
    - Permits will soon be available through the Seminole County's online permitting system (https://www.seminolecountyfl.gov/departments-services/development-services/building/).
    - The SPO requires new waterfront development or significant redevelopment to protect its shoreline by installing berm and swale systems or a vegetative buffer to reduce the stormwater runoff and associated pollutants from reaching the waterbody.

Please reach out to Thomas Calhoun for more information or further questions about this important program: tcalhoun@seminolecountyfl.gov, 407-665-2459.

Board of County Commissioners approved the Shoreline Protection Ordinance on 4/27/21.

Lake of the Woods, pickerelweed

Ordinance webpage

Please click this link to visit the Shoreline Protection Ordinance webpage for more information and FAQs about the new ordinance. Contact: Shoreline@seminolecountyfl.gov or 407-665-2459,

Fall Back to Slow Release Nitrogen

As we enter a different time of year, we are reminded that aside from the change in temperature, we need a change in our fertilizing philosophy. The use of fertilizer containing nitrogen becomes acceptable during the non-restricted season (October 1st – May 31st), but it must contain 65% or more slow release nitrogen. Throughout the year, fertilizers containing phosphorous can only be applied to lawns and gardens with a certified soil or tissue test that verifies there is a phosphorus deficiency. It is also important to remember that no fertilizer may be applied within fifteen (15) feet of any pond, lake, stream, canal, or other waterbody, including wetlands.

Fertilizer Ordinance

- The overall goal of this ordinance is to minimize excess fertilizer runoff and protect the County's natural water resources. For more information, please review the full Fertilizer Ordinance.
- Please also visit the Fertilizer Ordinance webpage for more information and Fertilizer FAQs.
- Check out the very handy Know Your Lawn Care Professional Checklist. This handout will provide you as a homeowner with a checklist to better know your lawn care professional, your yard, and your role in the environment.

For more details, visit the Fertilizer Ordinance webpage.

Upcoming Events

- Upcoming SERV shoreline planting event: Lake of the Woods (rescheduled for 11/4/23).

Seminole County Fertilizer Guidelines - Overview PSA

Fertilizer PSAs

To view our Fertilizer PSAs, as well as some Seminole County Lake Management videos, visit the Watershed Management Playlist on YouTube.

Recommendations & Additional Information

- If your lake is greater than 160 acres, and you are interested in altering your shoreline or treating exotic vegetation with an herbicide, please remember that you must apply for a free aquatic plant removal permit through the Florida Wildlife Conservation Commission (FWC) http://www.myfwc.com/license/aquatic-plants or contact FWC Regional Biologist, Andrew Lawrence (Andrew.Lawrence@MyFWC.com, cell: 407-269-4298).

- Work together with other lakefront owners. Have at least one annual lake association meeting, invite guest speakers (such as Seminole County or state biologists) and discuss lake-specific issues, especially nutrient/lake management recommendations. Seminole County Lake Management Program staff would be glad to present their findings from their Bioinspections. Also continue to increase native aquatic plantings along the shoreline (such as pickerelweed, duck potato, and canna).

- Water quality and biological information, such as the Lake Vegetation Index (LVI) for each lake, can be found on the Seminole County Water Atlas (http://www.seminole.wateratlas.usf.edu/). You can also visit our website (http://www.seminolecountyfl.gov/LMP) to watch educational videos and download lake management pamphlets.

- For individual Lake Management Plans: Click on Active MSBUs at www.seminolecountyfl.gov/msbu

Volunteers at Lake Tuskawilla

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