

2019

**GRACE LAKE
LAKE MANAGEMENT PLAN**

Annual Meeting

- Agenda

Lake Management Plan

- General Provisions & Scope of Services
- Community-Based Activities & Events
- Current Fiscal Year
 - Planned Treatments & Funding
 - Recommendations
- Next Fiscal Year
 - Projected Treatments & Funding
- Exhibits
 - Agenda & Notes Prior Year
 - Financial Summary
 - Historic Reports/Data
 - Roles & Responsibilities

GRACE LAKE: ANNUAL MEETING

Date/Time/Location	:	March 5, 2019 9:00am – 11:00am	200 W. County Home Rd – LMP office
Community Liaisons	:	Harry Jaeger, Mark Kamrath, & Marianne King	
Liaisons Present	:	Harry Jaeger, Marianne King, Ivana Monges and Mark Kamrath	
Seminole County	:	Thomas Calhoun, Joey Cordell, Gloria Eby, Kathy Moore , and Joe Saucer	

General Topics & Updates

Lake Management Program

- Welcome
- Fertilizer Ordinance- Passed on February 27, 2017 www.seminolecountyfl.gov/fertilizer
 - Restricted Months: no fertilizing June 1st- September 30th
 - Slow Release Nitrogen: at least 50%
 - Know How Much: www.seminolecountyfl.gov/calculator
 - Buffer Zone: 15 feet from all waterbodies
 - HOA posted Fertilizer Ordinance to their website
- Shoreline Protection Ordinance Status
 - FWC Rule change removes permit requirements on lakes smaller than 160 acres
 - Currently drafting County Shoreline Ordinance
 - LMP will keep liaisons updated
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
 - Post Hurricane Effects
 - LVI/BioBase data on Watershed Atlas website:
 - Hydrilla impacting LVI score
 - <http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7564&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Evaluate grass carp fish effects and adjust stocking rate as necessary
 - Triploid grass carp stocked (40)
 - Stocked in July 2018, carp all 10" – 12" in size
 - Monitor shoreline and treat as necessary
 - Discussed fallen oak trees and hydrologic changes that may be affecting them
 - Discussed algal blooms in conjunction with rainfall received in 2018
 - Torpedo grass harvesting
 - Test plot successfully completed, funded by LMP
 - Discussed continuation of project cost- \$9,760 and included for next FY services
 - Discussed project logistics involved/required including access at key points in the area
- General recommendations for lake-community [Refer to Lake Management Plan]
 - Increase native aquatic plantings in areas devoid of vegetation
 - Promote "welcome packages" to new lakefront homeowners
 - Provided to liaisons for distribution
 - Lakewatch samples
 - Tricia Rubino trained by SC Water Quality to collect Lakewatch samples
 - Three samples collected in 2018
 - Homeowner responsibility during drought conditions (when aquatic maintenance services are suspended)
 - Reiterated when lake recedes, it is the homeowner responsibility to mow
- 2019 Shoreline Planting Event- dates available
 - To be coordinated via Thomas Calhoun
 - May 18, 2019
 - More cypress trees
 - Red Maple also suggested
- Other
 - Email Addresses for routine communications and important announcements

- Woodland pond- hydrilla treatment status
 - School Board / HOA working in conjunction stocked with grass carp and also treated for hydrilla
- Discussed water elevation and engineering plans and community communications. Feedback from liaisons is there is high concern about lake elevation and hydrological effects.

MSBU Program

- Financial Summary [Refer to Exhibit B]

GRACE LAKE LAKE MANAGEMENT PLAN

GENERAL PROVISIONS

Scope of Public Aquatic Weed/Plant Control [AWC] Services

The scope of public aquatic weed control [AWC] services funded by non-ad-valorem assessment includes those services associated with managing aquatic plant communities as deemed beneficial and/or critical to restoring, developing and/or maintaining conditions that enhance the water quality and over-all health of the waterbody; with emphasis on providing public services for public purposes which by definition of public are limited to the waterbody and respective shoreline when/where noxious and/or invasive exotic vegetation could/would threaten or impede the waterbody.

Governing documents

- Seminole County Ordinance 2017-30
- FWC Permit

Methods for Aquatic Weed Control as authorized via County Ordinance/Resolution

- Chemical (herbicides)
- Biological (sterile triploid grass carp fish [TGC])
- Mechanical (harvesting, cutting, etc.)

Targeted Invasive/Exotic Aquatic Vegetation

- Hydrilla, torpedo grass, primrose willow, alligator weed, wild taro, water shield, duckweed, lily pads, salvinia, paragrass, and algae.

Frequency of AWC Treatment

AWC services are performed at the direction of the Seminole County LMP as per the Grace Lake Management Plan reviewed at the annual planning session with the expectation that the Seminole County LMP may alter anticipated treatments on an as merited basis per changing/evolving conditions noted during site inspections.

Herbicide Treatments - Service Provider

- As determined by Seminole County

Funding

Financial management of the MSBU fund is provided by the Seminole County MSBU Program. Financial plans developed by the MSBU Program include eligible expense funding requests submitted by the Lake Management Program and other cost and revenue components typical to MSBU funds. Financial information inclusive of prior year actual outcome, current year working budget and next year budget proposal data is reported annually. Assessment levy is subject to Board approval and the standard procedures associated with non-ad valorem assessment. The financial plans may be adjusted by the County as merited per changing/evolving essential services as directed by the County and per financial planning considerations. The annual assessment is capped at \$425.00.

Lake Liaisons

Designated property owners (or their designated representatives) provide community representation at annual planning sessions with the County and serve voluntarily as the key point of contact for community inquiries and concerns. The liaisons for Grace Lake are: Harry Jaeger (hjaeger@cfl.rr.com), Mark Kamrath (markamrath@gmail.com), Marianne King (marianneking2525@gmail.com) and Ivana Monges (liken13@hotmail.com).

COMMUNITY-BASED ACTIVITIES & EVENTS

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings creating a beneficial shoreline for Grace Lake. The intention of such an event is to plant beneficial native aquatic plants in key areas along the bank. It is especially important that as the aquatic invasive plants (such as torpedo grass) are being treated, native aquatic plants should be established within these areas. The presence of the recommended native plant species along the shoreline provides habitat for fish and wildlife, helps impede invasive exotics from re-establishing, and reduces erosion of the shoreline. All of these best management practices are essential to providing the conditions that promote an environmentally stable habitat to be enjoyed by generations to come. The key to success is dependent on strong participation of the Grace Lake community.

Continued recommendations for community initiatives are as follows:

- 1) Shoreline re-vegetation with native emergent plants (by the lakefront community and potentially volunteers),
- 2) Establishing a formal Lake Association holding at least one annual meeting with topics relevant to Grace Lake,
- 3) Continue to increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of residential pollution (use phosphorous free and slow-release nitrogen based fertilizers only). Contact Seminole County LMP, 407-665-2439, for more information and assistance,
- 4) Provide content for the Seminole County Water Atlas Lake Management Webpage for Grace Lake (such as newsletters and photos).

***Important to Note:** When herbicides are applied along the shoreline to invasive plants (such as torpedo grass), overspray onto adjacent desirable vegetation may occur. In order to avoid damage to desired vegetation, manual (by hand) removal (by property owner) of the undesirable species from among the desirable species along the shoreline is advised. If the invasive plants are removed by this method, spraying the area can be reduced, thereby offering greater protection to the desirable species. The physical removal of dead/decaying aquatic plant material will reduce the volume of decomposing vegetation on the lake bottom (muck layer) and will increase the success of the efforts to limit the re-growth of the invasive plants. The presence of submerged aquatic vegetation (“SAV” such as hydrilla) should be communicated to your lake liaison for their reporting to the County so appropriate treatment of SAV can be provided.*

COUNTY SERVICES – Lake Management & Supplemental Programs

While the MSBU assessment includes a nominal charge for administering the MSBU, the amount charged does not cover all the expenses incurred by the County on behalf of the waterfront property owners. Grace Lake is monitored by LMP to assess the aquatic plant growth. LMP provides continued evaluation of the aquatic plant species, such as hydrilla, and provides community updates on the status of treatments and waterbody bioassessment. In addition, LMP offers free aquatic plant material (as available) for sponsored restoration events and local community volunteers coordinated through the county’s Seminole Education and Restoration Volunteer (SERV) Program. Many of the services provided by the LMP are made available to support community riparian stewardship without additional charges being assigned to the MSBU budget.

Current Fiscal Year – Planned Treatment & Funding

Primary Aquatic Plant Management Expectations

Hydrilla growth in Grace Lake has likelihood to continue, however, the timing and extent of hydrilla re-growth is affected by multiple natural and environmental factors that cannot be controlled or predicted with certainty. While extensive growth of hydrilla is possible at any point in time; it is anticipated that routine spot treatments of hydrilla with herbicide and continuous biological control pressures from the triploid grass carp fish will be sufficient to manage hydrilla re-growth during the current fiscal year. The anticipation of spot treatments for the current fiscal year takes into consideration the historic trend of hydrilla management required at Grace Lake, as well as current conditions observed at lake. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for whole lake treatment is advised. For emergent invasive plants, lower water levels result in backpacking for some areas of Grace Lake as defined by essential services.

Fluctuating lake levels present treatment challenges for invasive emergent aquatic plants during low level conditions which prohibit airboat access in certain areas for herbicide application. LMP schedules treatments based on their routine inspections, confirmed status of the lake needs, and best professional lake management practices. LMP continues to encourage mowing of areas where low level of water presents the opportunity to do so (such as dry lake bed). This assists in minimizing excessive invasive plant material growth and reduces treatment dependency/costs for when the lake level normalizes.

Funding Expectations

Refer to current fiscal year data provided in Exhibit B.

Next Fiscal Year – Projected Treatment & Funding

Primary Aquatic Plant Management Expectations

The projected treatment plans for the next fiscal year remain consistent with the plans and expectations noted for the current fiscal year. Primary expectations are as follows:

- 1) Continued monthly aquatic herbicide maintenance for shoreline non-native vegetation and hydrilla treatments (as needed),
- 2) Future grass carp stockings if deemed necessary, pending permit authorization,
- 3) Continued monitoring of hydrilla, other submersed aquatic plants, and grass carp fish,
- 4) Encourage mowing during periods of drought particularly when aquatic maintenance services are suspended.

Funding Expectations

Refer to next fiscal year data provided in Exhibit B.

Exhibits

A - Agenda & Notes from Prior Year Meeting

B - Financial Summary

C - Historic Reports/Data

D - Roles & Responsibilities

Exhibit A – Agenda & Notes from Prior Year Meeting

Date, Time & Location	:	February 23, 2018, 3:00 p.m., 200 W. County Home Rd – LMP office
Community Liaisons	:	Harry Jaeger, Mark Kamrath, & Marianne King
Liaisons Present	:	Harry Jaeger, Mark Kamrath, & Bill Dunkin
Seminole County	:	Edward Bass, Thomas Calhoun, Joey Cordell, Gloria Eby, and Kathy Moore

General Topics & Updates [Meeting Notes provided by respective County Programs]

Lake Management Program

- Welcome
- Fertilizer Ordinance- Passed on February 27, 2017. www.seminolecountyfl.gov/fertilizer.
 - Fertilizer containing nitrogen or phosphorus cannot be applied to turf during the restricted season from June 1st – September 30th. Fertilizers containing Iron, Manganese and other "micronutrients" also referred to as "summer blends" can be applied during the restricted.
 - Fertilizer containing nitrogen that is used during the **non**-restricted season (October 1st – May 31st) must contain *at least* 50% or more slow release nitrogen. This slow release nitrogen content will increase to 65%, three (3) years after adoption of the Fertilizer Ordinance, to allow time for educational outreach to residents and retailers.
 - Fertilizer containing phosphorus cannot be applied to turf or plants unless a state certified soil or tissue test verifies that there is a phosphorus deficiency.
 - Use of deflector shields is required when applying fertilizer with a broadcast or rotary spreader.
 - No fertilizer may be applied within fifteen (15) feet of any pond, lake, stream, canal, or other waterbody, including wetlands.
- Shoreline Protection Ordinance Status
 - Awaiting FWC Rule changes
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices] – [Refer to Lake Management Plan Exhibit C]
 - LVI and Water Quality Data will commence this fiscal year for Grace Lake
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Initial Hydrilla treatment in planning phase (*at time report was written)
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Evaluate grass carp fish effects and adjust stocking rate as necessary
 - Monitor shoreline and treat as necessary
- General recommendations for lake-community [Refer to Lake Management Plan]
 - Increase native aquatic plantings in areas devoid of vegetation
 - Promote “welcome packages” to new lakefront homeowners
 - Lakewatch samples
 - Homeowner responsibility during drought conditions (when aquatic maintenance services are suspended)
- 2018 Shoreline Planting Event- dates available
 - To be coordinated via Thomas Calhoun
- Other
 - FWC aquatic plant permit transfer in progress
 - FWC TGC fish permit in progress
 - [Liaison Inquiry] Slender spike rush treatment and removal of dead torpedo grass.
 - Email Address for routine communications and important announcements
 - Woodland pond- hydrilla treatment status
 - Bill representing the North Cove subdivision attended
 - Discussed hydrilla treatment plan; Informed liaisons that “the lake would look worse before it gets better”
 - Discussed grass carp stocking 40 fish stock 7/3/2018, torpedo grass and slender spike rush treatment, planting event set for 11/3/2018
 - Liaisons had interest in adding cypress trees at planting event 40 trees planted during event

MSBU Program

- Financial Summary - Refer to Exhibit B; Assessment Update
 - Anticipating Administrative Fee increase FY19-20; tax year 2019
 - Tentative date for next annual meeting: January 30, 2019 3:00PM

Exhibit B - Financial Summary

January 2019

Tax Year	2017	2018	2019
Assessment	\$ 425.00	\$ 425.00	\$ 425.00
Fiscal Year	FY17-18	FY18-19	FY19-20
REVENUE	Actual	Working Budget	Proposed Budget
Beginning Fund Balance	\$ -	\$ 20	\$ 7,966
Assessment	\$ 13,762	\$ 13,668	\$ 13,668
Other	\$ 63	\$ 65	\$ 65
MSBU Program Fund Advance	\$ 4,250	\$ -	\$ -
TOTAL	\$ 18,075	\$ 13,753	\$ 21,699
Cost Sharing Lake Management Program	\$ 4,730		
TOTAL	\$ 22,805	\$ 13,753	\$ 21,699
EXPENDITURE	Actual	Working Budget	Proposed Budget
Application Fee Credit	\$ 550	\$ -	\$ -
County Administrative Fee	\$ 1,075	\$ 1,235	\$ 1,235
Fund Advance Repayment	\$ -	\$ 1,553	\$ 2,910
Contracted Services	\$ 16,430	\$ 3,000	\$ 15,510 *
<i>Routine Services</i>	\$ 1,048	\$ 3,000	\$ 3,000
<i>Hydrilla</i>	\$ 15,072	\$ -	\$ 2,500
<i>TGC Fish</i>	\$ 310	\$ -	\$ 250
<i>Fish Barrier Service - NA</i>	\$ -	\$ -	\$ -
<i>Fish Barrier Replacement - NA</i>	\$ -	\$ -	\$ -
<i>Nutrient Abatement (NAV)</i>	\$ -	\$ -	\$ -
<i>Harvesting</i>	\$ -	\$ -	\$ 9,760
<i>Other</i>	\$ -	\$ -	\$ -
Reserve/Contingency	\$ 20	\$ 7,966	\$ 2,044
<i>Operating Contingency</i>	\$ 20	\$ (7,034)	\$ (12,956)
<i>Reserve: Hydrilla (Whole Lake)</i>	\$ -	\$ 15,000	\$ 15,000
<i>Reserve: Barrier Replace/Repair</i>	\$ -	\$ -	\$ -
<i>Reserve: Admin Code & Ord Amnd</i>	\$ -	\$ -	\$ -
TOTAL	\$ 18,075	\$ 13,753	\$ 21,699
Cost Sharing Lake Management Program	\$ 4,730	\$ -	\$ -
TOTAL	\$ 22,805	\$ 13,753	\$ 21,699
Fund Advance BB	\$ 4,250	\$ 4,250	\$ 2,825
Payment (Principal)	\$ -	\$ (1,425)	\$ (2,825)
Fund Advance EB	\$ 4,250	\$ 2,825	\$ -
MSBU Program Administration Cost	\$ 1,144	\$ 15,144	
LM Program Administration Cost	\$ 10,000		
Restoration Event Cost	\$ 4,000		

*Original 5-Year Financial Plan replaced March 2019 per new service priorities established by LMP that include harvesting in FY19-20 and reduction in other contracted services.

C - Historic Reports/Data

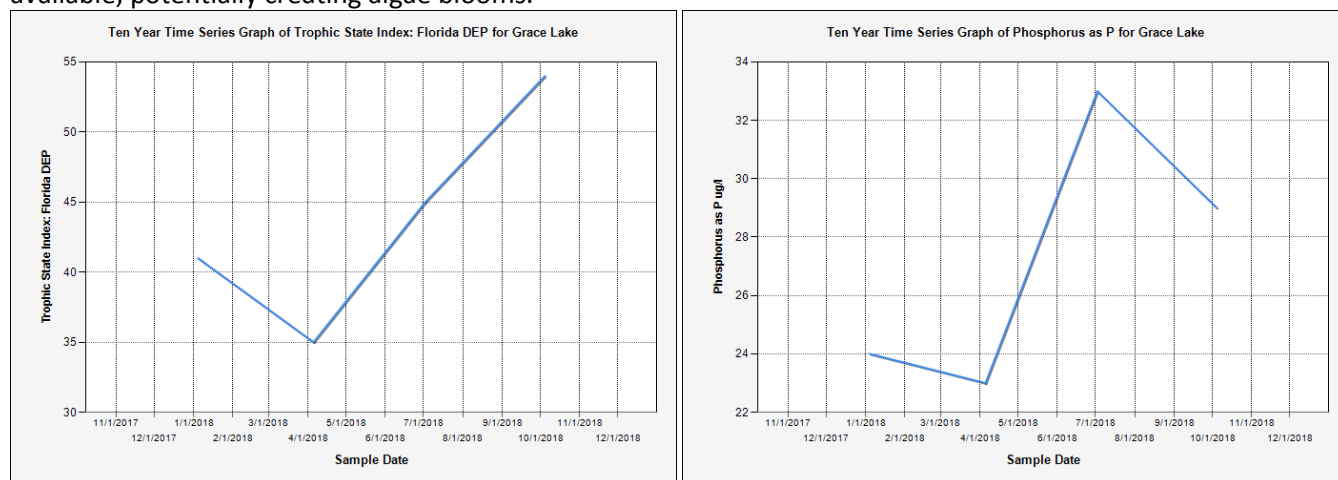
Additional information for Grace Lake can be found on the Seminole County Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/?wbodyid=7564&wbodyatlas=lake>

Lake Grace Water Quality Report: How Does My Lake Rank **TSI SCORE: 54 GOOD**

The Trophic State Index (TSI) is a classification system designed to "rate" individual lakes, ponds and reservoirs based on the amount of biological productivity occurring in the water. Using the index, one can gain a quick idea about how productive a lake is by its assigned TSI number. A "Good" quality lake is one that meets all lake use criteria (swimmable, fishable, and supports healthy habitat).

The two graphs below indicates nutrient levels (measured by TSI and/or Total Phosphorous [TP]) for your lake. A TSI score of 60 or above is considered impaired (or polluted) lake. Continued reduction of TP sources (personal pollution, run-off, landscaping practices, shoreline erosion) can help reduce phosphorous in your lake that is abundantly available, potentially creating algae blooms.



Lake Vegetation Index Bioassessment (LVI): How Does My Lake Rank? **28 Impaired**

The Lake Vegetation Index is a rapid bioassessment tool created by the Florida Department of Environmental Protection (FDEP) to assess the biological condition of aquatic plant communities in Florida lakes. The first LVI conducted on Grace Lake (October 31, 2018) resulted in a score of **28** placing the lake in the **Impaired** category.

Aquatic life use category	LVI Range	Description
Category 1 "exceptional"	78–100	Nearly every macrophyte present is a species native to Florida, invasive taxa typically not found. About 30% of taxa present are identified as sensitive to disturbance and most taxa have C of C values >5.
Category 2 "healthy"	43–77	About 85% of macrophyte taxa are native to Florida; invasive taxa present. Sensitive taxa have declined to about 15% and C of C values average about 5.
Category 3 "impaired"	0–42	About 70% of macrophyte taxa are native to Florida. Invasive taxa may represent up to 1/3 of total taxa. Less than 10% of the taxa are sensitive and C of C values of most taxa are <4.

ROLES & RESPONSIBILITY

General Outline

COUNTY

Seminole County will

- ✓ Govern the MSBU
- ✓ Provide financial management of MSBU fund and assessment levy
- ✓ Ensure activities conducted with assessment funding align with the scope of services documented in the governing ordinance
- ✓ Ensure the lake is monitored and services are appropriately rendered
- ✓ Maintain decision-making authority relative to public services and will defer to best lake management practices when making such decisions
- ✓ Provide an ongoing lake management plan based on the defined service scope, permitting, conditions at the lake, funding parameters, and best lake management practices. The Lake Management Plan will be developed and maintained by the Lake Management Program with liaison participation
- ✓ Initiate and manage service contracts, monitor results, and communicate updates on a routine basis
- ✓ Conduct annual meetings that offer opportunity for liaison discussion as to prior, current, and future action plans
- ✓ Encourage liaisons and assist with educational outreach efforts to protect the health and water quality of the waterbody

LIAISONS

Liaisons will

- ✓ Encourage communitywide awareness and participation relative to environmental stewardship recommendations and opportunities
- ✓ Provide communitywide communication and assist the County in the distribution of relevant lake information
- ✓ Attend annual lake management and budget planning sessions conducted by the County
- ✓ Serve as representatives of the community on lake issues; representing the respective lake community as a whole
- ✓ Monitor lake conditions and provide feedback to the County as to observations