

January 19, 2017

**SPRING LAKE
LAKE MANAGEMENT PLAN**

Annual Meeting – 2017

- Agenda

Lake Management Plan

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

SPRING LAKE ANNUAL MEETING

Date, Time & Location	: January 19, 2017, 10:00 a.m., 200 W. County Home Rd – LMP office
Community Liaisons	: John Bandy, Dan Copeland, Jay & Rhonda Fraxedas, Bill & Bobbi Vogel, Brian Pelski
Liaisons Present	: John Bandy, Bobbi Vogel, Brian Pelski
Seminole County	: Thomas Calhoun, Joey Cordell, Gloria Eby, Joe Saucer and Kathy Moore
Altamonte Springs	: April Verpooten (Not Present)

Topics carried forward from prior fiscal year activity [Meeting Notes]

- Fertilizer Ordinance & Shoreline Protection Ordinance
 - Both ordinances contain commitments and directives that will contribute to environmental improvement and protection long-term for lakes and other waterbodies. The Fertilizer Ordinance focuses primarily on fertilizer selection (phosphate free, slow release nitrogen) and application (location, volume, timing). The Shoreline Protection Ordinance mirrors the State’s guidelines for shoreline vegetation and development as historically communicated by the LMP and demonstrated by the best lake management practices followed by MSBU funded services. The Fertilizer Ordinance is tentatively scheduled for BCC review/approval consideration on February 28; while the Shoreline Protection Ordinance development continues with final presentation anticipated later in 2017. [Note: The Shoreline Protection Ordinance approval process involves several levels of approval as the directives need to be included in the County’s Land Development Code.] Educational materials are readily available to further promote awareness, understanding and compliance.
 - FWC is proposing a change to their permitting responsibilities respective to aquatic plant management. The proposed (and likely to be adopted rule changes) will have impact on the permits associated with lakes less than 160 acres in size. The importance of Seminole County enacting the Shoreline Protection Ordinance is heightened by this change. In association with the ordinance, the County will be confirming delegated enforcement authority from FWC to provide ongoing compliance efforts respective to adopted protective measures. When presentation dates are confirmed, LMP will provide email updates so interested property owners and residents are aware of these activities. Supportive participation is encouraged.
- Spring Lake Watershed – Installation of a baffle box at Live Oak pipe using 1 cent sales tax funding; located on County property
 - Funding [~\$325K] for the baffle box was delayed due to other priority projects; LMP requesting reinstatement of the funding via the FY1718 Capital Improvement Plan (CIP)

General Topics & Updates [Meeting Notes]

- 2017 Shoreline Planting Event
 - To be coordinated via Thomas Calhoun; event flyer to be provided by SERV
 - Need for event highlighted as result of observed reduction in native vegetation added during prior events and presence of new owners that may benefit from focused education on the benefit of shoreline vegetation.
 - A test plot (Vogel shoreline) designated by LMP to better evaluate the reason(s) for loss of pickerall weed that was previously thriving, but no longer present. Uncertain as to whether reduction is recreational use of lake, grass carp related or due to other reasons. Volume of eelgrass also noted to have declined.

- Nutrients/Habitat Scores: Improvements in bioassessment indices
 - Refer to Exhibit C – scores rating healthy
- Plans for current fiscal year
 - Refer to Page 6
 - Alum Treatment (on-going cycles for 2.5 years) to provide amount of Alum as recommended by ERD
 - Future Water quality improvement projects
- Projections for next fiscal year
 - Refer to Page 6
 - Monitoring aquatic vegetation changes following alum treatment (influence of reduced phosphates in water column and greater clarity)
- Financial Status & Budget – Prior, Current and Proposed
 - Refer to Exhibit B; recommend holding assessment at current rate of \$375.00
- General recommendations for community consideration
 - Refer to Page 5; Increase native aquatic planting in areas that are devoid of vegetation
 - Erosion concerns on the south side on the lake due to boat wave action. Joey Cordell provided information to the homeowners recently about Shore Socks and Geotubing to armor the shoreline.

SPRING 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 07-9
- Interlocal Agreement with Altamonte Springs – Authorizing Assessment Levy [01-27-2007]
- FWC Permit

Methods for Aquatic Weed Control as authorized via County Ordinance

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

Targeted Invasive/Exotic Aquatic Vegetation

- Cattails, pennywort, wild taro, filamentous algae, eelgrass, primrose willow, torpedo grass, and hydrilla

Frequency of AWC Treatment

AWC services are performed at the direction of the Seminole County LMP as per the Spring Lake Management Plan reviewed at the annual planning session with the expectation that the Seminole County LMP may alter anticipated treatments as merited per changing/evolving conditions noted during site inspections. Eelgrass corridor treatments are scheduled for the spring and fall of each year and are based upon merited conditions and favorable water elevation conditions.

Herbicide Treatments - Service Provider

- As determined by Seminole County

Funding

Assessment rate may vary annually based on financial demands of changing conditions, such as cost of herbicide treatments, frequency of treatments, and other factors impacting assessment calculations. The governing ordinance does not include assessment restrictions specific to annual adjustment amounts and/or assessment cap.

Lake Liaisons

Designated property owners 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 Spring Lake are: John Bandy (jibjr@cfl.rr.com), Dan Copeland (dcopeland@ribelin.com), Jay and Rhonda Fraxedas (jifraxedas@gmail.com), Brian Pelski (bpelski89@gmail.com), and Bill and Bobbi Vogel (b2vogel@gmail.com).

COMMUNITY-BASED ACTIVITIES & EVENTS

LMP continues to recommend/encourage future resident-based volunteers involving native plantings along the shoreline. The intention of such an event is to transplant existing in-lake plants to various key areas in need along the shoreline. It is especially important that as aquatic invasive plants (such as torpedo grass) are being treated, native aquatic plants should be established within these areas. This also provides habitat for fish and wildlife, helps impede invasive exotics from re-establishing and reduces sedimentation into the lake due to erosion of the shoreline. All of these best lake management practices are essential to providing a more environmentally stable lake for generations to come. The key to success in lake management projects is dependent on strong participation of the Spring Lake community. Continued recommendations for community initiatives are as follows:

- 1) Continue to increase shoreline re-vegetation with beneficial native aquatic plants such as duck potato and pickerelweed; hand removal of torpedo grass from around native plants,
- 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 and nitrogen that can impact your lakes,
- 3) Establishing a Lake Association and having at least one annual meeting with topics relevant to Spring Lake and its watershed,
- 4) Implement educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN) presentations, Lake Management Video mail-outs, and reduction of residential pollution by using low fertilizer use; phosphorous free and slow release nitrogen based 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 lake! Contact Gloria Eby (407) 665-2439 or Marie Lackey (407) 665-2424 for more information and assistance, and
- 5) Provide content for the Seminole County Water Atlas Lake Management webpage for Spring Lake (such as newsletters and community updates).

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 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.

COUNTY SERVICES – Lake Management & Supplemental Programs

LMP provides continued evaluation of the aquatic plant species, such as hydrilla, and provides community updates on the status of all treatments and waterbody assessments. 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. 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. Spring Lake is monitored by LMP to assess the aquatic plant growth. 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 Spring Lake has likelihood to increase, 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 herbicides and continuous biological control pressures from the triploid grass carp fish will be sufficient to manage hydrilla re-growth during the current FY. The anticipation of spot treatments for the current fiscal year takes into consideration the historic trend of hydrilla management required at Spring Lake, as well as current conditions observed at lake and dominant presence of eelgrass providing competition. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for whole lake treatment is advised.

Primary expectations are as follows:

- 1) Monitor hydrilla (re-growth from tuber production*)
- 2) Conduct spot treatments of hydrilla if required
- 3) Treat other invasive aquatic plants – herbicides
- 4) Conduct Alum treatment per recommendation documented in Nutrient

*LMP will continue to closely monitor and gauge hydrilla in Spring Lake. This invasive exotic's re-growth is sparsely present in both shallow and deep water, mostly on the western side of the lake. Even though this re-growth is minimal, it is LMP's objective to keep the re-growth in check.

Funding Expectations

Refer to current fiscal year budget 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 monitoring of hydrilla (re-growth from tuber production)
- 2) Conduct spot treatments of hydrilla if required
- 3) Continued treatment of other invasive aquatic plants
- 4) Future grass carp stockings as needed
- 5) Continue Alum treatment per recommendations and prior year activities

Funding Expectations

Refer to next fiscal year budget data provided in Exhibit B

Exhibits

A – Agenda & Notes from Prior Year Planning Session

B – Budget/Financial Overview

C – Historic Reports/Data

D – Roles & Responsibilities

Exhibit A – Agenda & Notes (Prior Year Planning Session)

ANNUAL MEETING

Date, Time & Location : February 3, 2016, 1:00 p.m., 200 W. County Home Rd – LMP office
Community Liaisons : John Bandy, Dan Copeland, Jay & Rhonda Fraxedas, Bill & Bobbi Vogel, Brian Pelski
Liaisons Present : John Bandy, Dan Copeland, Bill Vogel
Seminole County : Thomas Calhoun, Joey Cordell, Gloria Eby, and Kathy Moore

Topics carried forward from prior fiscal year activity [Meeting Notes]

- Nutrient Study
 - Final report should be ready in Summer 2016; frustration with delay noted
 - Plan is to provide informative presentation at community meeting in conjunction with release of report; followed by scheduling and conducting Alum treatment per recommendation of Dr. H. Harper
- Baffle box and alum treatment recommendations
 - To be included in Report/Presentation
- Biobase information- reduction in eelgrass coverage
 - [Handout] To be repeated this summer
 - Targeted percentage of SAV by FWC is ~30%; actual as of 2014 evaluation Spring Lake had ~42.5%
- Fertilizer Ordinance & Shoreline Protection Ordinance
 - Documents developed and undergoing preliminary review and consideration prior to presentation to Board of County Commissioners. Targeting to present to BCC within next several months.

General Topics & Updates [Meeting Notes]

- Potential planting events
 - Insufficient new interest to schedule event; will highlight planting recommendation at referenced community meeting this summer
- Plans for current fiscal year
 - Refer to Page 5
 - Spring Lake Watershed – Proposing installation of a baffle box at Live Oak pipe using 1 cent sales tax funding; located on County property
 - Springwood Waterway – Analysis \$30-40K to address wetland diversion of waterway (private property) - unfunded
 - Refer to Budget Exhibit B
- Projections for next fiscal year
 - Refer to Page 5
 - Refer to Budget Exhibit B – Liaison consensus (after discussing alum treatment scheduling and whole lake hydrilla reserve) is to hold at current assessment and re-evaluate after alum treatment is concluded
- General recommendations for community consideration
 - Refer to Nutrient Study recommendation
 - Refer to Page 4

Exhibit B - Budget/Financial Overview

MSBU: SPRING LAKE

Date: January 1, 2017

Tax Year	2014	2015	2016	2017
Assessment	\$375.00	\$375.00	\$375.00	\$375.00
Fiscal Year	FY14-15	FY15-16	FY16-17	FY17-18
REVENUE	Actual	Actual	Working Budget	Proposed Budget
Beginning Fund Balance	\$ 109,028	\$ 130,912	\$ 155,618	\$ 170,018
Assessment	\$ 27,371	\$ 27,141	\$ 27,000	\$ 27,000
Other	\$ 385	\$ 423	\$ 400	\$ 400
MSBU Program Fund Advance	\$ -	\$ -	\$ -	\$ -
TOTAL	\$ 136,784	\$ 158,476	\$ 183,018	\$ 197,418
Cost Sharing Lake Management Program	\$ -	\$ -	\$ 21,000	\$ -
TOTAL	\$ 136,784	\$ 158,476	\$ 204,018	\$ 197,418
EXPENDITURE	Actual	Actual	Working Budget	Proposed Budget
County Administrative Fee	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500
Fund Advance Repayment	\$ -	\$ -	\$ -	\$ -
Contracted Services	\$ 4,372	\$ 1,358	\$ 11,500	\$ 53,500
<i>Routine Services</i>	\$ 4,372	\$ 1,358	\$ 3,000	\$ 3,000
<i>Hydrilla</i>	\$ -	\$ -	\$ -	\$ -
<i>Carp</i>	\$ -	\$ -	\$ -	\$ -
<i>Cattails/Eel Grass</i>	\$ 921	\$ -	\$ 2,000	\$ 2,000
<i>Alum Treatment</i>	\$ -	\$ -	\$ 27,500	\$ 48,500
<i>Other</i>	\$ -	\$ -	\$ -	\$ -
Contingency Reserve	\$ 130,912	\$ 155,618	\$ 170,018	\$ 142,418
TOTAL	\$ 136,784	\$ 158,476	\$ 183,018	\$ 197,418
Cost Sharing Lake Management Program	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ 21,000	\$ -
TOTAL	\$ -	\$ -	\$ 21,000	\$ -
Fund Advance BB Payment	\$ -	\$ -	\$ -	\$ -
Fund Advance EB	\$ -	\$ -	\$ -	\$ -

Exhibit C - Historic Reports/Data

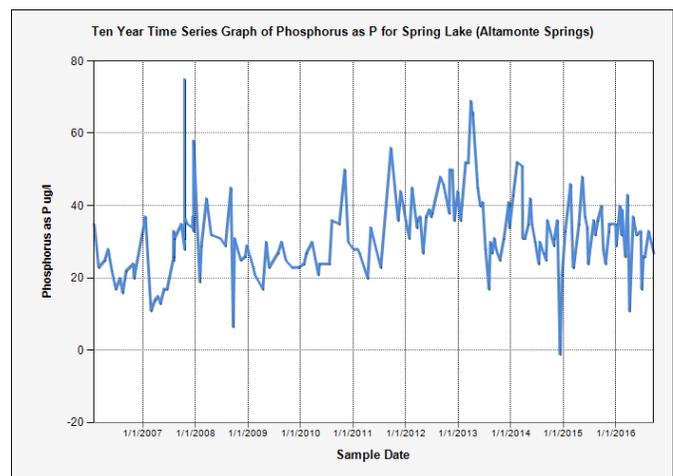
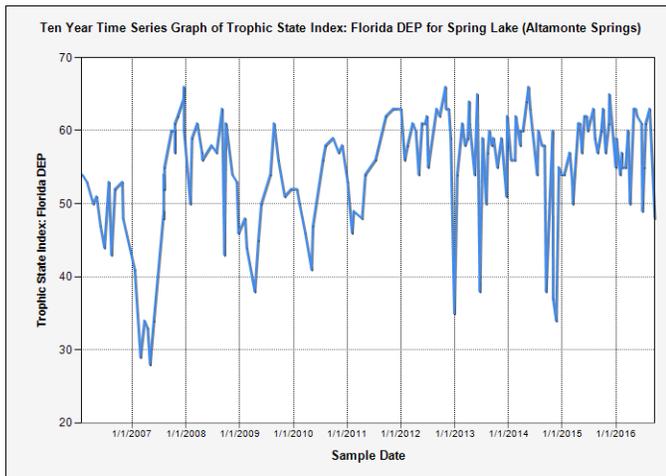
Additional information for Spring Lake can be found on the County's Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7659&wbodyatlas=lake>
<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7659>

Spring Lake Water Quality Report: How Does My Lake Rank? **48 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 indicate 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? **56 Healthy**

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 recent assessment for Spring Lake (sampled on August 3, 2016) scored a **56 Category 2- Healthy**, which is a significant **increase** from **32 Category 3- Impaired** since inception of our lake management efforts in 2007.

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.

Exhibit D – Roles & Responsibilities

ROLES & RESPONSIBILITY

General Outline

COUNTY

Seminole County will

- ✓ Govern the MSBU
- ✓ Provide financial management of MSBU fund
- ✓ 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 lake management activities and aquatic vegetation management 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