January 16, 2014

MIRROR LAKE
LAKE MANAGEMENT PLAN

Annual Meeting – 2014

- 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 – Notes, Budget & Financial Summary, Historic Reports/Data

MIRROR LAKE
ANNUAL MEETING

Date, Time & Location	:	January 15, 2014, 2:30 p.m., 200 W. County Home Rd – LMP Office
Community Liaisons	:	John Culmer, Lorene Deviese, and Debbie Rodgers
Liaisons Present	:	John Culmer and Lorene Deviese
Seminole County Present:		Thomas Calhoun, Gloria Eby, and Carol Watral

Agenda

Topics carried forward from prior fiscal year activity

- County encourages additional shoreline restoration events.
- Scheduled aquatic plant control monthly treatments continue along shoreline areas targeting invasives.
- The potential of increasing hydrilla growth due to re-growth of tubers exists. Large-scale herbicide treatments for hydrilla may be required every two to three years. Product rotation required to reduce potential for resistant hydrilla.
- As of December 2013, hydrilla was found sparsely in lake and is being closely monitored.
- Encourage property owners to communicate comments/concerns through the liaison group, who will provide consolidated request/comments to the MSBU Project Manager (Carol Watral).

General Topics & Updates

- Hydrilla management and costs
- Potential planting events
- New pricing available via state contract established with herbicide service provider
- Plans for current fiscal year
- Projections for next fiscal year
- General recommendations for community consideration

Meeting Notes:

- Canal maintenance is important for debris floating into canal, but access is difficult.
- Although no County initiated shoreline restoration events are scheduled this year, opportunity exists for individual properties to participate in restoration efforts. Lake Management Program can consult individually with properties.
- Some hydrilla is currently evident, but is being kept in check with the existence of beneficial native aquatic vegetation.
- If any drainage issues are evident, the community is advised to call the County and place a work order at 407-665-ROAD.
- Liaisons report continuing attempts to encourage additional properties to serve as liaisons; however, there has been no interest thus far.
- Privately funded street sweeping services have been added as a recommendation for Mirror Lake.

MIRROR 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 06-74
- FWC permit

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

- Chemical (herbicides)
- Biological (sterile triploid grass carp fish [TGC])

Targeted Invasive/Exotic Aquatic Vegetation

- Hydrilla, water hyacinth, torpedo grass, primrose willow, water lily (greater than 4ft water depth), wild taro, cattail, Cuban bulrush, and salvinia.

Frequency of AWC Treatment

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

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 annual assessment is capped at $250.00.

Lake Liaisons

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 Mirror Lake are: John Culmer (debrical@me.com), Lorene Deviese (lfdeviese@hotmail.com), Linda Keene (Linda@LiveBarrington.com), and Debbie Roberts.

MIRROR LAKE

COMMUNITY-BASED ACTIVITIES & EVENTS

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings along the shoreline of Mirror Lake. The intention of such an event is to plant beneficial native aquatic plants to key areas in need along the bank. Residents should organize planting days creating a beneficial shoreline. 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 Mirror Lake community.

Continued recommendations for community initiatives are as follows:

1) Work together or establish a lake association, with other lakefront owners to increase native aquatic plantings along shoreline (such as pickerelweed, canna, and duck potato). Have at least one annual lake association meeting to discuss lake specific issues.
2) Consider funding street sweeping services during peak leaf fall to ensure this debris does not wind up in your waterways. Leaf debris contains phosphorous and nitrogen that can impact your lake.
3) Take advantage of free educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and presentations on decreasing "pointless personal pollution" by reducing fertilizer use and only using phosphorous-free fertilizers. Contact Seminole County Lake Management Program (407) 665-2439 to inquire about the availability of these programs. You can also visit the Water Atlas (http://www.seminole.wateratlas.usf.edu/) to read interesting information about your specific waterbody, and our website (http://www.seminolecountyfl.gov/pw/roadstorm/wq_lakemgt.aspx) to watch educational videos and download lake management pamphlets.
4) Share what YOU know with your neighbors! Encourage fellow residents to keep a functional shoreline with beneficial native aquatic plants, and to keep grass clippings out of the storm drains that lead to the lake. All of these activities aid in protecting your waterbody! Please share newsletter with any new residents or those not currently on our email list.

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 eliminated, 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.

MIRROR LAKE

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 expenses incurred by the County on behalf of waterfront property owners. Mirror Lake is monitored by LMP to assess aquatic plant growth. 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. 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 Mirror Lake has the 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 herbicides 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 Mirror Lake, as well as current conditions observed at the lake. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for whole lake treatment is advised.

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 monthly aquatic herbicide maintenance for non-native vegetation skipping the months of January and February and conducting hydrilla treatments (as needed),
2) Aquatic vegetation maintenance for two 20ft corridor,
3) Reduce biomass of lilies in depths greater than 4ft,
4) Continued monitoring of hydrilla, other submersed aquatic plants, and grass carp fish effects,
5) Future grass carp stockings if deemed necessary, pending permit amendment.

Funding Expectations

Refer to next fiscal year budget data provided in Exhibit B.

Exhibits

A - Notes from Prior Year Planning Session

B - Budget/Financial Summaries

C - Historic Reports/Data

Exhibit A - Notes from Prior Year Planning Session

Summary from January 23, 2013 Annual Meeting

County Staff Present: Thomas Calhoun, Gloria Eby, and Carol Watral
Liaisons Present: John Culmer and Lorene Deviese
Liaison Members: John Culmer, Lorene Deviese, Debbie Rodgers, and Linda Keene - Barrington Apartments Property Manager

- Meeting discussion points covered a variety of topics including hydrilla management strategies (both biological and chemical), contracted services performance, budget/cost, assessment levels, broadening native aquatic plantings, grass carp fish, lake restoration events, contracted treatment pricing/rates, and liaison involvement.
- Maintenance services were performed on a monthly basis skipping January and February months and will continue on this schedule.
- LMP recommends liaisons/owners select locations to serve as shoreline demonstration sites. The goal is for the lake community to have reference locations showing the benefits of a planted shoreline. Native aquatic plants can inhibit establishment of exotic/invasive species and may reduce herbicide demands providing a cost savings. Liaisons expressed concern for performing ongoing maintenance of plantings.
- Property owners are encouraged to communicate comments/concerns through the liaison group, who provide consolidated request/comments to the MSBU Project Manager (Carol Watral).

Annual Assessment: $250.00 (Tax Year 2013)

Exhibit B - Budget/Financial Overview

MSBU: **MIRROR LAKE (Aquatic Weed Control)**
Date: January 1, 2014

Tax Year	2012	2013	2014
Assessment	$250.00	$250.00	$245.00
Fiscal Year	FY1213	FY1314	FY1415
REVENUE	**Actual**	**Working Budget**	**Projected Budget**
Beginning Fund Balance	$ 11,456	$ 17,182	$ 19,067
Assessments	$ 12,792	$ 12,960	$ 12,701
Other	$ 59	$ -	$ -
MSBU Program Fund Advance	$ -	$ -	$ -
TOTAL	**$ 24,307**	**$ 30,142**	**$ 31,768**
Cost Sharing			
TOTAL	$ 24,307	$ 30,142	$ 31,768
Lake Management Program			
TOTAL	$ 24,307	$ 30,142	$ 31,768
EXPENDITURE	**Actual**	**Working Budget**	**Projected Budget**
County Administrative Fee	$ 875	$ 875	$ 1,075
Fund Advance Repayment	$ -	$ -	$ -
Contracted Services	$ 6,250	$ 10,200	$ 10,200
Routine Services	*$ 6,250*	*$ 5,650*	*$ 5,650*
Hydrilla	*$ -*	*$ 3,000*	*$ 3,000*
Torpedo Grass	*$ -*	*$ 1,000*	*$ 1,000*
Labor	*$ -*	*$ 550*	*$ 550*
Carp	*$ -*	*$ -*	*$ -*
Other	*$ -*	*$ -*	*$ -*
Contingency Reserve	$ 17,182	$ 19,067	$ 20,493
TOTAL	**$ 24,307**	**$ 30,142**	**$ 31,768**
Cost Sharing	$ -	$ -	$ -
TOTAL	$ 24,307	$ 30,142	$ 31,768
Lake Management Program	$ -	$ -	$ -
TOTAL	$ 24,307	$ 30,142	$ 31,768

Fund Advance BB	$ -	$ -	$ -
Payment	$ -	$ -	$ -
Fund Advance EB	$ -	$ -	$ -

Exhibit C - Historic Reports/Data

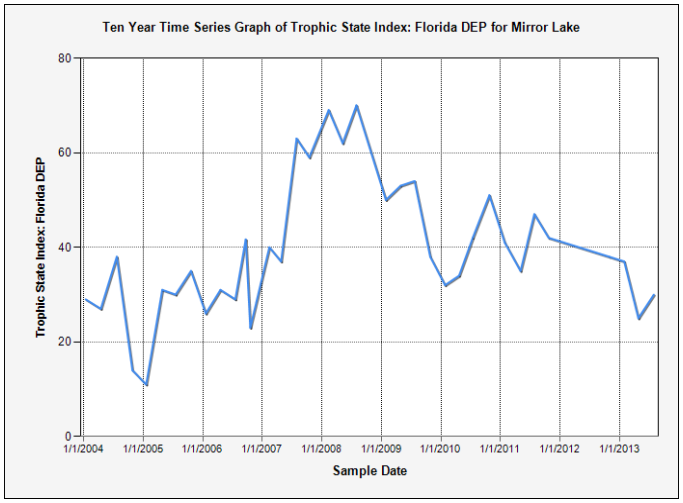
Additional information for Mirror Lake can be found on the Seminole County Water Atlas website at:

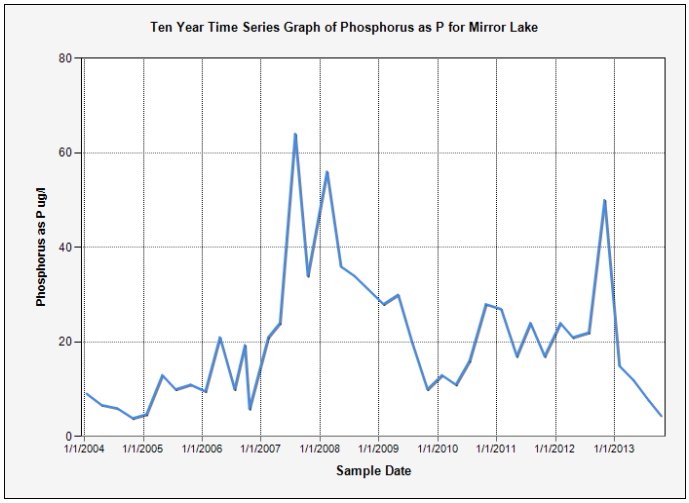
http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7616&wbodyatlas=lake
http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7616

Mirror Lake 2013 Water Quality Report: How Does My Lake Rank? **TSI SCORE: 30 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? **45 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 most recent LVI bioassessment for Mirror Lake (sampled on August 13, 2013) scored a **45** which is in the **Healthy** 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"	38–77	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"	0–37	About 70% of macrophyte taxa are native to Florida. Invasive taxa may represent up to 1/3 of total taxa. Less that 10% of the taxa are sensitive and C of C values of most taxa are <4.