

2019

**HOWELL LAKE
LAKE MANAGEMENT PLAN**

Annual Meeting

- Agenda

Lake Management Plan

- General Provisions & Scope of Services
- Community-Based Activities & Events
- County Services – Lake Management & Supplemental Programs
- 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

HOWELL LAKE: ANNUAL MEETING

Date/Time/Location:	March 1, 2019 1:30pm – 2:30pm; 200 W. County Home Rd – LMP office		
Community Liaisons:	Lois Chavis, Carol DiPasqua, Scott Furgeson, Rita Hoffman, Joe Lung, Bob Musser, Darryl Podunavac, Ron Shady, Jim Travis, and Chuck Weirauch		
Liaisons Present:	Lois Chavis, Rita Hoffman, Joe Lung, Bob Musser, and Chuck Weirauch		
Seminole County:	Thomas Calhoun, Joseph Cordell, Gloria Eby, and Joe Saucer	Casselberry:	Marissa Williams

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
 - Reclaimed water calculator to be implemented
 - Buffer Zone: 15 feet from all waterbodies
- Shoreline Protection Ordinance Status
 - FWC Rule change removes permit requirements on lakes smaller than 160 acres
 - Rule change does not impact Howell Lake
 - Currently drafting County Shoreline Ordinance
 - LMP will update liaisons
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
 - TSI water quality improvements
 - Post hurricane effects
 - LVI score reduced to Impaired category
 - Score attributed to hydrilla presence
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7579&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - LMP to check suspected sources at Marbeya
 - Upstream hydrilla sources
 - Casselberry provided update on Winter Park herbicide drip treatment installation
 - Cattail mitigation project
 - North East cove planned for cattail treatment
 - Lois to provide LMP neighbor's confirmation of cattail removal
 - Hygrophylla treatment - Creeks discharging to Howell are inspected bi-monthly (including hydrilla and other invasives)
- 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
- 2019 Shoreline Planting Event- dates available
 - To be coordinated via Thomas Calhoun
 - 3 June dates proposed (6/1, 6/8, and 6/15), final decision to be made by Ken
 - Recommendation made to introduce more sensitive plant species
- Other
 - TGC Fish Barrier installed/ Dodd Rd washout 12/28/2018
 - Monitoring twice a month/ chemically and physically treated
 - TGC Stocking 4 fish/acre; 1600 carp stocked February 21, 2019
 - Email Address for routine communications and important announcements
 - NRCS downed tree debris removal currently taking place in Howell Creek
 - Water Quality project at Howell Creek weir construction complete, monitoring results
 - Azul development going in on north shore at Mayflower property, no lake access, just a fishing pier
 - City of Casselberry is doing Gabion basket work (erosion control structures) on Howell Creek
 - Liaisons inquired about FEMA reimbursement status for barrier, MSBU Program provided update

MSBU Program

- Financial Status [Refer to Exhibit B]

LAKE HOWELL 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 2015-6
- FWC permit
- Interlocal Agreement with the City of Casselberry

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 (The management of submersed vegetation other than hydrilla and provisions for lake access corridors are excluded from MSBU services.)
- Water hyacinth, water lettuce, torpedo grass, paragrass, cattail, water fern, algae, hygrophila

Frequency of AWC Treatment

AWC services are performed at the direction of the Seminole County LMP as per the Lake Howell Management Plan which will be reviewed at the annual planning sessions with the expectation that the Seminole County LMP may alter anticipated treatments as merited 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 governing ordinance limits assessment increases to no greater than 10% above the prior year assessment; the ordinance does not include provisions for an assessment cap.

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 Lake Howell are as shown in the following table and are current as of 2018. The open slots are available to property owners in the designated HOA or Association.

LIAISON NAME	EMAIL	REPRESENTATION
Pending		Carmel
Lung, Joe	joe_lung@cfl.rr.com	FOLH
Musser, Bob	BobM@dbsinfo.com	FOLH
Chavis, Lois	lkchavis@aol.com	Howell Harbor Estates
Travis, Jim	mrlakehowell@gmail.com	Lago Vista
Pending		Lake Howell Arms
DiPasqua, Carol	cjdipasqua@yahoo.com	Lakefront
Ferguson, Scott	sfergerson@orlandodiocese.org	Lakefront
Podunavac, Darryl	dpodunavac@orlandodiocese.org	Lakefront
Pending		Lakehurst
Hoffman, Rita	joyfulpassages@gmail.com	Marbeya
Weirauch, Chuck	cweirauch@mindspring.com	Sausalito Condo
Shady, Ron	SHADYR@EMBARQMAIL.COM	Sausalito Shores

COMMUNITY-BASED ACTIVITIES & EVENTS

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings along the shoreline of Lake Howell. 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 Lake Howell 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) Holding at least one annual community meeting with topics relevant to Lake Howell,
- 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 Lake Howell (such as newsletters and photos), and
- 5) 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!

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

Lake Howell 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. 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. 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

Lake Howell has an on-going history of hydrilla presence. In 2015 the hydrilla conditions were prolific and were addressed via an extensive whole-lake treatment shortly after the MSBU was created. Aggressive hydrilla growth in Lake Howell has the likelihood to continue. The timing and extent of hydrilla re-growth is affected by multiple natural and environmental factors that cannot be controlled or predicted with certainty. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for potential additional future whole lake treatment is advised. While extensive growth of hydrilla is possible at any point in time; it is anticipated that routine spot treatments of hydrilla with herbicides and re-establishing continuous biological control pressures from re-stocking with triploid grass carp fish will be sufficient to manage hydrilla re-growth during this fiscal year. The delay in stocking due to barrier installation complications has negative consequences and implications for managing hydrilla growth in follow-up to the recent whole-lake treatment.

Primary expectations for current fiscal year are as follows:

- 1) Monthly aquatic herbicide maintenance for non-native vegetation and hydrilla treatments (as needed)
- 2) Grass carp stocking as soon as barrier is cleared by FWC and other permitting
- 3) Continued monitoring of hydrilla, coontail, other submersed aquatic plants, and grass carp fish
- 4) Establish grass carp barrier debris and maintenance services following barrier installation

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 non-native vegetation and hydrilla treatments (as needed),
- 2) Future grass carp stockings if deemed necessary, pending permit amendment,
- 3) Continued monitoring of hydrilla, coontail, other submersed aquatic plants, and grass carp fish,
- 4) Continued grass carp barrier debris and maintenance services.

Funding Expectations

Refer to next fiscal year data provided in Exhibit B.

Exhibits

A – Agenda & Notes Prior Year Meeting

B – Financial Summary

C – Historic Reports/Data

D – Roles & Responsibilities

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

Date, Time & Location:	February 22, 2018, 11:00 a.m., 200 W. County Home Rd – LMP office
Community Liaisons:	Carol DiPasqua, Rita Hoffman, Joe Lung, Bob Musser, Darryl Podunavac, Ron Shady, Jim Travis, Lois Chavis and Chuck Weirauch
Liaisons Present:	
Seminole County:	Thomas Calhoun, Gloria Eby, Joe Saucer and Kathy Moore
Casselberry:	Marissa Williams (no attendance)

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

Lake Management Program

- Welcome
- Fertilizer Ordinance- Passed on February 27, 2017. www.seminolecountyfl.gov/fertilizer.
 - Fertilizer containing nitrogen or phosphorous 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 [Refer to Exhibit C:Bioassessment Indices]
 - LVI remains in Healthy category
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7579&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Upstream hydrilla sources
 - Cattail mitigation project
- 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
- 2018 Shoreline Planting Event- dates available
 - To be coordinated via Thomas Calhoun (May 19th)
- Other
 - TGC Fish Barrier/Stocking
 - Email Address for routine communications and important announcements
 - “No Motor Vehicle” signage at RSF
 - Email list to be sent for verification
 - Cattail mitigation project
 - Discussed treating hydrilla and endothal resistant hydrilla
 - Removal of water quality buoy
 - Discussed implementation of signs (no parking/trespassing) at the Red Bug RSF
 - Discussed matrix for funding section

MSBU Program

- Financial Summary - Refer to Exhibit B
- Tentative date for next annual meeting: ~~January 31~~, February 6, 2019 3:00PM

Exhibit B - Financial Summary

January 2019

Tax Year Assessment	2017 Matrix \$	2018 Matrix \$	2019 Matrix \$
Fiscal Year	FY17-18	FY18-19	FY19-20
REVENUE	Actual	Working Budget	Proposed Budget
Beginning Fund Balance	\$ 165,591	\$ 242,419	\$ 77,753
Assessments	\$ 122,625	\$ 121,584	\$ 121,584
Other	\$ 4,107	\$ 1,500	\$ 1,500
MSBU Program Fund Advance	\$ -	\$ -	\$ -
Other - FEMA	\$ -	\$ -	\$ 66,785
TOTAL	\$ 292,323	\$ 365,503	\$ 267,621
Cost Sharing Lake Management Program	\$ -	\$ -	\$ -
TOTAL	\$ 292,323	\$ 365,503	\$ 267,621
EXPENDITURE	Actual	Working Budget	Proposed Budget
Administrative Fees (includes mailings)	\$ 3,250	\$ 3,500	\$ 3,500
Fund Advance Repayment	\$ 21,200	\$ 20,600	\$ -
Contracted Services	\$ 25,454	\$ 263,650	\$ 37,650
<i>Routine Services</i>	\$ 1,364	\$ 6,250	\$ 6,250
<i>[SAV] Hydrilla</i>	\$ 14,885	\$ 170,000	\$ 25,000
<i>[SAV] TGC Fish</i>	\$ -	\$ 16,000	\$ -
<i>[SAV] Fish Barrier Service - NA</i>	\$ -	\$ 6,400	\$ 6,400
<i>[SAV] Fish Barrier Replacement - NA</i>	\$ 9,205	\$ 65,000	\$ -
<i>Nutrient Abatement (NAV)</i>	\$ -	\$ -	\$ -
<i>Harvesting</i>	\$ -	\$ -	\$ -
<i>Other</i>	\$ -	\$ -	\$ -
Reserve/Contingency	\$ 242,419	\$ 77,753	\$ 226,471
<i>Operating Contingency</i>	\$ 242,419	\$ 77,753	\$ (8,529)
<i>Reserve: Hydrilla (Whole Lake)</i>	\$ -	\$ -	\$ 170,000
<i>Reserve: Barrier Replace/Repair</i>	\$ -	\$ -	\$ 65,000
<i>Reserve: Admin Code & Ord Amnd</i>	\$ -	\$ -	\$ -
TOTAL	\$ 292,323	\$ 365,503	\$ 267,621
Cost Sharing Lake Management Program	\$ -	\$ -	\$ -
TOTAL	\$ 292,323	\$ 365,503	\$ 267,621
Fund Advance BB	\$ 40,000	\$ 20,000	\$ -
Payment (Principal)	\$ 20,000	\$ 20,000	\$ -
Fund Advance EB	\$ 20,000	\$ -	\$ -
MSBU Program Administration Cost	\$ 4,520	\$ 25,520	
LM Program Administration Cost	\$ 17,000		
Restoration Event Cost	\$ 4,000		

Exhibit C - Historic Reports/Data

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

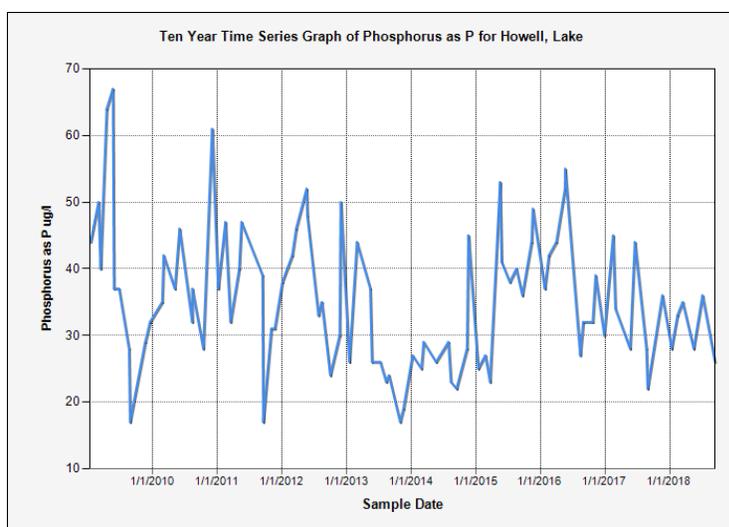
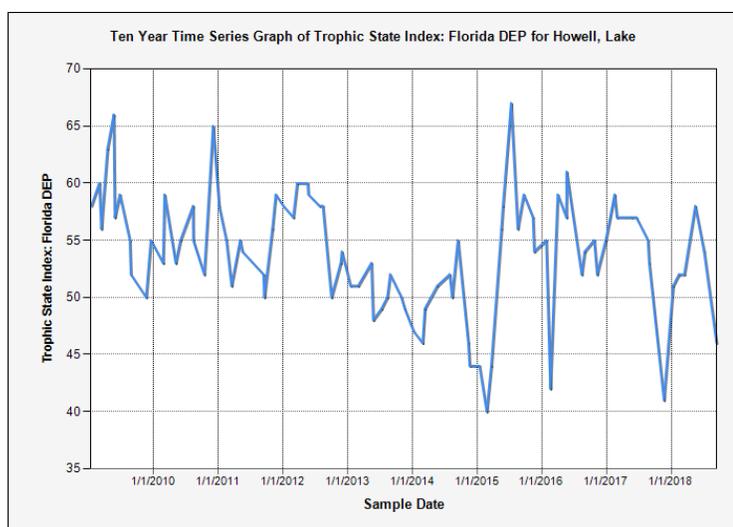
<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7579&wbodyatlas=lake>

<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7579>

Lake Howell Water Quality Report: How Does My Lake Rank? **TSI SCORE: 46 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? **41 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 most recent LVI bioassessment for Lake Howell (sampled on October 22, 2018) scored **41 Impaired**. This is a reduction from the 2017 score of **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"	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 & 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