

2023

**LAKE OF THE WOODS
LAKE MANAGEMENT PLAN**

Annual Meeting

- Agenda

Lake Management Plan

- General Provisions
- 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

LAKE OF THE WOODS: ANNUAL MEETING

Date /Time/ Location:	Monday, January 30, 2023 /9:00 am – 9:45 am/ ZOOM - Virtual
Community Liaisons:	Doug Bearden, Tim Hayes, Randy Lee, Glenn MacDonald, Nicole Murphy, Brian Nelson, Scott Sampsel, Sally Browne, Jim Cassady
Liaisons Present:	Michelle Segal, Jim Cassady, Sally Browne
Seminole County:	Thomas Calhoun, Tony Cintron, Daniel Barber, Chad Day, Michael Eason, Tameka Morton, Michelle Rosa-Munger, Lynda Reaves, Shannon Wetzel

General Topics & Updates

Lake Management Program

- Welcome
- Shoreline Protection Ordinance Status
 - County Shoreline Ordinance adopted April 2021
- Lake Status Nutrients/Habitat Scores [Refer to Exhibit C: Bioassessment Indices]
 - WQ data update
 - LVI score remains impaired
 - TSI score 58 good
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7686&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Spot treat Hydrilla as seen
 - Evaluate grass carp fish effects and adjust stocking rate as necessary
 - **51 carp to be stocked in 2023**
 - Monitor algae, coontail, southern naiad, eel grass, and treat as necessary
 - Maintaining access corridors – **Discussed access corridor issues**
 - Coontail treated November 2022
- General recommendations for Lake Community [Refer to Lake Management Plan]
 - Increase native aquatic plantings in areas devoid of vegetation
 - Residents removal of eelgrass clippings from shoreline will reduce potential algae blooms
 - Educate community on Shoreline Protection Ordinance
 - Promote “welcome packages” to new lakefront homeowners
 - Will give liaisons welcome packages to handout to new or interested homeowners
 - Lakewatch?
- 2023 Shoreline Planting Event – Dates tentative
 - To be coordinated via Tony Cintron
 - Plants to be funded by MSBU funds
- Other
 - Grass Carp Barrier
 - **Roads and Stormwater were notified about the weir boards**
 - Email addresses for routine communications and important announcements
- Nutrient Abatement/Water Quality Projects
 - **Drainage basin study in progress**
 - **Baffle box was installed**
 - Harvesting costs and scope for floating vegetation
 - Cost to benefit ratio just not there to support this activity currently (**going rate with several vendors is currently \$3000-\$8000 per pass**)

MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]

LAKE OF THE WOODS LAKE MANAGEMENT PLAN

GENERAL PROVISIONS

Scope of Public Lake Management Services

The scope of public lake management 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 09-14
- FWC Triploid Grass Carp Permit
- Agreement with Lake of the Woods Homeowners Association, Inc.
- Roles and Responsibilities – Exhibit

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

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

Targeted Invasive/Exotic Aquatic Vegetation

- Hydrilla, water hyacinth, torpedo grass, paragrass, cattail, primrose willow, alligator weed, Cuban bulrush, exotic water lily, wild taro, water fern, algae, spatterdock, southern naiad, coontail, and willow.

Frequency of Aquatic Vegetation Management Treatment (herbicides)

Treatment services are performed at the direction of the Seminole County LMP as per the Lake of the Woods 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.

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 does not include assessment restrictions specific to annual adjustment amounts and/or assessment cap.

Seminole County Employees

Information for contacting the employees of Lake Management and the MSBU program:

Lake Management – Thomas Calhoun (tcalhoun@seminolecountyfl.gov), Tony Cintron (acintron@seminolecountyfl.gov), Daniel Barber (dbarber02@seminolecountyfl.gov), Chad Day (cday02@seminolecountyfl.gov)

MSBU – Michael Eason (meason@seminolecountyfl.gov), Tameka Morton (tmorton@seminolecountyfl.gov), Michelle Rosa-Munger (mrosamunger@seminolecountyfl.gov)

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 current liaisons for Lake of the Woods are:

Doug Bearden (DougVBearden@gmail.com), Tim Hayes (thayesiv@aol.com), Randy Lee (rlee@jetlift.com), Glenn MacDonald, Nicole Murphy (nmurphy0315@earthlink.net), Brian Nelson (halfnelly@gmail.com), Scott Sampsel (ScottCSampsel@gmail.com) and Sally Brown (sbrowne918@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 plant beneficial native aquatic plants in key areas along the shoreline creating a beneficial shoreline for Lake of the Woods. 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 Lake of the Woods community.

Continued recommendations for community initiatives are as follows:

- 1) Plant a healthy shoreline with native emergent plants;
- 2) Establishing a formal Lake Association holding at least one annual meeting with topics relevant to your lake;
- 3) Establish a backyard berm and swale system where applicable;
- 4) 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 such as grass clippings, Contact us at 407-665-5542 for assistance;
- 5) Fertilize wisely by using phosphorous free and slow-release nitrogen based fertilizers only. Visit www.seminolecountyfl.gov/fertilizer for more information; and
- 6) Provide content for the Seminole County Water Atlas Lake Management Webpage for your 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

Lake of the Woods 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 bioassessments. 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

Hydrilla growth in Lake of the Woods 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 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 Lake of the Woods, 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. LMP will continue to closely monitor and gauge hydrilla in Lake of the Woods. Hydrilla deposits bulb like seeds (tubers) into the sediment which can remain viable for up to six years. Tubers are produced in each growing season and are used to perennialize the plant as a means of propagation (re-growth). Since Lake of the Woods was previously infested with hydrilla, many tubers were deposited in the lake bed during this time. The recommendation for the management plan in Lake of the Woods is to continue to integrate use of contact herbicides with grass carp fish to manage hydrilla re-growth from tubers.

Eelgrass Inquiries: Seminole County continues to receive inquiries regarding eelgrass impacting boating access. Eelgrass is a beneficial native aquatic plant. The management of eelgrass is not financed through the MSBU assessment. Adding eelgrass management to the current MSBU would yield a significant increase in the annual MSBU assessment. Property owners interested in adding eelgrass management to the MSBU service scope are encouraged to contact their lake liaisons to discuss financial implications and the process for adding this plant to the scope of funded services.

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 close monitoring of hydrilla (re-growth from tuber production),
- 2) Conduct spot treatments of hydrilla if required,
- 3) Continued treatment of the invasive aquatic plants – herbicides,
- 4) Monitor/control/replant managed areas,
- 5) Future grass carp stockings if required,
- 6) Continue to increase number of shoreline re-vegetation sites (lakefront community).

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)

Date /Time/ Location:	Monday, March 7 th , 2022 /9:00 am – 9:45 am/ ZOOM - Virtual
Community Liaisons:	Doug Bearden, Tim Hayes, Randy Lee, Glenn MacDonald, Nicole Murphy, Scott Murphy, Brian Nelson, Scott Sampsel, Andra Smith
Liaisons Present:	Scott Murphy, Sally Brown
Seminole County:	Daniel Barber, Tony Cintron, Michael Eason, Tameka Morton, & Lynda Reaves

General Topics & Updates

Lake Management Program

- Welcome
- Shoreline Protection Ordinance Status
 - County Shoreline Ordinance adopted April 2021
- Lake Status Nutrients/Habitat Scores [Refer to Exhibit C: Bioassessment Indices]
 - WQ data update
 - LVI score dropped to Impaired due to an increase in invasive taxa
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7686&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Spot treat hydrilla as seen
 - Evaluate grass carp fish effects and adjust stocking rate as necessary
 - 51 carp added Nov 2021
 - Monitor algae, coontail, southern naiad, eel grass, and treat as necessary
 - Eelgrass access corridor treatments were conducted
 - Coontail is getting treated as it tops out. Larger coontail treatments on South and East shorelines
- General recommendations for Lake Community [Refer to Lake Management Plan]
 - Increase native aquatic plantings in areas devoid of vegetation
 - Residents removal of eelgrass clippings from shoreline will reduce potential algae blooms
 - Educate community on Shoreline Protection Ordinance
 - Promote “welcome packages” to new lakefront homeowners
 - Will give liaisons welcome packages to handout to new or interested homeowners
 - Need new Lakewatch volunteer – liaisons could ask neighbors for volunteer.
 - Training would be handled by Seminole County
- 2022 Shoreline Planting Event – Dates Available
 - To be coordinated via Tony Cintron – Tony will be sending out dates for future events
 - Plants to be funded by MSBU funds
 - Transportation restrictions
- Other
 - TGC Fish Barrier
 - New contractor for monthly barrier maintenance
 - Email addresses for routine communications and important announcements
- Nutrient Abatement/Water Quality Projects
 - Baffle Boxes & Wellington Pond – other two baffle boxes are on hold due to legal issues
 - Harvesting costs and scope for floating vegetation
 - Cost to benefit ratio just not there to support this activity at this time (going rate with several vendors is currently \$3000-\$8000 per pass)

MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]

Exhibit B - Financial Summary

MSBU FUND: WOODS, LAKE OF THE

	2021	2022	2023
Tax Year			
Assessment	\$ 375	\$ 375	\$ 375
Fiscal Year	FY21-22	FY22-23	FY23-24
Revenue	Actual	Working	Proposed
Beginning Fund Balance	\$ 109,326	\$ 109,549	\$ 109,094
Assessment Revenue	\$ 19,234	\$ 19,080	\$ 19,080
Other (Interest)	\$ 707	\$ 400	\$ 400
Other - Per Ordinance Cost Share	\$ -	\$ -	\$ -
Other - Per Interlocal Agreement	\$ -	\$ -	\$ -
Other - General Fund/WMDiv or 1c ST	\$ -	\$ -	\$ -
Other - FEMA	\$ -	\$ -	\$ -
MSBU Program Fund Advance	\$ -	\$ -	\$ -
TOTAL Revenue	\$ 129,267	\$ 129,029	\$ 128,574
Expenditure & Reserves	Actual	Working	Proposed
Application Fee Recoupment	\$ -	\$ -	\$ -
MSBU Program Administrative Fee [7% Rev FY21-22]	\$ 1,335	\$ 1,335	\$ 1,335
Other County Services (Service Entity)	\$ -	\$ -	\$ -
Fund Advance Repayment	\$ -	\$ -	\$ -
Contracted Services	\$ 18,383	\$ 18,600	\$ 17,000
<i>AWC Services (via AAM)</i>	\$ 943	\$ 5,000	\$ 8,000
<i>Chemicals (Non-AAM)</i>	\$ -	\$ 10,000	\$ -
<i>FAS/GEN Testing</i>	\$ -	\$ -	\$ -
<i>Shipping (Test Samples)</i>	\$ -	\$ -	\$ -
<i>TGC Fish</i>	\$ -	\$ -	\$ -
<i>Fish Barrier Inspection/Minor Repair</i>	\$ 765	\$ 3,600	\$ 4,000
<i>Fish Barrier Replace/Major Repair</i>	\$ 200	\$ -	\$ -
<i>Nutrient Abatement (Product) - pending BCC approval</i>	\$ -	\$ -	\$ -
<i>Nutrient Abatement (Prof. Services) - pending BCC approval</i>	\$ -	\$ -	\$ -
<i>Harvesting (and/or Cattails/Eelgrass)</i>	\$ -	\$ -	\$ 5,000
<i>Lake Maintenance</i>	\$ 16,475	\$ -	\$ -
<i>Other</i>	\$ -	\$ -	\$ -
Total Expenditure & Reserves	\$ 19,718	\$ 19,935	\$ 18,335
Reserve/Contingency¹	\$ 109,549	\$ 109,094	\$ 110,239
¹ Note: These funds are secured (1) for maintaining rate stability as annual cost are known to fluctuate, (2) in preparation of planned or anticipated future expenses, (3) to provide response to emergency and/or urgent needs for which planning was not feasible. These funds are not intended for expenditures that could be planned and included in annual budget planning processes.			
LM Program Enhanced Services Cost	<i>Pending development & confirmation</i>		

Reserve/Contingency Funds

The primary purpose for establishing contingency/reserve funding is twofold – (1) To have funding on hand to accommodate unexpected essential aquatic weed control emergencies that cannot be reasonably foreseen, planned or identified in routine budget planning & forecasting and (2) To provide rate stability as costs for ongoing services often vary from year to year. By establishing contingency and reserve funds, such funding may be allocated temporarily from these funds to operating expenditures to avoid periodic spikes in assessment.

Contingency funds are developed by financial management planning decisions and by default when actual expenditures are less than budgeted expenses. Although reserve/contingency funds are not expected to be expended in any given year, these values are included under expenditures because they are “on hold” for future needs and are classified by accounting practices as expenditures.

In the financial summary (Exhibit B) the total dollars in reserve/contingency are identified in the expenditure section on a single line (darker shading). The total dollars in contingency are calculated by subtracting the other expenditures (typically “contracted services” and “administrative fee”) from the total revenue. Contingency funds may be used as deemed essential to meeting emergency needs of the waterbody.

Exhibit C - Historic Reports/Data

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

<http://www.seminole.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7686>
<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7686>

Lake of the Woods Water Quality Report: How Does My Lake Rank? TSI SCORE: 58 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).

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? 37 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 the aquatic plant communities in Florida lakes. The most recent LVI bioassessment for Lake of the Woods (sampled on July 27, 2022) scored a 37 Impaired, placing it in the Impaired Category. This is a decrease from the previous score of 39 Impaired is due to an increase in invasive plant taxa.

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.

Lake of the Woods

Trend Report

2022



TSI Score: 58

(Trophic State Index)

Good

LCI Score: 33

(Lake Condition Index)

Poor

LVI Score: 37

(Lake Vegetation Index)

Impaired

FDEP Status

(Florida Dept of Environmental Protection)

Not Impaired

TMDL Status

(Total Maximum Daily Load)

No TMDL

BMAP

(Basin Management Action Plan)

Jesup

Howell Creek Watershed

51.24 acres

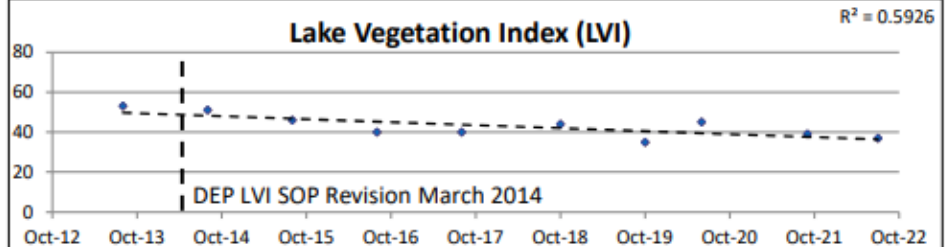
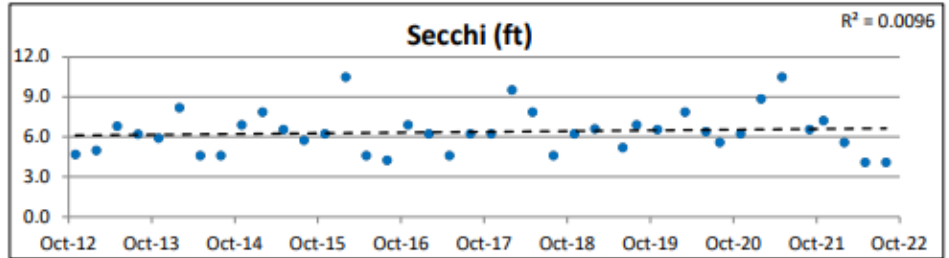
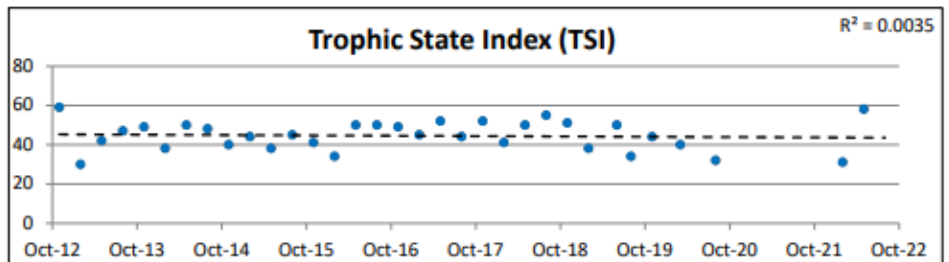
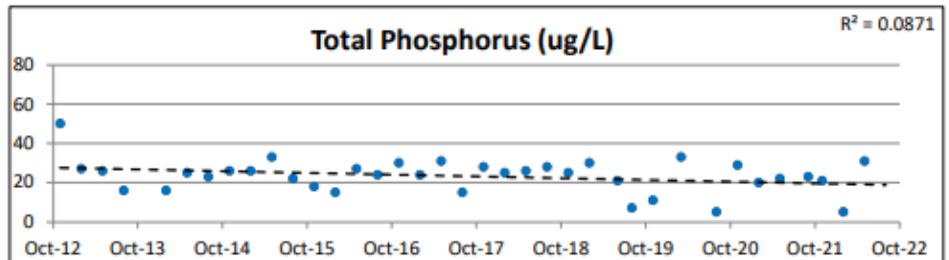
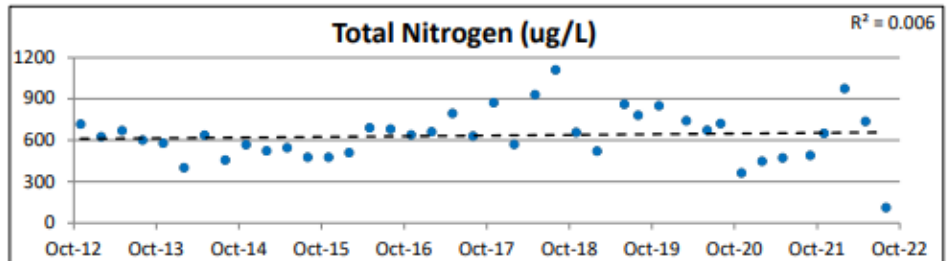
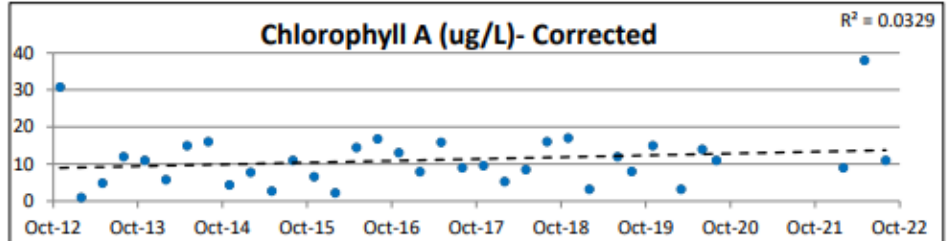
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Lon 81° 20' 54" W

WBID 29977

For more information please visit:

seminole.wateratlas.usf.edu/

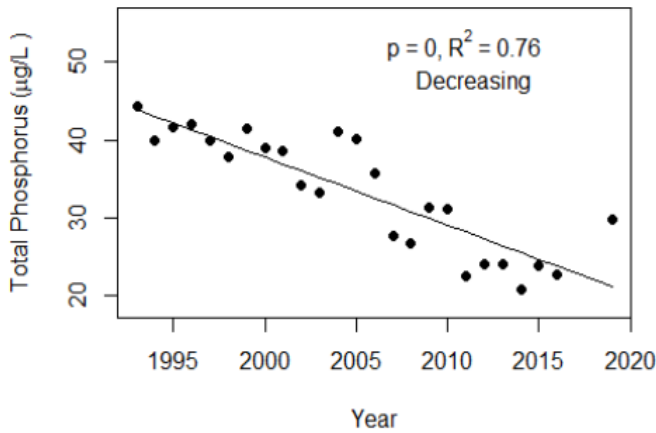


Florida LAKEWATCH Data:

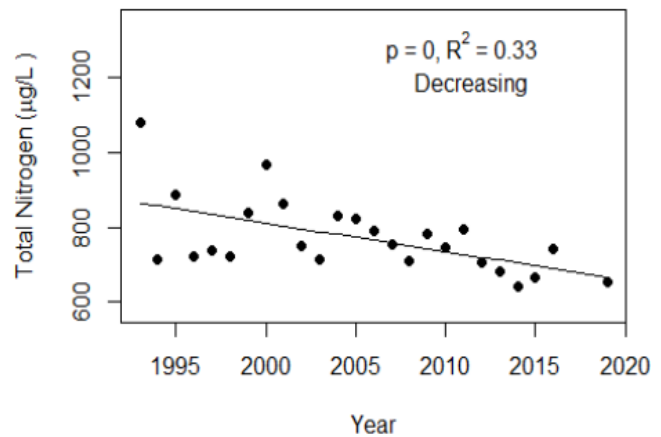
Total Phosphorus and Total Nitrogen

Trend plots of annual average total phosphorus and annual average total nitrogen versus year. The R² value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R² the stronger the relation) and the p value indicates if the relation is significant (p < 0.05 is significant). Trend status are reported on plots.

Woods (Seminole)



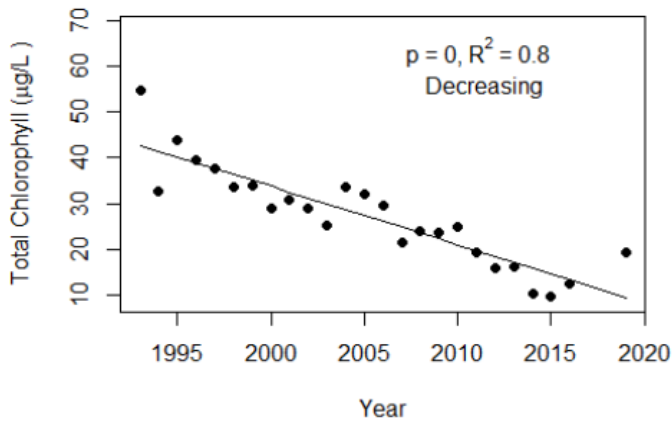
Woods (Seminole)



Total Chlorophyll and Secchi Depth

Trend plots of annual average chlorophyll and annual average Secchi versus year. The R² value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R² the stronger the relations and the p value indicates if the relation is significant (p < 0.05 is significant). Trend status are reported on plots.

Woods (Seminole)



Woods (Seminole)

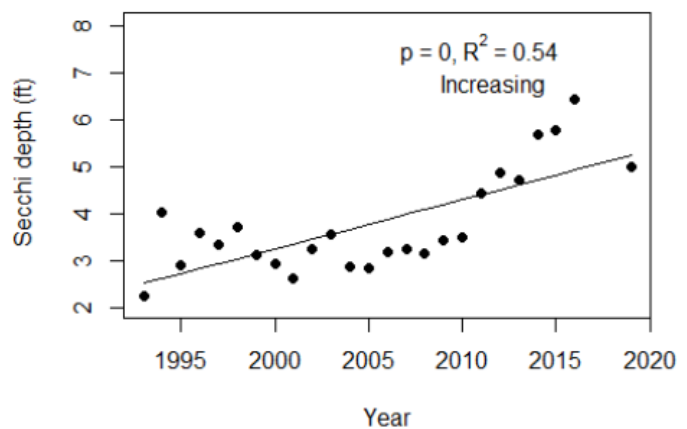


Exhibit D

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