

2023

**HORSESHOE LAKE NORTH
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

HORSESHOE LAKE NORTH

ANNUAL MEETING

Date /Time/ Location	: Thursday, January 26, 2023 /2:00 pm – 3:00 pm/ ZOOM - Virtual
Community Liaisons	: Mike Dathe, Lori Frost, Chuck Griffin, Steve & Patty Searcy, Kimberly Kukets, Brian and Kristine Kushner
Liaisons Present	: Lori Frost, Mike Dathe, Chuck Griffin, Patty Searcy
Seminole County	: Thomas Calhoun, Tony Cintron, Daniel Barber, Chad Day, Michael Eason, Tameka Morton, Michelle Rosa-Munger, Lynda Reaves
City of Oviedo	:

General Topics & Updates

Lake Management Program

- Shoreline Protection Ordinance Status
 - County Shoreline Ordinance approved in April 2021
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
 - LVI score remained steady in the healthy category
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7576&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection and rapid response); if you see it, let us know ASAP!
 - Hydrilla currently being treated
 - Stocking of 50 grass carp December 2023
 - Carp barrier
 - Inspected bi-monthly and treated monthly for invasive plants surrounding barrier
 - Water hyacinth sprayed on site
- 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
 - Encourage Community Educational Meeting in 2023 **Mike & Bryan to coordinate w/ SC community meeting**
 - Old World Fern presence expanding. County contractor treating lake-side; County recommends homeowners treat in upland
 - Remove old carp barrier
- Lakewatch Samples
 - Lakewatch representatives – Steve & Patty Searcy since 2011
- 2023 Shoreline Planting Event – Dates tentative
 - To be coordinated via Tony Cintron
 - Plants to be funded by MSBU funds
 - **Plant info flyers to be sent**
 - **Lori to host fall SERV event**
- Other
 - **Quarterly newsletter to add TSI and Acres**
 - **Thomas to keep liaison list up to date**

MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]
- MSBU to investigate lowering assessment
- **Gather all invoices**
- **LMP does not advice lowering the assessment**

HORSESHOE LAKE NORTH 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 2012-15; 2017-19
- Interlocal Agreement [IA] with City of Oviedo
- FWC Triploid Grass Carp 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.)
- Physical (hand removal)

Targeted Invasive/Exotic Aquatic Vegetation

- Hydrilla, water hyacinth, torpedo grass, alligatorweed, wild taro, primrose willow, duckweed, Salvinia, water fern, Cuban burhead sedge, coinwort, and algae.

Frequency of Aquatic Vegetation Management Treatment (herbicides)

Treatment services are performed at the direction of the Seminole County LMP as per the Horseshoe Lake North 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 staff

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 liaisons for Horseshoe Lake North are: Mike Dathe (mike@dataimaged.com), Chuck Griffin (grif5884@bellsouth.net), Lori Frost (lafpt4u@bellsouth.net), Kimberly Kuketz (lady.ireland@live.com), Patty Searcy (steveandpatty1@att.net), and Brian Kushner (bakushner@yahoo.com).

COMMUNITY-BASED ACTIVITIES & EVENTS

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings along the shoreline of Horseshoe Lake North. The intention of such an event is to plant beneficial native aquatic plants to key areas in need 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 Horseshoe Lake North community. Continued recommendations for community initiatives are as follows:

- 1) Continue to work together with other lakefront owners. Have *at least* one annual lake association meeting, invite guest speakers (such as county or state biologists) and discuss lake specific issues, especially nutrients/lake management recommendations. LMP staff would be glad to present our bioassessment and surveys.
- 2) Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. LMP recommends planting in new locations that are shallower and have more sunlight.
- 3) Natives will grow and contain non-natives (and vice-versa) that become difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. Everyone must become stewards of the lake; in that they should assist and facilitate the removal of non-natives in close proximity to the natives and replant the area with beneficial natives for greater overall success.
- 4) Utilize the valuable educational outreach programs that are available, i.e. Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community to reduce personal pollution by: decreasing fertilizer usage, using only phosphorous free and slow-release nitrogen fertilizers, keeping a functional shoreline with beneficial native aquatic plants, and keeping grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-5542 for more information regarding the free educational programs available, and visit www.seminolecountyfl.gov/fertilizer for more fertilizer information.
- 5) LAKEWATCH volunteers provide valuable water quality data for your lake. Continue monthly samples and establish a back-up volunteer for consistent data collection.
- 6) Help spread the word! Obtain email addresses from neighbors not currently on the distribution list. Valuable information is contained within these assessments.

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. Horseshoe Lake North 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 bio-assessment.

Current Fiscal Year – Planned Treatment & Funding

Primary Aquatic Plant Management Expectations

Seminole County [MSBU/LMP] is tasked with managing the invasive-exotic species within the lake, and does so per accepted best lake management practices supported by lake management professionals. LMP/MSBU Programs affirmed that aquatic vegetation management services will continue to be rendered per these standards. Invasive growth in Horseshoe Lake North has likelihood to continue; however, the timing and extent of invasive re-growth is affected by multiple natural and environmental factors that cannot be controlled or predicted with certainty.

Funding Expectations

Refer to the current fiscal year data provided in Exhibit B.

Next Fiscal Year – Projected Treatment & Funding

Primary Aquatic Plant Management Expectations

- 1) Continued aquatic herbicide maintenance for invasive vegetation, including 8th St. canal,
- 2) Increase contingency reserve funds for extended herbicide management and/or other issues that may develop and require immediate treatment.

Funding Expectations

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

Exhibits

A – Agenda & Notes from Prior Year Meeting

B – Financial Summary

C – Historic Reports/Data

D – Role & Responsibilities

Exhibit A – Agenda & Notes from Prior Year Planning Session

Date /Time/ Location	: Tuesday, March 1 st , 2022 /2 pm – 3 pm/ ZOOM - Virtual
Community Liaisons	: Mike Dathe, Chuck Griffin, and Steve & Patty Searcy
Liaisons Present	:
Seminole County	: Daniel Barber, Thomas Calhoun, Tony Cintron, Michael Eason, Tameka Morton, Lynda Reaves, Kim Ornberg
City of Oviedo	:

General Topics & Updates

Lake Management Program

- Shoreline Protection Ordinance Status
 - County Shoreline Ordinance approved in April 2021
 - Shoreline unauthorized clearing- SJRWMD intervention- report any clearing to SJRWMD and City of Oviedo
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
 - LVI score remained steady in the healthy category
 - Few invasive plants observed
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7576&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection and rapid response); if you see it, let us know ASAP!
 - No hydrilla present on last survey. Will continue to monitor
 - Evaluate grass carp fish and adjust stocking rate as necessary
 - Very little SAV presence
 - Carp barrier
 - Inspected bi-monthly and treated monthly for invasive plants surrounding barrier
 - Water hyacinth sprayed on site
- 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
 - Encourage Community Educational Meeting in 2022
 - Old World Fern presence expanding. County contractor treating lake-side; County recommends homeowners treat in upland
 - OWCF ID and treatment procedures sent
- Lakewatch Samples
 - In addition to Lakewatch, County samples quarterly
 - Lakewatch data included with Seminole County trend data
 - Lakewatch representatives – Steve & Patty Searcy since 2011
- 2022 Shoreline Planting Event – Dates Available
 - To be coordinated via Tony Cintron
 - Available SERV dates sent
 - Plants to be funded by MSBU funds
 - Transportation restrictions

MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]
- MSBU Program Administrative Fee – 7% of Budgeted Assessment Revenue
- MSBU to investigate lowering assessment

Liaison Topics

- MSBU meeting minutes & requests for information
- Shoreline Violations & Shoreline Protection Ordinance
- Community meeting
- Liaison roles & terms
- Two liaisons appointed by BCC City of Oviedo/Brian Kushner and Patty Searcy

Exhibit B - Financial Summary

MSBU FUND:

HORSESHOE N (LAKE)

	2021	2022	2023
Tax Year			
Assessment	\$ 165	\$ 165	\$ 165
Fiscal Year	FY21-22	FY22-23	FY23-24
Revenue	Actual	Working	Proposed
Beginning Fund Balance	\$ 20,692	\$ 26,780	\$ 27,156
Assessment Revenue	\$ 9,755	\$ 10,560	\$ 10,560
Other (Interest)	\$ 172	\$ 55	\$ 55
Other			\$
MSBU Program Fund Advance			
TOTAL Revenue	\$ 30,619	\$ 37,395	\$ 37,771
Expenditure & Reserves	Actual	Working	Proposed
Application Fee Recoupment	\$ -	\$ -	\$ -
MSBU Program Administrative Fee [7% Rev FY21-22]	\$ 739	\$ 739	\$ 740
Other County Services (Service Entity)	\$ -	\$ -	\$ -
Fund Advance Repayment	\$ -	\$ -	\$ -
Contracted Services	\$ 3,100	\$ 9,500	\$ 4,500
<i>AWC Services (via AAM)</i>	\$ 3,100	\$ 8,000	\$ 3,000
<i>Chemicals (Non-AAM)</i>	\$ -	\$ -	\$ -
<i>FAS/GEN Testing</i>	\$ -	\$ -	\$ -
<i>Shipping (Test Samples)</i>	\$ -	\$ -	\$ -
<i>TGC Fish</i>	\$ -	\$ -	\$ -
<i>Fish Barrier Inspection/Minor Repair</i>	\$ -	\$ 1,500	\$ 1,500
<i>Fish Barrier Replace/Major Repair</i>	\$ -	\$ -	\$ -
<i>Other</i>	\$ -	\$ -	\$ -
<i>Carryforward from prior FY</i>	\$ -	\$ -	\$ -
Total Expenditures & Reserves	\$ 3,839	\$ 10,239	\$ 5,240
Reserve/Contingency¹	\$ 26,780	\$ 27,156	\$ 32,531

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.

Reserve/Contingency Funds

The financial summary [Exhibit B] of the Annual Report was updated in 2019 to include additional information about contingency fund status. The MSBU Program has provided this additional information to improve transparency respective to the reason and intended purpose for these funds.

The primary purpose for establishing operating contingency 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; however, the overall intention of use is as per the noted sub-categories.

When a negative value is displayed in the sub-category labeled “operating contingency”, it is an indication that the other subcategories reflect targeted sub-category values that have not been fully developed. For the other sub-categories to be fully developed, the “operating contingency” sub-category must be zero or a positive value.

The sub-category labeled “Reserve: Other” is included for improved transparency as use of these funds is on hold for purposes that are subject to Board confirmation and subsequent evaluation of ordinance provisions (potentially ordinance amendment) before these funds can be budgeted and utilized for the proposed purposes.

Exhibit C - Historic Reports/Data

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

<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7576>

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7576&wbodyatlas=lake>

Horseshoe Lake North Water Quality Report: How Does My Lake Rank?

TSI SCORE: 39 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?

44 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 Horseshoe Lake North (sampled on August 4, 2022) scored a **44 Healthy**, remaining in the Healthy category. This is a decrease from last year's LVI score **52 Healthy**, due to a decrease in dominant sensitive 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.

Seminole County Data

Trend Report

2022



TSI Score: 29

(Trophic State Index)

Good

LVI Score: 44

(Lake Vegetation Index)

Healthy

FDEP Status

(Florida Dept of Environmental Protection)

Not Impaired

TMDL Status

(Total Maximum Daily Load)

No TMDL

BMAP

(Basin Management Action Plan)

No BMAP

Big Econlockhatchee Watershed

70 acres

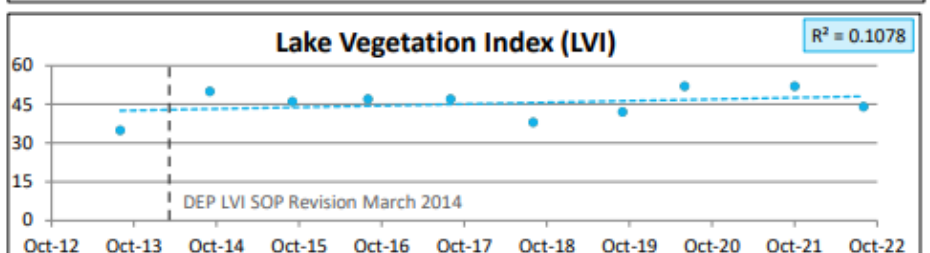
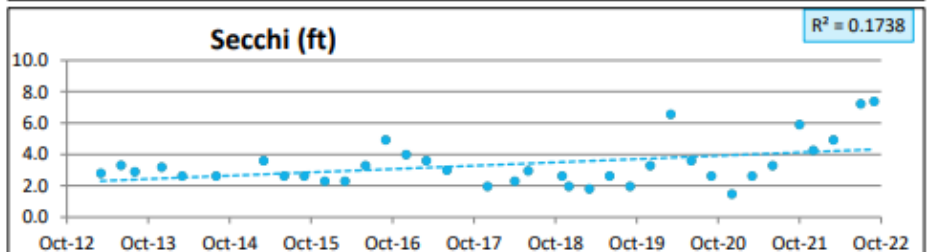
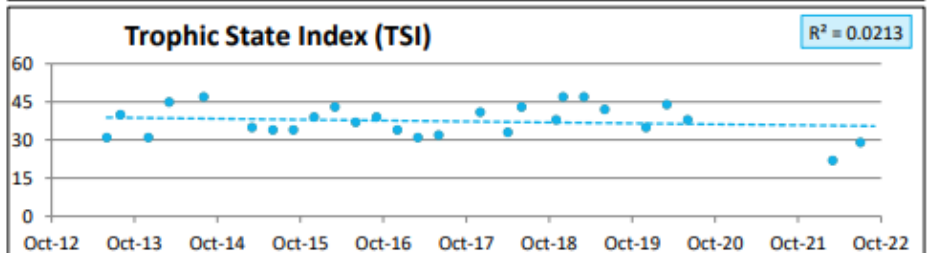
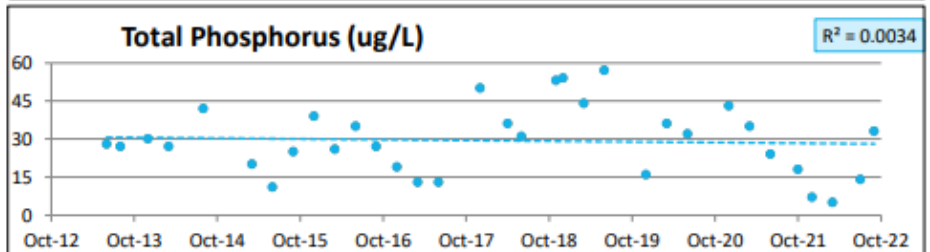
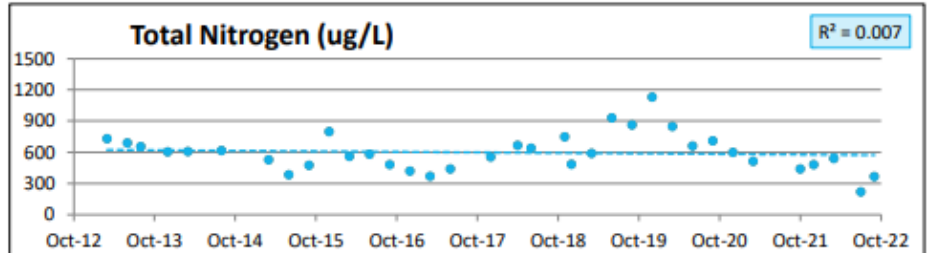
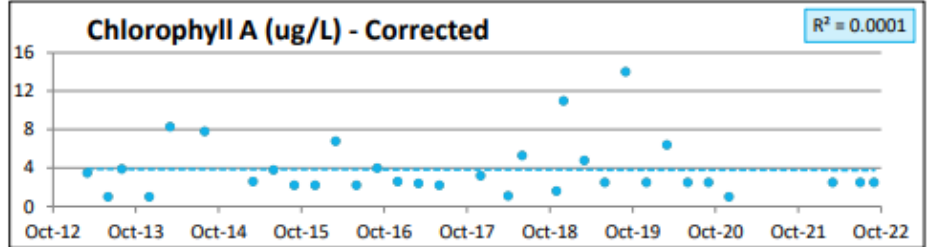
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Lon 81° 08' 14" W

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For more information please visit:

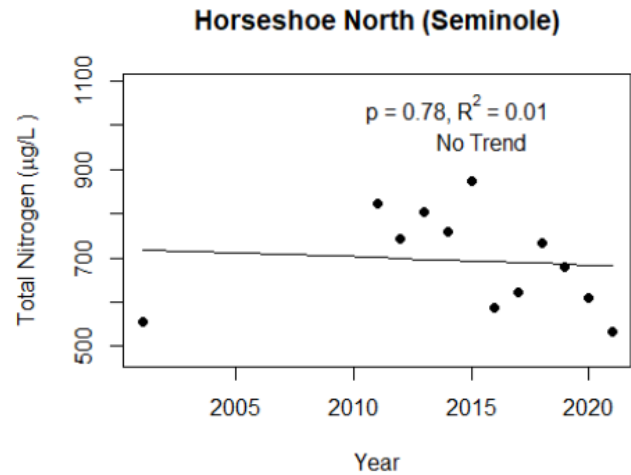
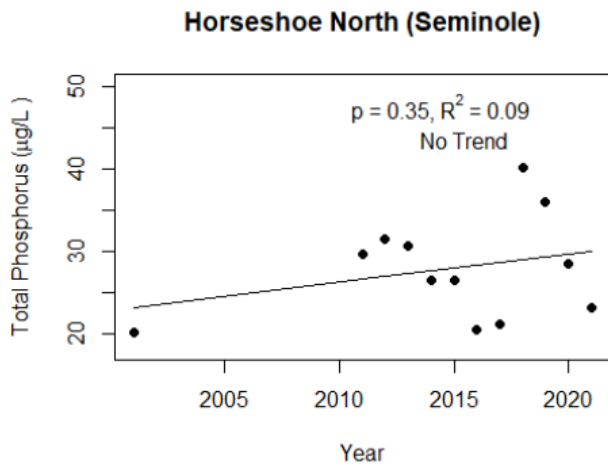
seminole.watratlas.usf.edu/



Florida LAKEWATCH Data:

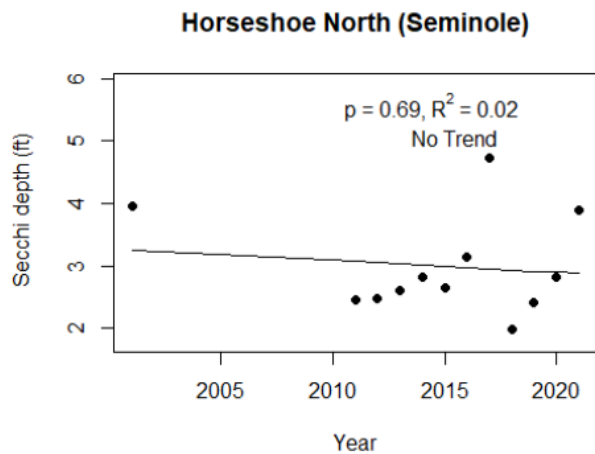
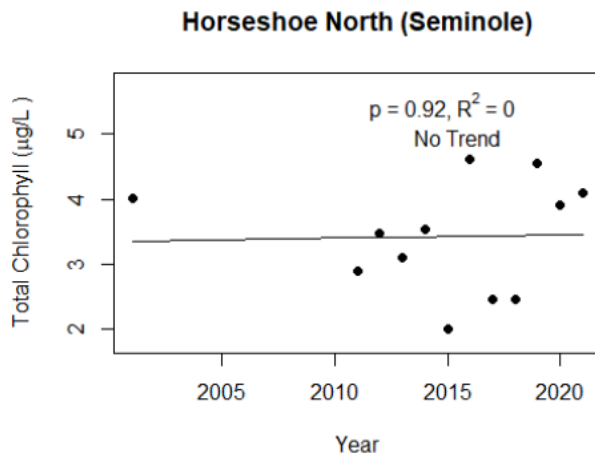
Total Phosphorus and Total Nitrogen

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.



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.



North Horseshoe

Lake Watch Data

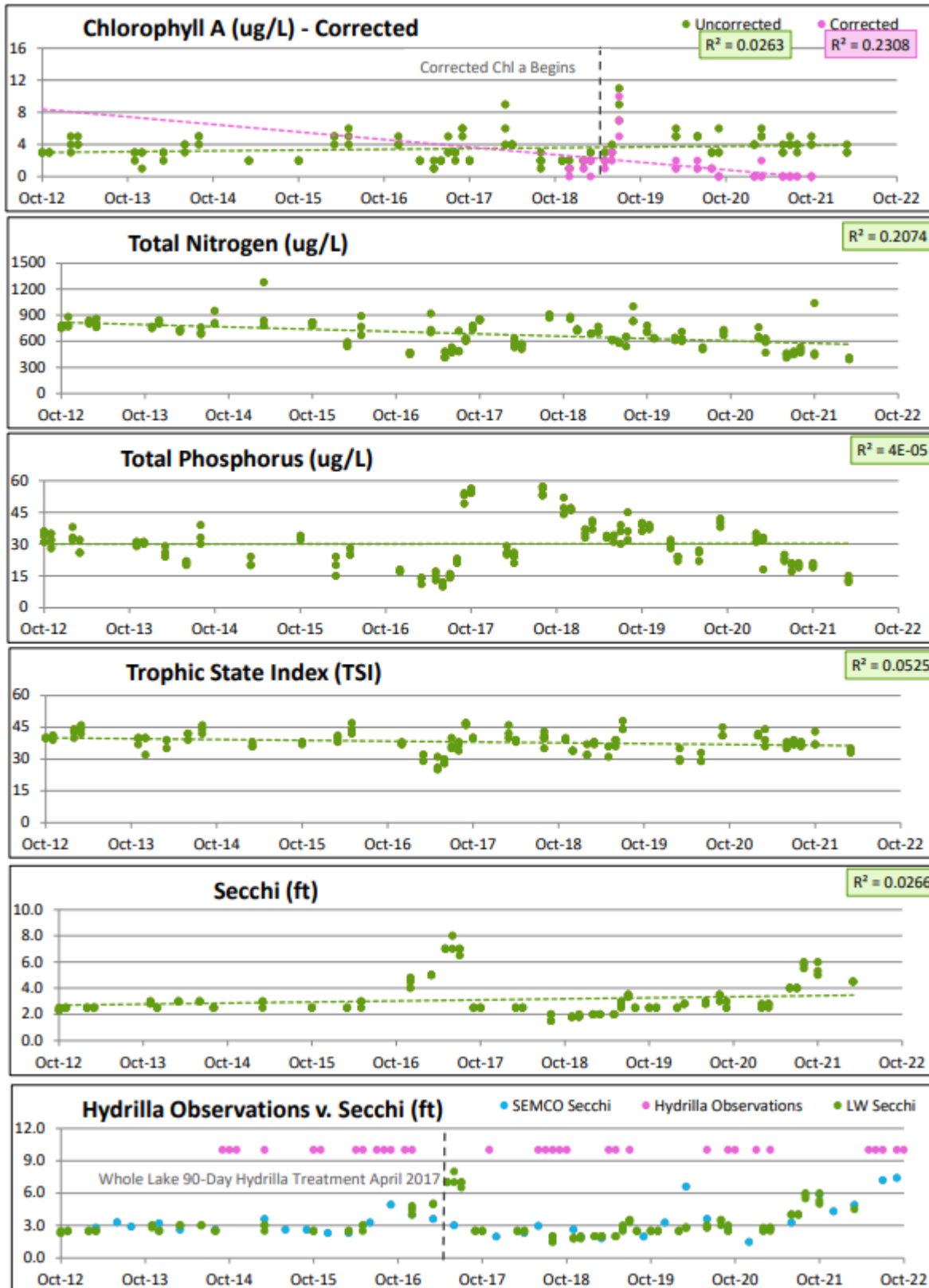


Exhibit D
ROLES & RESPONSIBILITY
General Outline

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 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

Liaison Service Term Schedule *Needs Update*

	By Ordinance	Liaison	Term Start	Term Ends	Term
1	Unincorporated Liaison A	Frost (1 st term)	2017	12/31/2019	3 yrs
2	Unincorporated Liaison B	Searcy (1 st term)	2018	12/31/2020	3 yrs
3	City Liaison A	Janke (1 st term)	2017	12/31/2019	3 yrs
4	City Liaison B	Kuketz (1 st term)	2018	12/31/2020	3 yrs
5	Rotating Liaison	Griffin (1 st term)	2018	12/31/2018*	1 yr*
1	Unincorporated Liaison A	Frost (2 nd term)	1/1/2020	12/31/2022	3 yrs
2	Unincorporated Liaison B	Pending start date	1/1/2021	12/31/2023	3 yrs
3	City Liaison A	Dathe (1 st term)	1/1/2020	12/31/2022	3 yrs
4	City Liaison B	Pending start date	1/1/2021	12/31/2023	3 yrs
5	Rotating Liaison*	Griffin (2 nd term)	1/1/2019	12/31/2021	3 yrs

*Unincorporated 1st, then City

*Reduced term to establish staggered terms

