

March 1, 2018

**LAKE PICKETT
LAKE MANAGEMENT PLAN
[Interlocal Agreement]**

Annual Meeting – 2018

- Agenda

Lake Management Plan

- General Provisions & Scope of Services
- Community-Based Activities & Events
- Current Fiscal Year
 - Planned Treatments & Funding
- Next Fiscal Year
 - Projected Treatments & Funding
- Exhibits
 - Lake Bioassessment Summary
 - Historic Reports/Data
 - Respective County Budget & Financial Summary
 - Agenda/ Annual Meeting Notes (Prior Year)
 - Document Amendments

LAKE PICKETT

ANNUAL OC/SC/OCAB/LIAISON MEETING

Date, Time & Location	: March 1, 2018 xxx p.m.
Orange County Advisory Board	: Debra Parrish (unable to attend)
Seminole County Community Liaison	: Jay Zembower(unable to attend)
Orange County	: David Hansen and Melissa Lavigne
Seminole County	: Thomas Calhoun, Joey Cordell, Gloria Eby, & Joe Saucer

General Topics & Updates [Meeting Notes]

- Welcome
- Fertilizer Ordinance [Seminole County] - 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 [Bioassessment Indices - Refer to Exhibit C]
 - Lake remains in Healthy category
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7636&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Evaluate grass carp fish effects and adjust stocking rate as necessary
 - Continue to educate on the benefits of bog moss for Lake Pickett
 - Monitor limnophila and treat as necessary
- General recommendations for lake-community consideration [Refer to Lake Management Plan]
 - Increase native aquatic plantings in areas devoid of vegetation
 - Promote "welcome packages" to new lakefront homeowners
 - Lakewatch samples - 3 months collected in 2017
- 2018 Shoreline Planting Event- dates available
 - To be coordinated via Thomas Calhoun- Seminole County
 - Orange County
- Other
 - TGC Fish Barrier
 - Email Address for routine communications and important announcements
 - Nutrient Study- Draft report and community meetings. Discuss potential water quality projects generated from the Hydrologic/Nutrient evaluation. How will these projects be funded? Will responsibility be shared or limited to geographic boundaries? Amendment to IA?
- Financial Status – Current, Proposed and Projected
 - Refer to Exhibit C1 & 2

LAKE PICKETT LAKE MANAGEMENT PLAN

GENERAL PROVISIONS

Scope of Joint County Aquatic Weed/Plant Control [AWC] Services

The scope of aquatic weed control [AWC] services funded by non-ad-valorem assessment (Seminole County) and/or ad valorem (Orange County) 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. Management of hydrilla is the primary objective for the Joint County AWC services provided at Lake Pickett; cattail management is secondary. Owners of lake front property are encouraged to independently secure any/all permits required to develop access corridors and to maintain private shorelines in compliance with State and County guidelines.

Governing documents

- Seminole County Ordinance 96-3
- Orange County MSTU Resolution
- Interlocal Agreement [IA] March 2013
- FWC Permit

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

- Chemical (herbicides)
- Biological (sterile triploid grass carp fish) - Introduced in 2015 at a stocking rate of two (2) fish per acre.
- Mechanical (harvesting, cutting, etc.)

Methods for Aquatic Weed Control as authorized via Interlocal Agreement

- Chemical
- Biological (Note restrictions/requirements specified in 2013 IA)

Aquatic Vegetation [Reason (Type)] - Status

- Hydrilla [Invasive(Exotic)] - Targeted
- Cattail [Nuisance/Noxious (Native)] - Targeted
- Asian marshweed (*Limnophila sessiliflora*) [Invasive(Exotic)] - Monitored

Frequency of AWC Treatment

AWC services are performed as per the Lake Pickett Lake Management Plan developed at annual planning sessions; and on an as merited basis as consistent with the plan scope and mutually confirmed by respective counties.

Herbicide Treatments - Service Provider

Orange County staff; supplemented by *Aquatic Weed Control, Inc.* as needed.

Funding

Each respective County is responsible per the provisions noted in the IA and per the other respective governing documents for providing the funding necessary to support the Lake Pickett: Lake Management Plan as confirmed at the annual planning sessions.

COMMUNITY-BASED ACTIVITIES & EVENTS

Community-based events, such as resident-based volunteer events involving native plantings along the shoreline of Lake Pickett continue to be recommended and encouraged. The intention of such activity is to plant beneficial native aquatic plants to key areas in need along the shoreline to develop a beneficial shoreline. 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 Pickett community. Continued recommendations for community initiatives are as follows:

- 1) 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. Seminole County and Orange County staff would be glad to present our findings from our surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato, and canna) and reduce exotic species such as torpedo grass.
- 2) Increase educational outreach programs, including Shoreline Restoration Projects (planting days), Florida Yards and Neighborhoods (FYN) Workshops, and Lake Management Video mail-outs. Most importantly, share the word about reducing personal pollution to your lake by decreasing total fertilizer usage and using **only phosphorous free and slow-release nitrogen based** fertilizers, properly maintaining/cleaning septic tanks, maintaining a healthy shoreline with beneficial native aquatic plants, constructing a berm and swale feature along your shoreline, and keeping grass clippings out of your lake and out of storm drains that lead to the lake. All of these activities help to protect and preserve your waterbody! Orange County is developing the Back Yard BMP program to, possibly, incentivize BMP (Best Management Practice) installation in individual backyards. BMPs may include a berm and swale, rain garden or native plantings. There is also a New Lakefront Homeowner guide meant to introduce new lakefront homeowners to certain facts about maintaining a healthy lakefront and protecting the water quality of the lake they are on. Both are currently in development and pending County approval.
- 3) The Hydrologic/Nutrient evaluation of the lake by ERD will be complete this year. A community-type meeting is to be held that will, hopefully, draw a lot of attention from residents in the area.

COUNTY SERVICES - TREATMENT

Treatment Plan & General Expectations

- **Hydrilla** growth in Lake Pickett has significant 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 will be sufficient to manage hydrilla re-growth during the current fiscal year. The anticipation of spot treatments (using FWC permitted herbicides) for the current fiscal year takes into consideration the historic trend of hydrilla management required at Lake Pickett, the extensive spot treatments conducted during August and September 2012, with additional spot treatments during fiscal year FY13/14, as well as current conditions observed at lake. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for whole lake treatment is advised. An integrated lake management plan has been established where county biologists will continue to monitor and develop chemical and biological methods for hydrilla management.
- **Cattails** - Treatment of the native, but potentially nuisance/noxious cattails (*Typha*) are managed in the uninhabited areas to prevent shoreline monoculture which decreases biodiversity, promote beneficial native vegetation, and control excessive growth that impedes navigation and creates muck.
- **Asian marshweed**, a species listed on the Federal noxious weed list has been observed in several locations and will be monitored for presence, expansion and treatment needs. Management of Asian marshweed is anticipated to be generally in conjunction with Hydrilla management. Additional treatment measures may need to be taken to address this species.

JOINT COUNTY SERVICES - FUNDING

As Budgeted for current Fiscal Year [FY17/18]:

- Chemical Management of hydrilla/cattails/Asian marshweed:

Orange County	\$ 60,000
Seminole County	<u>\$ 60,000</u>
Combined	<u>\$ 120,000</u>
- Assumption 1: Spot treatments will be sufficient to control hydrilla in current fiscal year supplemented by sterile grass carp.
- Assumption 2: Hydrilla conditions will be monitored closely and any changes necessary relative to the anticipated spot treatment plans will be quickly communicated and appropriately addressed.
- Assumption 3: Integrated treatment is inclusive of biological method [TGC (sterile fish)].
- Assumption 4: On-going cattail management cost should continue to decrease as areas are reduced in size.
- Assumption 5: Funding impact for treatment of Asian marshweed is anticipated to be minimal as it is primarily in cohabitation with hydrilla. Any expansion or similar development will be appropriately addressed and communicated.

Proposed for next Fiscal Year [FY18/19]:

The projected treatment plans for the next fiscal year remain consistent with the plans noted for the current fiscal year as effect of TGC stocking is monitored. Each county shall budget a minimum respective cost share of \$40K-60K. Each County is further responsible for long-term budget planning that will provide the financial means to respond appropriately in any given to a planned or unplanned need for the equivalent of a whole lake treatment [\$160K per County].

Anticipated results from the Hydrologic-Nutrient evaluation will include recommendations for maintaining water quality in light of on-going residential development on the lake as well as legacy issues that may bear attention.

Refer to Exhibit C1 and C2

for

County specific budget and financial status.

Exhibits

- A Most Recent Lake Bioassessment Summary
- B Historic Reports/Data
- C1 Budget/Financial Summary – Orange County
- C2 Budget/Financial Summary – Seminole County
- D Agenda/Notes from Prior Year Planning Session
- E Document Amendments

Exhibit A - Lake Bioassessment Summary

January, June and October 2017: Orange County conducted a series of surveys on Lake Pickett. Notations are as follows:

- Lake Pickett has a diverse community of native beneficial aquatic vegetation throughout the lake.
- The surveys have found that while hydrilla was present in a number of locations throughout the lake, it was not present in cost-effective treatment amounts. The foraging by grass carp is believed to be having a positive effect on the control/management of hydrilla.
- Asian marshweed has been found and spot-treated in several locations.
- The dominant submerged aquatic vegetation continues to be bog moss.

Exhibit B - Historic Reports/Data

Lake Pickett

Lake Pickett is 762 surface acres in size, with a mean depth of 12 feet, maximum depth of 35 feet, and is located within the Big Econlockhatchee watershed. Approximately 8% of the lake is located within Seminole County; 92% in Orange County. In 1996, at the request of property owners, the Seminole County Lake Pickett Aquatic Weed Control [AWC] Municipal Service Benefit Unit [MSBU] was established via Ordinance 96-3 to provide funding for aquatic weed control - primarily for managing hydrilla (an exotic/invasive aquatic plant). A similar ordinance was established in Orange County. Since that time, Seminole and Orange Counties have coordinated the ongoing management of hydrilla in the lake. The revised Interlocal Agreement [IA] established in 2013 provides a 50/50 cost sharing arrangement for hydrilla management services, and defines the working relationship and the responsibilities of each respective county on behalf of Lake Pickett. To be most effective, lake management requires community cooperation and participation. The IA established in 2013 includes provisions for an annual planning session to include participation of staff and community liaisons from both Seminole and Orange County. Lake management plans are reviewed and updated on an ongoing basis. At least once a year, a meeting is held during which time the plans are reviewed, discussed and updated with participation of Seminole County, Orange County and community liaisons from each respective county.

Bog moss, a beneficial native submersed aquatic plant that is often misidentified as hydrilla, is present in dense mats along the perimeter of the lake. Due to being a beneficial native plant, bog moss is not a part of the treatment plan as it plays a significant role in providing a healthy ecosystem for Lake Pickett. Comparison photos of bog moss and hydrilla is provided below.

Bog moss (photo on left) has an appearance very similar to hydrilla (photo on right).



<http://www.myfwc.com/license/aquatic-plants>. Some access corridors have been successfully treated by individual homeowners since their permit was issued. Additional information specific to managing bog moss and assistance with applying for a permit is available via your local FWC regional biologist, Kristine Campbell, at Kristine.Campbell@myfwc.com or 407- 858-6170. **Note:** The management of bog moss is not financed through the MSBU/TU assessment. Adding bog moss management to the current MSBU/TU would yield a significant increase in the annual MSBU assessment. Property owners interested in adding bog moss 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.

Use of biological control methods via stocking the lake with sterile triploid grass carp [TGC] fish was initiated in 2015 in response to recommendations by both Orange and Seminole Counties to advance hydrilla management strategies – and with communitywide support for integrating biological methods with the chemical methods. 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 Pickett community.

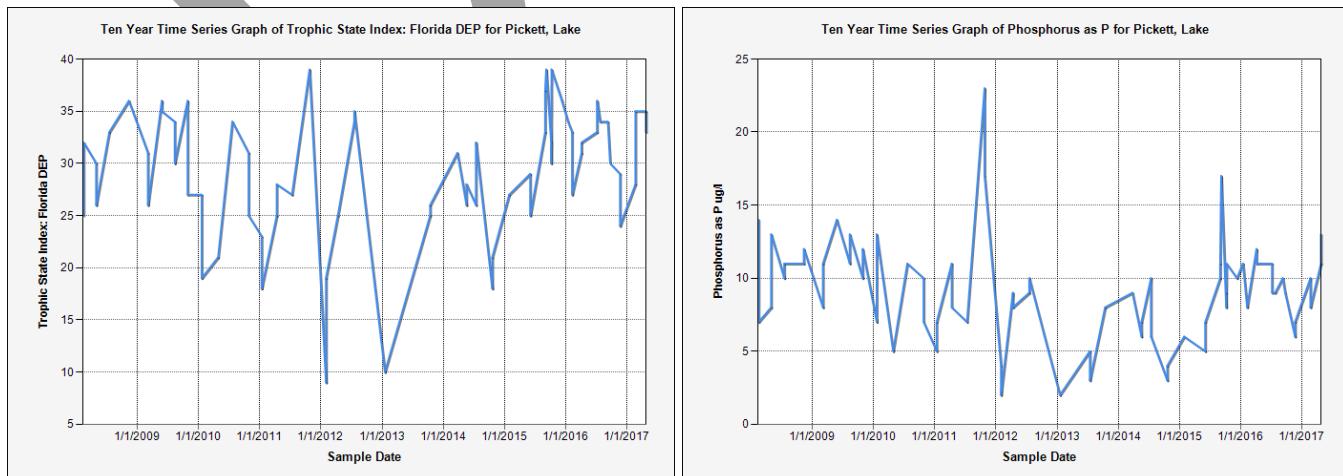
Additional information for Lake Pickett can be found on each county's Wateratlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7636>
<http://www.orange.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7636>

Lake Pickett Water Quality Report: How Does My Lake Rank? TSI SCORE: 33 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? 68 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 Lake Pickett (sampled on September 6, 2017) scored a **68** which is in the **Healthy** category; prior score was **67**.

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 C1- Budgetary/Financial Summary – Orange County

The approximate MSTU account balance as of 1/15/2018 is \$ 200,332, of which \$ 60,000 is presently budgeted for chemicals and pesticides. The Orange County MSTU is beginning to generate more funding due to the additions of subdivisions to the properties assessed. The amount to be budgeted for cost shared AWC services in FY17/18 will be per the consolidated Lake Management Plan confirmed at the March 2, 2018 planning session.

Exhibit C2 - Budgetary/Financial Summary – Seminole County

The amount designated for cost shared AWC services in the current fiscal year is \$60,000. Assuming current FY cost share expenses are \$60,000 per county [\$120,000 total]; the Seminole County Lake Pickett AWC MSBU contingency fund to be carried forward would be approximately \$232,000. The SC MSBU Budget also includes routine barrier cleaning and maintenance services in association with TGC fish permit requirements. The assessment for 2018 is proposed to remain constant at \$90.00 per assessed property.

Exhibit D – Agenda/Notes from Prior Year Planning Session

Date, Time & Location	: February 14, 2017 10:45 a.m.
Orange County Advisory Board	: Debra Parrish
Seminole County Community Liaison	: Jay Zembower
Orange County	: David Hansen and Melissa Levigne
Seminole County	: Joey Cordell, Gloria Eby, Thomas Calhoun, & Joe Saucer

Topics carried forward from prior fiscal year activity

- Lakewatch sampling
 - Pending identification of citizen volunteer(s)
 - Suggestion of UCF Students or Rowing team to assist with Lakewatch
 - Orange County offered that they have a Lakewatch Trainer, Tina, who can assist
- Nutrient Study
 - Status update – Data collection has been completed. Initial information shows that seepage is very low in the lake.
 - Estimated presentation of the Nutrient Study for Fall 2017

General Topics & Updates

- Plans for current fiscal year
 - Refer to Page 4 & 5
 - Monitor hydrilla and treat as necessary (early detection-rapid response)
 - Evaluate grass carp fish effects and adjust stocking rate as necessary
 - Continue to educate on the benefits of bog moss
 - Monitor limnophila and treat as necessary
 - OC and SC lake survey schedule
- Projections for next fiscal year
 - Refer to Pages 4 & 5
- Budget – Prior, Current & Proposed
 - Refer to Exhibit C1 - Orange County
 - Refer to Exhibit C2 - Seminole County
 - Jay Zembower [Seminole County liaison] recommended revisiting the cost share percentages defined in the Interlocal Agreement due to property development in Orange County that yields increased residential access to the lake; Debra Parish [Orange County liaison] communicated opposition. Future discussion anticipated.
 - Melissa Levigne indicated that recommendations from the Nutrient Study will likely place further financial demand on the Orange County MSTU; such as the construction and maintenance of baffle boxes.
- General recommendations for community consideration
 - Refer to Page 4; increase native aquatic vegetation in areas devoid of vegetation

Exhibit E – Document Amendments (from prior year to this report)

- **Annual Updates (2015, 2016, 2017, 2018)** – Lake recommendations, bioassessment information, cost estimates and County specific funding was updated throughout document as applicable to reflect current year status.
- **Agenda 2017** – Addition
- **Exhibit A 2017** – Updated with 2016 treatment information
- **Exhibit B 2017** – Updated for current fiscal year status
- **Exhibit C1 2017** – Updated with OC MSTU information
- **Exhibit C2 2017** – Updated with SC information
- **Exhibit D 2017** – Added notes and agenda from prior year planning session
- **[For Seminole County Only] Seminole County Addendum 2017** - Updated annual liaison meeting agenda and notes, budget information, and notes from prior year's planning session.

Exhibit SC-1 – Current Year Liaison Meeting - ANNUAL MEETING – SEMINOLE COUNTY

Date, Time & Location	: February 21, 2018 – 3:00 p.m., 200 W. County Home Rd – LMP office
Community Liaison	: Jay Zembower
Seminole County	: Edward Bass, Thomas Calhoun, Joey Cordell, Gloria Eby, Kim Ornberg, Kathy Moore and Joe Saucer

General Topics & Updates [Meeting Notes]

Lake Management Program

- Welcome
- Fertilizer Ordinance- Passed on February 27, 2017. www.seminolecountyfl.gov/fertilizer.
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 - TGC Fish Barrier
 - Email Address for routine communications and important announcements
 - Nutrient Study- Draft report and community meetings
 - IA revisions (carried from prior meeting notes)

MSBU Program

- Budgets – Prior, Current, Proposed and Projected
 - Refer to Exhibit B; Assessment Update; pending revised cost projections
 - Anticipating Administrative Fee increase FY19-20; tax year 2019
 - Provided cost share scenarios as requested based on IA % changes
- Tentative date for next annual meeting: February 1, 2019 9:00AM