

Greetings Lakes Martha and Burkett!

Please find the latest bioassessment report for your lake below. Our next scheduled survey will be May 14th weather permitting. Key highlights of this update will include:

- Annual Seminole County MSBU Meeting with liaisons conducted in January 2014 with link to Annual Report
- Decrease in hydrilla tuber/turion observations
- Recent emergent shoreline treatments conducted (in Seminole County)
- Submersed Aquatic Vegetation (SAV) mapping conducted in Lake Burkett
- Recommendations for you and your lake

**Annual Planning Session with Liaisons:**

The annual Lake Management meeting (which is conducted for each MSBU waterbody in Seminole County) with the Seminole County liaisons was held on January 9th, 2014. The agenda for this meeting included review of: (1) prior year lake management and fiscal activity (FY12-13), (2) current conditions and lake management plan for balance of current fiscal year (FY13-14), and (3) projected plans for the next fiscal year (FY14-15), along with a review of the roles and responsibilities of Seminole County and the liaisons. Summary of the Seminole County-Lake Burkett Aquatic Weed Control MSBU can be found on the MSBU Program website at: <http://www.seminolecountyfl.gov/fs/pdf/2014%20Burkett%20Report.pdf>

**Bioassessment:**

On **March 5<sup>th</sup>, 2014**, Seminole County Lake Management Program (SCLMP) staff (Thomas Calhoun and Gloria Eby) surveyed the aquatic plants in **Lakes Martha and Burkett**.

Upon this survey, hydrilla along the perimeter of both lakes has decreased from the December inspection. Hydrilla tubers and turions previously found in December's inspection were observed in less density with only a few plants found to a depth of 7 feet in Martha and 3 feet in Burkett.

**Photo: Hydrilla sprigs found in Lake Martha south (less density than prior inspection).**



Native SAV found within both lakes included: baby's tears to 2 feet, lemon bacopa to 2 feet, road grass to 4 feet, southern naiad to 3 feet, stonewort to 4 feet, and eelgrass to 6 feet.

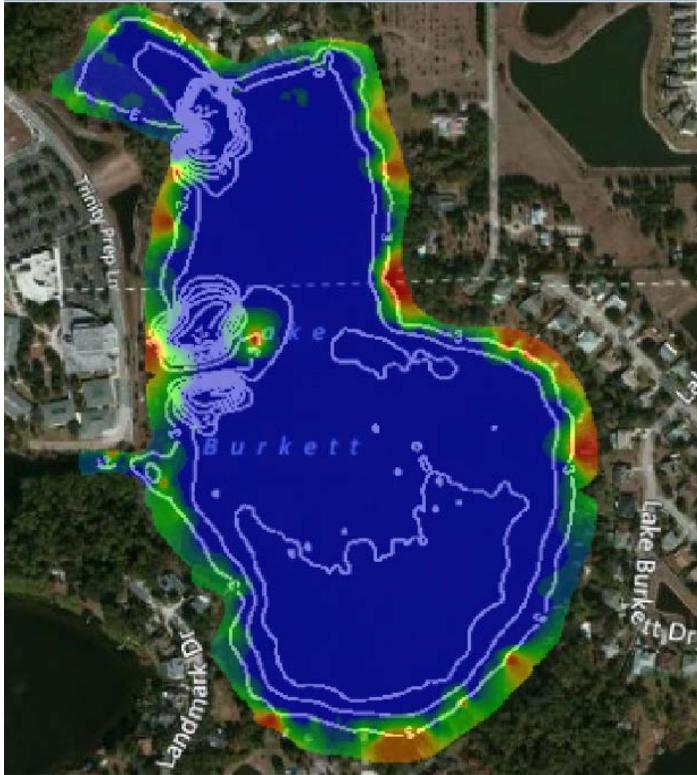
Exotic emergent vegetation found during the inspection included: alligator weed, torpedo grass, dwarf papyrus, and wild taro. Under the aquatic weed control services for Seminole County MSBU, the shoreline of Lake Burkett was treated for invasives which is permitted by FWC. These species included cattail, torpedo grass, and salvinia.

**Photo: Treated torpedo grass in Lake Burkett permitted by FWC in Seminole County.**



For Lake Burkett, a baseline submersed aquatic vegetation (SAV) map was created utilizing sonar instrumentation mounted to our boat. The purpose of this tool is to establish "baseline" data to monitor changes and respond with recommendations to improve water quality and vegetation habitat over time. Upon completion, a report is generated giving biologists a detailed analysis of vegetation presence in your lake. This survey generated a SAV percent coverage of 25% (or 19.25 surface acres).

**Photo: Image of SAV map produced for Lake Burkett.**



The secchi reading (measurement for water clarity) was 4.7 feet in a depth of 10.0 feet compared to 5.2 feet during the December 2013 survey. No grass carp fish were observed during the inspection. Again, this information can be found online at either County's Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7521&wbodyatlas=lake>  
<http://www.orange.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7521>

### **Lake Recommendations:**

1 Work together or establish a lake association with other lakefront owners to control and if possible, eliminate invasive plants observed during this survey and increase native aquatic plantings along shoreline (such as pickerelweed and duck potato). Have at least one annual lake association meeting, invite guest speakers (such as county or state biologists) and discuss lake specific issues.

2 Take advantage of free educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and presentations on decreasing "pointless personal pollution" by reducing fertilizer use and only using phosphorous-free fertilizers. You can also visit the Water Atlas (<http://www.seminole.wateratlas.usf.edu/>) to read interesting information about your specific waterbody, and our website ([http://www.seminolecountyfl.gov/pw/roadstorm/wq\\_lakemgt.aspx](http://www.seminolecountyfl.gov/pw/roadstorm/wq_lakemgt.aspx)) to watch educational videos and download lake management pamphlets. Please contact Seminole County Lake Management Program, at (407) 665-2439 or Orange County Lake Management Program at (407) 836-1409 for further assistance.

Greetings Lakes Martha and Burkett!

Please find the latest bioassessment report for your lake below. Our next scheduled survey will be March 11th weather permitting. Key highlights of this update will include:

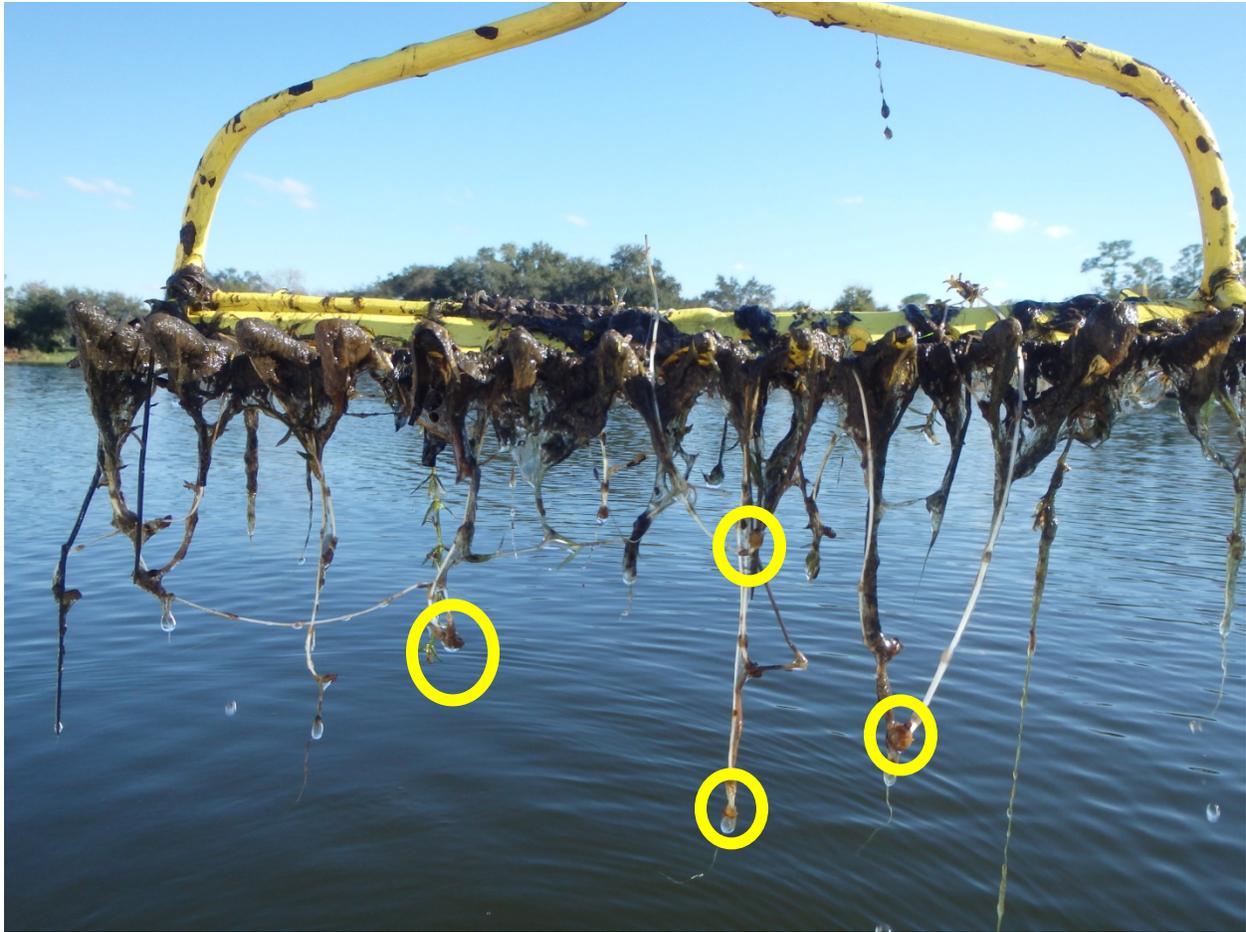
- Increase in hydrilla tuber/turion observations
- Recent shoreline hydrilla treatments conducted
- Increase in native Submersed Aquatic Vegetation (SAV) observations
- Recommendations for you and your lake

On **December 17<sup>th</sup>, 2013**, Seminole County Lake Management Program (SCLMP) staff (Thomas Calhoun, Joey Cordell, and Gloria Eby) surveyed the aquatic plants in **Lakes Martha and Burkett**.

For **Lakes Martha and Burkett**, Orange County Environmental Protection Division treated for hydrilla along the perimeter of unincorporated Orange County on December 2<sup>nd</sup>. Shallow hydrilla shoreline treatments in unincorporated Seminole County were suspended as the lower lake elevation naturally controlled the hydrilla (previous standing water is now dry/exposed land) however routine services targeting invasives (such as torpedo grass) remained consistent.

Upon this survey, hydrilla along the perimeter of both lakes has decreased from the November inspection. Hydrilla tubers and turions were found in deeper water in both Martha and Burkett to a depth of 10 feet. Lake Martha had the largest amount of tuber growth which was to a depth of 8 feet.

**Photos: Hydrilla found in Lake Martha that has regenerated from tuber/turion growth (indicated in yellow).**



Native SAV was found again expanding within both lakes. These species included: baby's tears to 2 feet, lemon bacopa to 2 feet, road grass to 4 feet, southern naiad to 6 feet, stonewort to 4 feet, and eelgrass to 4 feet. Eelgrass was found expanding in both lakes.

**Photo: Eelgrass found in Lake Burkett.**



Exotic emergent vegetation found during the inspection included: alligator weed, torpedo grass, dwarf papyrus and wild taro. Native species of emergent vegetation planted during the March restoration event are establishing well.

**Photo: Planted pickerelweed growing along the bank of Trinity Prep.**



The secchi reading (measurement for water clarity) was 5.2 feet in a depth of 9.0 feet compared to 4.3 feet during the November 2013 survey. One grass carp fish was seen during the inspection. Again, this information can be found online at either County's Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7521&wbodyatlas=lake>  
<http://www.orange.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7521>

### **Lake Recommendations:**

1 Work together or establish a lake association with other lakefront owners to control and if possible, eliminate invasive plants observed during this survey and increase native aquatic plantings along shoreline (such as pickerelweed and duck potato). Have at least one annual lake association meeting, invite guest speakers (such as county or state biologists) and discuss lake specific issues.

2 Take advantage of free educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and presentations on decreasing "pointless personal pollution" by reducing fertilizer use and only using phosphorous-free fertilizers. You can also visit the Water Atlas (<http://www.seminole.wateratlas.usf.edu/>) to read interesting information about your specific waterbody, and our website ([http://www.seminolecountyfl.gov/pw/roadstorm/wq\\_lakemgt.aspx](http://www.seminolecountyfl.gov/pw/roadstorm/wq_lakemgt.aspx)) to watch educational videos and download lake management pamphlets. Please contact Seminole

County Lake Management Program, at (407) 665-2439 or Orange County Lake Management Program at (407) 836-1409 for further assistance.

Greetings Lakes Burkett and Martha!

Please find the latest bioassessment report for your lake below. Our next scheduled survey will be December 12<sup>th</sup>, weather permitting. Key highlights of this update will include:

- Increase in hydrilla tuber/turion observations
- Lake Vegetation Index (LVI) Results For Lake Burkett
- Increase in native Submersed Aquatic Vegetation (SAV) observations
- Restoration Event results- plants expanding!
- Recommendations for you and your lake

On **August 7<sup>th</sup>, 2013**, Seminole County Lake Management Program (SCLMP) staff, Thomas Calhoun and Gloria Eby, surveyed the aquatic plants in **Lakes Martha and Burkett**.

For **Lakes Martha and Burkett**, hydrilla tubers and turions were found on both Martha and Burkett to a depth of 9 feet. Small sprigs were also found expanding inshore on both lakes. This is an increase since the previous inspection. We will continue monitoring to see if any spot treatments will be necessary.

Tubers and turions are deposited by the plant into the sediment and are used to perennialize the plant as a means of propagation (re-growth). Tubers and turions can remain viable for up to four years. Since the lakes were previously infested with hydrilla, an abundant amount of tubers (which can sprout new growth at any time) were deposited in the lake bed; one square meter of hydrilla can produce 5,000 tubers. We will continue to monitor the inshore areas of the lake to enable rapid response to new hydrilla growth as result of these tubers/turions.

**Photos: Hydrilla tuber found in Lake Martha.**



Native SAV was found expanding within both lakes. These species included: baby's tears to 2 feet, lemon bacopa to 3 feet, road grass to 2 feet, southern naiad to 6 feet, stonewort to 9 feet, eelgrass to 3 feet and pondweed to 1 foot. SAVs and emergent shoreline plants play vital role in providing habitat and filtering water thus improving the health and quality of your lake. These plants aid in absorbing nutrients from the local watershed keeping the lakes clean and healthy.

**Photo: Baby's tears are found around many docks in Lake Burkett and can be easily confused with hydrilla.**



The secchi reading (measurement for water clarity) in August 2013 was 4.0 feet in a depth of 11.0 feet. Again, this information can be found online at either County's Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7521&wbodyatlas=lake>  
<http://www.orange.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7521>

### 8/13/2013

On **August 13<sup>th</sup>, 2013**, Seminole County Lake Management Program (SCLMP) staff, Gloria Eby, Thomas Calhoun and Marianne Pluchino also joined by Florida Department of Environmental Protection staff Dave Scharr, Mary Lawrence and Terry Riordan surveyed the aquatic plants in **Lake Burkett** and conducted a Lake Vegetation Index (LVI).

The LVI was created by the Florida Department of Environmental Protection as a rapid screening tool (bioassessment) for ecological condition; it determines how closely a lake's flora (aquatic plants) resembles that of an undisturbed lake.

Lake Burkett is 75 surface acres with a mean depth of 8.6 ft and a maximum depth of 29.7 ft located in the Little Wekiva watershed. Scores for Spring Lake have ranged from 38 to 56. LVI score for 2013 was 54 in the healthy range.

<b>LVI Range</b>	<b>Description</b>
78-100	Exceptional
38-77	Healthy
0-37	Impaired

### 10/29/2013

On **October 29<sup>th</sup>, 2013**, Seminole County Lake Management Program (SCLMP) staff, Thomas Calhoun and Gloria Eby, surveyed the aquatic plants in **Lakes Martha and Burkett**.

For **Lakes Martha and Burkett**, hydrilla tubers and turions were found on both Martha and Burkett to a depth of 4 feet. Although hydrilla was not found at the same depth as the previous inspection, hydrilla has expanded along some shoreline areas. As water elevation decreases throughout the winter we should see a decrease in hydrilla along the shoreline. Upon conferring with Orange County, several locations within the lakes will be treated within the coming weeks.

**Photos: Hydrilla found in Lake Martha.**



**Photo: Hydrilla mixed with eelgrass growing in shallow water.**



Native SAV was found again expanding within both lakes. These species included: baby's tears to 2 feet, lemon bacopa to 3 feet, road grass to 4 feet, southern naiad to 5 feet, stonewort to 9 feet and eelgrass to 7.5 feet. SAVs and emergent shoreline plants play vital role in providing habitat and filtering water thus improving the health and quality of your lake. These plants aid in absorbing nutrients from the local watershed keeping the lakes clean and healthy.

**Photo: Stonewort found in Lake Burkett.**



**Photos: Plants expanding well within restoration locations!**



The secchi reading (measurement for water clarity) 4.9 feet in a depth of 9.4 feet compared to 4.0 feet during the September 2013 survey. Again, this information can be found online at either County's Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7521&wbodyatlas=lake>  
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### **Lake Recommendations:**

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- 2 Increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of personal pollution by decreasing fertilizer usage; using only phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass

clippings out of your lake and storm drains leading to the lake. All these activities aid in protecting your waterbody! Please contact Seminole County Lake Management Program at (407) 665-2439 or Orange County Lake Management Program at (407) 836-1409 for assistance.