

Greetings Sweetwater Cove Lakes,

As a reminder, the County has been funding the aquatic weed control services for Sweetwater Cove Lakes for the past year and will continue to do so until the established *Sweetwater Cove Lake Aquatic Weed Control and Lake Management MSBU* takes effect which will be on October 1st, 2014; the start of the County's new fiscal year. On October 1st, 2014, the aquatic weed control services will then be funded by the established MSBU. As part of the MSBU, Sanlando Utilities will be funding 53% of the annual costs for the ongoing program (this will also be in effect on October 1st, 2014). Although the funding source will shift, the County's Lake Management Program will continue to oversee the technical aspects of managing Sweetwater Cove Lakes while an MSBU is in effect for the waterbody.

Bioassessment Report:

On **July 2nd**, **July 15th**, and **July 30th**, 2014, Lake Management Program (LMP) staff surveyed the aquatic plants in Sweetwater Cove Lakes.

Algae Monitoring and Algae Control Devices (Lower Lake):

A great deal of algae growth (Lyngbya species) within the Lower Lake continues to be observed. In May, it was decided to alter from the original study plan involving the sonic devices by commencing to treat the algae (with herbicides) at specific locations monthly. This chemical effort is in addition to the sonic devices that were installed and still actively running. Based upon June observations, the algae treatments in Lower Lake was increased to 14 day increments in efforts to further reduce the biomass in the vicinity of the sonic units. Additionally the method of application was adjusted to enhance the effects of the herbicide treatments.

We have just concluded the third consecutive "14 day" herbicide treatment in Lower Lake, and based upon these efforts, we have notice improvements; more areas showing a clear lake bottom. We will continue to monitor the lakes at 7 to 14 day increments from now to end September. It is anticipated that the true effects of algae control from the sonic devices will not be known until Spring 2015 (at best). The units have struggled with the growth rate of algae in the system; however so has the herbicide treatments set at the previous frequency of monthly. Algae is at its peak growing season.

Photo: Overview of Lower Lake taken on July 30th. Recent rains and herbicide treatments have reduced the algae biomass.



Photo: Clear lake bottom newly observed.



Photos: Difference in algae present in Lower Lake (June 19th on left and July 1st on right).



As the algae is being affected by the herbicide treatments and possible sonic devices, this algae “bubbles-up” from the bottom. Additionally, the algae is naturally dislodging from the bottom of the lake from wind/wave action generated during storm events causing it to float on the water’s surface. We continue to treat these large patches of floating algae to accelerate the breakdown and reduce negative impacts to the dissolved oxygen levels. Recent rains and increased flow has assisted in moving more of the floating algae out of the system.

Lyngbya is a very difficult aquatic species to manage because it has a protective cell wall (sheath) that is made up of calcium carbonate. This makes it difficult for most herbicides to penetrate the cell wall.

Again, we continue to evaluate the effects of both herbicides and sonic devices to manage this species. We have been in discussion with several Lyngbya experts and continue to evaluate the system from a physical and chemical aspect; we suspect certain areas of the Lower Lake are more prone to excessive Lyngbya growth than others.

Photo: Close up view under microscope of Lyngbya.



Photo: Lake Management collecting chemical data in an area where Lyngbya is excessively growing.



Photo: Groundwater seepage site located in Lower Lake. Lower photo shows water chemistry being evaluated at this location.



Photo: View is of the dead end on east side. These effects are due to actively controlling algae with chemicals and possible sonic devices. Photo on left was June 19th and photo on right is July 30th.



Middle and Upper Lakes:

The remaining lakes (middle and upper) are routinely receiving algae treatments along the margin of the lakes in conjunction with the emergent plant control treatments. The lilies present on the south side of Wekiva Springs Road are being monitored for when next treatment will occur. The lilies in the Upper Lake will be targeted for treatment upon next service date.

Photo: Treating algae along the lake margin.



Photo: Overview of Upper Lake showing lilies present.



Restoration Events:

We continue to see successes in the volunteer planting locations driven by community efforts. Some locations have been greatly impacted by deer grazing on the plants. Thanks to all those that have participated in these events to help improve your lake!

Photo: Recent plantings that are established and expanding well!



Grass Clippings- during our visits we continue to see a **large** amount of grass clippings in the lakes. These clippings generate fuel for algae to become prolific and directly pollute your waterways. Please direct the clippings away from the water. If you have hired services, please let them know.

Photo: Grass clipping along the shoreline fueling algae growth; observed to be occurring on a weekly basis.



Recommendations:

1 Continue to work together with other lakefront owners to increase native aquatic plantings along shoreline (such as pickerelweed, canna, and duck potato). Have at least one annual lake association meeting to discuss lake-specific issues inviting guest speakers such as county or state biologists. **REDUCE** the amount of grass clippings entering your lake on a weekly basis.

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, reducing personal pollution to your lake by decreasing fertilizer usage and using **only phosphorous free** and **slow-release nitrogen** fertilizers; maintaining a healthy shoreline with beneficial native aquatic plants; 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! Contact LMP at (407) 665-2439 for information about free educational programs.

3 Help spread the word! Obtain email addresses from neighbors not currently on the distribution list in order to share this information with others. Valuable information is contained within these reports.

Greetings Sweetwater Cove Lakes,

On **June 11th** and **June 19th, 2014**, Lake Management Program (LMP) staff (Thomas Calhoun and Gloria Eby) surveyed the aquatic plants in Sweetwater Cove Lakes.

Algae Monitoring and Algae Control Devices (Lower Lake):

A great deal of algae growth within the Lower Lake continues to be observed. In May, it was decided to alter from the original study plan involving the sonic devices by commencing to treat the algae (with herbicides) at specific locations monthly. This chemical effort is in addition to the sonic devices that were installed and still actively running. Based upon June observations, the algae treatments in Lower Lake will be increased to 14 day increments in efforts to further reduce the biomass in the vicinity of the sonic units. We will continue to monitor the lakes at 7 to 14 day increments from now to end July. It is anticipated that the true effects of algae control from the sonic devices will not be known until Spring 2015 (at best). The units have struggled with the growth rate of algae in the system.

Photo: Overview of Lower Lake taken on June 11th. Recent rains and herbicide treatments have temporarily reduced the algae biomass.



Photos: Eight day difference in algae growth in Lower Lake (June 11th on left, June 19th on right).



As the algae is being affected by the herbicide treatments and possible sonic devices, this algae “bubbles-up” from the bottom. Additionally, the algae is naturally dislodging from the bottom of the lake from wind/wave action generated during storm events causing it to float on the water’s surface. We have treated several large patches of floating algae to accelerate the breakdown and reduce negative impacts to the dissolved oxygen levels. Utilizing the mechanical harvester has been evaluated as an option to further lessen the biomass present. Given the high cost and minimal control time post harvesting, it was determined to postpone this option until late summer (if needed) and continue with the chemical approach.

Photo: Examples of more algae that has “bubbled” up from the bottom of Lower Lake. View is of the dead end on east side. These effects are due to actively controlling algae with chemicals and possible sonic devices.



Middle and Upper Lakes:

The remaining lakes (middle and upper) are routinely receiving algae treatments in conjunction with the emergent plant control treatments. The lilies present on the south side of Wekiva Springs Road were effectively reduced. The lilies in the Upper Lake were treated this week to thin them out.

Photo: Treated algae building up on weir that exits the Middle Lake.



Photo: Overview of Middle Lake.



Restoration Events:

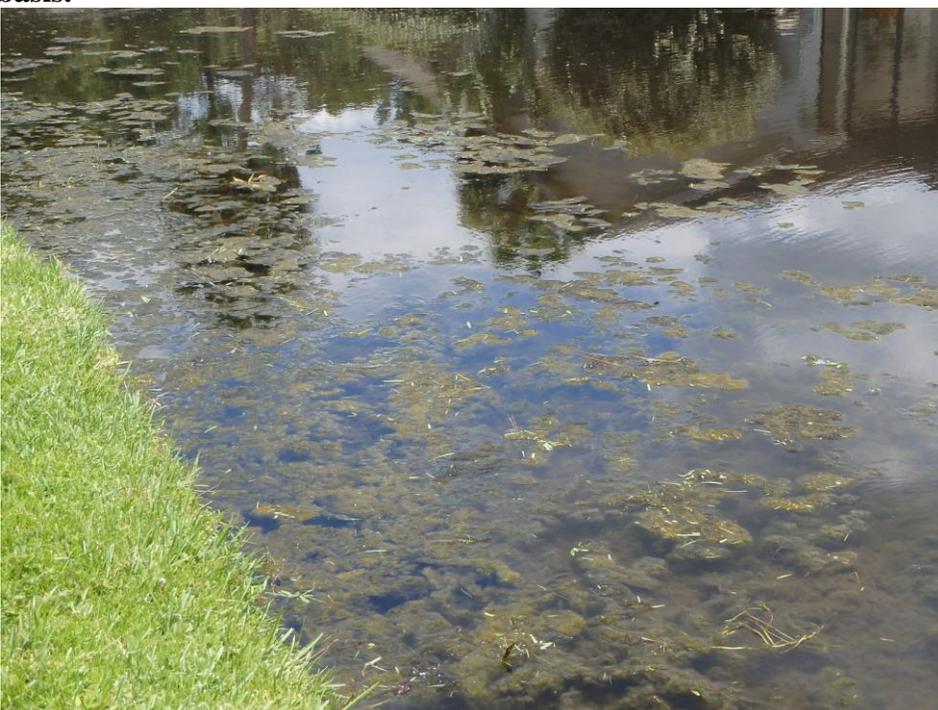
We continue to see successes in the volunteer planting locations driven by community efforts. Some locations have been greatly impacted by deer grazing on the plants. Thanks to all those that have participated in these events to help improve your lake!

Photo: Recent plantings that are established and expanding well!



Grass Clippings- during our visits we continue to see a **large** amount of grass clippings in the lakes. These clippings generate fuel for algae to become prolific and directly pollute your waterways. Please direct the clippings away from the water. If you have hired services, please let them know.

Photo: Grass clipping along the shoreline fueling algae growth; observed to be occurring on a weekly basis.



Recommendations:

1 Continue to work together with other lakefront owners to increase native aquatic plantings along shoreline (such as pickerelweed, canna, and duck potato). Have at least one annual lake association meeting to discuss lake-specific issues inviting guest speakers such as county or state biologists. **REDUCE** the amount of grass clippings entering your lake on a weekly basis.

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, reducing personal pollution to your lake by decreasing fertilizer usage and using **only phosphorous free** fertilizers when it is used; maintaining a healthy shoreline with beneficial native aquatic plants; 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! Contact LMP at (407) 665-2439 for information about free educational programs.

3 Help spread the word! Obtain email addresses from neighbors not currently on the distribution list in order to share this information with others. Valuable information is contained within these reports.

Greetings Sweetwater Cove Lakes,

On **May 22nd** and **May 29th, 2014**, Lake Management Program (LMP) staff (Thomas Calhoun and Gloria Eby) surveyed the aquatic plants in Sweetwater Cove Lakes.

Algae Monitoring and Algae Control Devices (Lower Lake):

A great deal of algae growth within the Lower Lake was observed. At the time of inspection, the MSBU funded herbicide contractor was present. Based upon the observations, it was decided to alter from the original study plan involving the sonic devices by treating the algae (with herbicides) at specific locations. This chemical effort is in addition to the sonic devices that were installed and still actively running. We have been advised by the sonic device vendor that around the 90 day mark, visual improvements (algae reduction) should be noted. At the time of inspection, the sonic units have been in place for 37 days.

Photo: Treated algae that has risen to the surface in Lower Lake.



Photo: Overview of Lower Lake looking east.



Photo: Sonic unit surrounded by dying algae (gray in color).



We will continue to closely monitoring the Lower Lake (weekly) given the amount of biomass that is present. Our main concern with the algae is the potential for a dissolved oxygen fish kill. As the algae is being affected by the sonic units, this algae “bubbles-up” from the bottom. Additionally, the algae is naturally dislodging from the bottom of the lake from wind/wave action generated during storm events causing it to float on the water’s surface. We have treated several large patches of floating algae to accelerate the breakdown and reduce negative impacts to the dissolved oxygen levels. The mechanical harvester is being evaluated to further lessen the biomass present. An update will be provided once the most recent chemical applications have taken full effect which is upwards of 3 weeks.

Photo: Example of algae that has “bubbled” up from the bottom of Lower Lake.



Middle and Upper Lakes:

The remaining lakes (middle and upper) are routinely receiving algae treatments in conjunction with the emergent plant control treatments. The lilies present on the south side of Wekiva Springs Road were effectively reduced. The lilies in the Upper Lake are scheduled to be thinned-out upon next scheduled treatment.

Photo: Mid-point of Middle Lake.



The wading bird rookery (nesting place) located in Middle Lake is in full swing and is quite a sight to see! Care is taken by the MSBU funded herbicide contractor when passing by in this area by airboat.

Photo: Wading bird rookery located in Middle Lake.



Restoration Events:

We continue to see successes in the volunteer planting locations driven by community efforts. Some locations have been greatly impacted by deer grazing on the plants. Thanks to all those that have participated in these events to help improve your lake!

Photo: Recent plantings that are established and expanding well!



Grass Clippings- during our visits we continue to see a **large** amount of grass clippings in the lakes. These clippings generate fuel for algae to become prolific and pollute your waterways. Please direct the clippings away from the water. If you have hired services, please let them know.

Recommendations:

- 1 Continue to work together with other lakefront owners to increase native aquatic plantings along shoreline (such as pickerelweed, canna, and duck potato). Have at least one annual lake association meeting to discuss lake-specific issues inviting guest speakers such as county or state biologists.

- 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, reducing personal pollution to your lake by decreasing fertilizer usage and using **only phosphorous free** fertilizers when it is used; maintaining a healthy shoreline with beneficial native aquatic plants; 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! Contact LMP at (407) 665-2439 for information about free educational programs.

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April 18, 2014

Greetings Sweetwater Cove Lake Residents!

Due to wind/rain this week, routine herbicide services were postponed. Services are rescheduled for Monday and Tuesday of next week. All areas will be serviced which will include the area south of the Wekiva Spring Road bridge (we will be targeting the lilies).

Algae Control Devices- We have installed 3 SonicSolution algae control devices this week in lower lake (thanks again to Wilkie, Marra, and Gwinn for supplying power to these units!). Given the amount of algae already present subsurface, we anticipate these units to have a delayed effect on algae control within lower lake. This is due to the amount (biomass) of algae surrounding the units. Once the algae around the unit has dissipated, the sonic field should continue to cover a greater area in a progressive manner. We will closely monitor this system and update you with these results!

Algae Monitoring- We completed this week our initial SonicSolution monitoring by using a methodology developed by the Florida Department of Environmental Protection (FDEP) called Rapid Periphyton Survey (RPS). The sampling area is divided by segments and samples are taken along each segment of which we record the thickness of the algae in centimeters (photo of measurement attached). A map of the sampling area is also attached. For the lower lake only, algaecide treatments will not take place as this will disrupt our pilot study that is designed to test the effectiveness of these units. Should the units not perform based upon our monitoring (using the RPS method), we will intervene with chemical use. Your patience though this pilot phase is appreciated as we seek a chemical free, cost savings alternative for you and your lakes!

Shoreline Restoration Event- We have a Shoreline Restoration Event scheduled next week, on April 26th (9am to 12pm) and have a full list of **20** waterfront homes participating!! Sanlando Utilities has also committed to having several of their staff participate in this event by volunteering on April 26th to help lake residents and biologists plant native aquatic plants to further enhance shoreline restoration efforts and ecosystem protection. Thank you to all the homeowners who have volunteered thus far! If you are interested in becoming a site for a future event, please let me know to reserve you on the list.

Grass Clippings- during our visits we continue to see a **large** amount of grass clippings in the lakes. These clippings generate fuel for algae to become prolific and pollutes your waterways. Please direct the clippings away from the water. If you have hired services, please let them know (photo of grass clippings attached).



March 13, 2014

Greetings Sweetwater Cove Lakes MSBU,

Yesterday, the Seminole County Board of County Commissioners unanimously approved the establishment of the *Sweetwater Cove Lake Aquatic Weed Control and Lake Management MSBU* as requested by the owners of waterfront property with a support level of 75.4%. As part of the MSBU, Sanlando Utilities is funding 53% of the annual costs for the ongoing program. We appreciate all of the hard work and effort put forth by your liaisons (Dennis Marra, Clark Gwinn, Tom Stahl) and the numerous lakefront homeowners who have supported the efforts to restore and preserve your tributary lake system. Assistance from your County Commissioner, Lee Constantine and the Florida Department of Environmental Protection staff (Jeff Prather, Chris Ferraro, and Dennise Judy) were integral to the success that we have achieved.

So What's Next?

As part of the planned follow-up with the waterfront community, the MSBU Program is mailing a notice confirming creation of the MSBU. The communication will include an invitation to submit email addresses to receive ongoing updates relative to lake activities and conditions. Property owners will be encouraged to contact the community liaisons when they have questions or concerns about lake issues. The MSBU Program will also serve as the point-of-contact for liaison inquiries and general feedback regarding the County activities associated with the Sweetwater Cove lake system. MSBU Project Manager contact information:

Carol Watral

cwatral@seminolecountyfl.gov

407-665-7164

The routine monthly maintenance will continue with funding provided by the County until the end of the fiscal year, which is September 30th, 2014. Beginning October 1st, 2014, your MSBU assessments will be used to fund ongoing services through the County's current vendor Applied Aquatic Management, Inc. The change in funding source will be seamless, with no interruption in scheduled herbicide treatments. The ongoing herbicide treatments include the 3 lakes (referenced as Upper, Middle, and Lower Lakes) in the Sweetwater Cove lake system, as well as the segment south of the bridge on Wekiva Springs Road to the 1st weir. Herbicide treatments are generally conducted during the 3rd week of each month (weather permitting). Next week will be your treatment week (the week of March 17th).

As treatments are conducted, the Lake Management Program (LMP) will continue to inspect the Sweetwater Cove lake system for treatment effectiveness and will coordinate with the herbicide service provider on specific treatment directives. With the newly established MSBU, the LMP will routinely email inspection reports (bioassessment reports) based upon our observations. These reports provide useful community information, educational opportunities, and lake recommendations.

We have a Shoreline Restoration Event scheduled very soon, on April 26th (9am to 12pm) and currently have a list of 18 waterfront homes participating. It's not too late to grab one of the **last 2 spots remaining**. Sanlando Utilities has also committed to having several of their staff participate in this event by volunteering on April 26th to help lake residents and biologists plant native aquatic plants to further enhance shoreline restoration efforts and ecosystem protection.

Algae Control News

We are looking into new technology (Sonic Solutions) for an alternative treatment of some of the algae that is most abundant and problematic within your lake system.

This alternative technology may reduce chemical herbicide dependency and use (which has the potential for unintended impacts to native flora and fauna) within Sweetwater Cove Lakes, which will hopefully reduce herbicide maintenance costs over time. We have been in contact with several Lower Lake homeowners who have volunteered to provide electricity to these units (3 in total). We should have these units installed by the end of this month. **Please note that this technology is for algae control only.** Routine herbicide treatments will be conducted as usual (treating floating exotics and emergent plants). Algae treatments within the Middle and Lower lakes will continue to be conducted on the normal schedule.

The demonstration phase (Phase I) of this pilot project is being implemented to test a portion of the lake system for 3-6 months to ensure that these devices can adequately control algae growth at a reasonable (initial) investment and without secondary impacts. If successful, these devices could be installed throughout the Sweetwater Cove system (Middle and Upper lakes), as well as to the other ponds that generate excessive algae growth. Should these devices perform as anticipated, we will be looking for volunteers in the Middle and Upper Lakes as well, to allow the units to be placed adjacent to their property and allow an electrical connection. Electrical costs for these units are extremely low and will be reimbursed to the individual owner by the MSBU Program. The investment in the initial three devices for the pilot study has been made by the County and will not be charged to the homeowners by the assessments collected through the AWC MSBU.

More information will be distributed as we initiate this pilot project.

Hope to see you at the Shoreline Restoration Event on April 26th!