

**Lake Amory MSBU
Report for Fiscal Year 2011-2012
October 1, 2011 through September 30, 2012
Lake Meeting Held: July 19, 2012**

County Staff: Thomas Calhoun, Kathy Moore and Carol Watral

Community Liaisons: Steve Barnes (via conference call), Philip Lee, and Tim Lockhart

Purpose: To review status of waterbody management and to discuss with the liaison group the recommendations and plans for the next fiscal year.

Routine updates of inspections/results are provided to the community liaison members via email. To be included in these updates, please notify Gloria Eby, Lake Management Program (LMP) Manager, at geby@seminolecountyfl.gov.

Annual Meeting Synopsis:

The meeting was conducted according to the agenda distributed and discussion points covered a variety of topics, including the impact of lake fluctuations/seasons on plant growth, contracted services scope, performance and cost, treatment education and alternatives, golf course management practices (nutrient reductions), watershed nutrient study, planting the shore/shoreline with desirable native plants, and liaison communication.

1. For FY11/12, per liaison request, negotiations with the herbicide contractor included withholding maintenance services for the months of October, January, February, and September. The cost reduction in maintenance services was pursued to provide funding for additional treatments. Additionally, service was suspended for May due to very low water levels. Increased access was available to contractor as of July 17, 2012.
2. Discussion was had among the liaisons as to the opportunity available to the community to privately remove muck when water levels are very low.
3. Liaisons expressed their vision for the lake is to keep current access open, while continuing to open more areas without negatively impacting native vegetation
4. For addressing FY12/13, given budget constraints and lake priorities, routine services will continue to be limited to the eight months of treatment. Service will be withheld in October 2012, December 2012, January 2013, and September 2013. However, should the routine monitoring by Seminole County provide strong evidence of the requirement of adding another treatment, such treatment will be considered for addition to the schedule. Funds otherwise designated for routine service will be held in reserve for funding submersive vegetation, such as hydrilla/coontail (maximum 3 acres).
5. The non-ad valorem assessment for FY12/13 remains at \$300.00. The budget supported by the assessment funding provides for minimal maintenance for navigation and access. Funding does not support extensive services as may be preferred by residents/liaisons. Previously funded/stocked grass carp fish are still seen in the lake, with one liaison reporting seeing a carp in the cove area.
6. Property owners are encouraged to communicate comments/concerns through the liaison group, who will provide consolidated request/comments to the MSBU Project Manager (Carol Watral).
7. LMP continues to recommend the liaisons/owners select additional locations on the lake to serve as shoreline demonstration sites, specifically recommending native plantings along the bare strip in the cove. The goal of these sites is for the lake community to have reference locations serving as a demonstration of the benefits of a planted shoreline. By expanding a zone of beneficial, native aquatic

plants along key areas of the lake, the establishment of exotic/invasive species will be inhibited, and this change in plant community may reduce herbicide demands providing a cost savings to address other lake management needs, such as additional grass carp fish and/or submersed aquatic plant treatments. Liaisons expressed concern for the responsibility of performing ongoing maintenance of such shoreline plantings. Suggested timeline for any future planting events is after the 2012 holiday season. One suggested location is along the golf course to assist in nutrient filtering. LMP will be researching various plant options for this area.

8. Submersed aquatic vegetation (such as hydrilla) is not fully funded by assessment. In lieu of increasing annual assessment, supplemental (owner directly-funded) treatment for submersed aquatic vegetation is recommended as a means for addressing this category of vegetation. LMP is available to provide technical guidance related to these activities.
9. The next lake meeting with the liaisons, LMP, and MSBU will be in the January-February 2013 timeframe.

County Funding:

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. Lake Amory 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 all treatments and waterbody assessments. In addition, LMP offers free aquatic plant material (as available) for sponsored restoration events and local community volunteers coordinated through the county's Seminole Education and Restoration Volunteer (SERV) Program. 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.

2011 - 2012 Lake Management Activities:

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 is advised. If the invasive plants are removed by this method, spraying the area can be eliminated, 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.*

In 2011-2012, existing grass carp fish reduced hydrilla in some areas of the lake. As of July 1, 2012, only random sprigs of hydrilla are evident.

Typically, as well as ideally, an integrated approach using biological and chemical methods is used to manage hydrilla. The available MSBU funding is only sufficient for providing one to two submersed treatments up to approximately 3 surface acres each (dependent on depth). Although additional funding is recommended to properly manage this highly invasive aquatic plant, Lake Management and MSBU continue to work diligently to devise the most effective treatment plans to maximize the use of the available funding.

The *Lake Proper* area of Lake Amory continues to be maintained with expansion of natives observed. Lilies are maintained at the desired level of the liaison representing this area, as well as in the access corridor when lake conditions are favorable for treatment. Only small amounts of wild taro and torpedo grass were found in this area; however, the Seminole County MSBU funded herbicide contractor could not access the lake proper area in April. These species will be targeted once the area is accessible again.

In the *Cactus Canal*, *Outfall Canal*, and *Bird Island* areas, cattails were targeted for treatment in July 2012.

In *The Cove*, barnyard grass, previously expanding in this area due to the drought, was targeted by the MSBU funded herbicide contractor during the June, July, and August 2012 inspections.

Inspections continue on a routine basis for the triploid grass carp barrier. Grass carp fish have been observed with each inspection throughout the lake.

Lake Management Recommendations

Lake Management Program recommendations for the upcoming fiscal year [FY12/13] are as follows:

- 1) **Shoreline re-vegetation with native emergent plants (by the lakefront community and potentially volunteers),**
- 2) **Continued aquatic herbicide maintenance for non-native vegetation along with one hydrilla and coontail treatment annually (as needed),**
- 3) **Continue with the decreased monthly maintenance (from twelve to eight months) in order to afford one submersed treatment (up to 3 surface acres) annually,**
- 4) **Future grass carp stockings if deemed necessary, pending permit amendment,**
- 5) **Continued monitoring of hydrilla, coontail, other submersed aquatic plants, and grass carp fish,**
- 6) **Establishing a formal Lake Association holding at least one annual meeting with topics relevant to Lake Amory,**
- 7) **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. Contact Seminole County Lake Management Program, 665-2439, for more information and assistance,**
- 8) **Increase contingency reserve funds for extended herbicide management of hydrilla and/or other issues that may develop and require immediate treatment,**
- 9) **Liaisons to consider independently funding (in lieu of increasing annual assessment) supplemental treatment for submersed aquatic vegetation (such as hydrilla) as such vegetation treatments are not fully funded by assessment. LMP is available to provide technical guidance related to these activities,**
- 10) **Provide content for the Seminole County Water Atlas Lake Management Webpage for Lake Amory (such as newsletters and photos.).**

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings along the shoreline of Lake Amory. The intention of such an event is to plant beneficial native aquatic plants to key areas in need along the bank. Residents should organize planting days creating a beneficial shoreline. 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 Lake Amory community.

Cost of Aquatic Weed Control

The expenditures associated with the recommended treatments by lake management as required to adequately manage the growth of aquatic weeds, even with the annual herbicide contract decreased to eight months, will exceed the MSBU assessment cap of \$300 per parcel. Limited funding remains a budgeting and aquatic weed control concern. Resultantly, this generates a budget of \$5,725.00 for FY11/12 (net administrative fees and per early payment discount). These budget concerns have been conveyed to the liaisons and residents annually.

The need to either increase the available funds to meet the residents' desires and lake management recommendations OR to scale back services to include only the most basic herbicide treatment level was highlighted. The MSBU Program continues to recommend the distribution of a petition to pursue an increase to the per parcel cap of \$300.00 to adequately fund the lake needs of Lake Amory. Liaison members present at the meeting did not support the recommendation from the MSBU Program and expressed opposition to increasing the assessment level. The primary spokesperson of the group conveyed continued expectations for services to be provided within the current assessment parameters.

Funding FY October 2011 – September 2012

1)	\$ 6,670	Assessment Revenue (per early pay discount) + Interest
2)	<u>\$ 2,696</u>	Reserve and Contingency (beginning fund balance)
	<u>\$ 9,366</u>	Total Revenue

Expenditures were as follows:

1)	\$ 3,600	Contracted Services (8 months of treatments)
2)	\$ 0	Grass Carp
3)	\$ 0	Coontail/Hydrilla treatment
4)	\$ 900	County Administrative Fee
5)	<u>\$ 4,866</u>	*Contingency Reserve (carried forward to next FY)
	<u>\$ 9,366</u>	Total Expenditures

Budgeted FY October 2012 – September 2013

Budgeted Revenue:

1)	\$ 6,625	Assessment Revenue [per early payment discount]
2)	<u>\$ 4,866</u>	Reserve and Contingency (beginning fund balance)
	<u>\$11,491</u>	Total Revenue

Budgeted Expenditures:

1)	\$ 3,600	Contracted Services (8 months of treatments)
2)	\$ 300	Grass Carp
3)	\$ 1,750	Submersed Aquatic Vegetation Treatments
4)	\$ 330	Additional Labor for application
5)	\$ 950	County Administrative Fee
6)	<u>\$ 4,561</u>	*Contingency Reserve (to be carried forward to next FY)
	<u>\$11,491</u>	Total Expenditures

*Developing and maintaining a contingency reserve of \$4,500 for addressing future requirements for hydrilla control, native plant material, and potential needs in the future is highly recommended.

Note: Any financial activity from prior years is available upon request.

MSBU Background

The lake renovation and aquatic weed control treatment plans for Lake Amory were identified through a detailed lake analysis conducted by contracted services in 2006 following the approval of the Board of County Commissioners to establish an MSBU for aquatic weed control, and direction from the Board to fund the lake renovation via County general funds.

At the request of the community of Lake Amory, the Lake Amory Aquatic Weed Control MSBU was created by Ordinance 06-27 on May 09, 2006 to provide assessment funding for lake management and aquatic weed control for Lake Amory. The improvements to be accomplished at Lake Amory were identified as Phase I and Phase II. Phase I was funded by County general funds; Phase II is funded through non-ad valorem assessment.

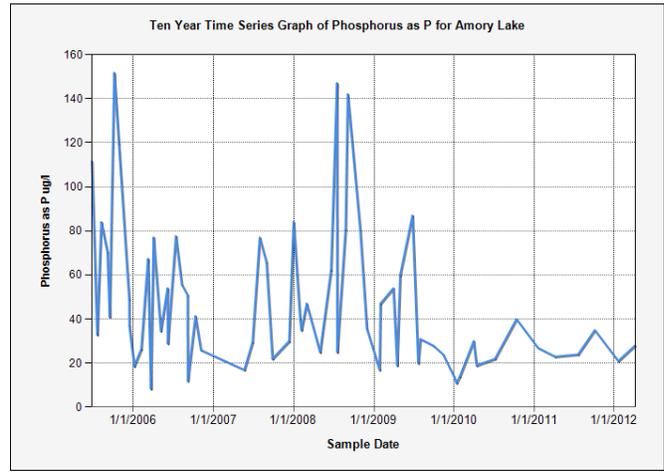
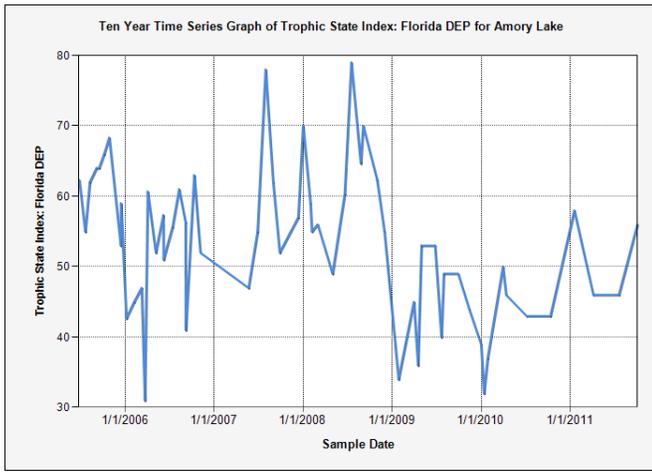
Phase I: The initial phase of the Lake Amory Project began in October 2006, and was funded by the Board of County Commissioners. Mechanical removal of the lake's invasive/nuisance aquatic plants was acknowledged as the most cost-effective method for addressing the vegetative mass and nutrient level for this TMDL-associated water body. The Phase I activities were completed in March 2007. The County-funded Phase I activities, as listed below, included the removal of vegetation and associated organic matter, debris removal/hauling, re-seeding/sodding, and landfill tipping fees. In addition to the noted expenditures funded by the County, Lake Amory is extensively monitored, at no cost to the lakefront homeowners, by County biologists (Lake Management Program [LMP]) on a monthly basis to assess the hydrilla population, provide oversight of the aquatic herbicide contract for the treatment of nuisance vegetation, formulate native planting schematic/recommendations, and ongoing evaluations of grass carp mortality and stocking rates.

Phase II: This second phase of the lake improvement project was identified to include shoreline re-vegetation with native plants, stocking with triploid grass carp, and monthly herbicide treatments. The funding for Phase II was provided via non-ad valorem assessments collected through the Lake Amory MSBU. Assessment collection was initiated in 2006.

Lake Amory 2011 Water Quality Report: How Does My Lake Rank? **56 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 2 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. For Lake Amory, there was a significant loading of TP attributed to the Tropical Storm Faye event that correlates to the increase in TP. Reduction of TP sources (residential pollution, run-off, landscaping practices, shoreline erosion) can help reduce phosphorous in your lake that is abundantly available, potentially creating algae blooms. Please note water quality data prior to 2006 was one data point in 2000, thus creating erroneous data for 2000-2006.



You can find this information and much more at:
<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7503&wbodyatlas=lake>

Lake Amory Inspections FY 2011-2012

Summary of the September 18, 2012 inspection/report: On September 18th, 2012, (SC-Lake Management Program) Thomas Calhoun surveyed the aquatic plants in Lake Amory. As a cost savings to the MSBU contracted herbicide services will be skipped for the month of October. Services will return again in November.

Lake Amory is slowly returning to normal water elevations although the lake is still low. Water sprite is returning to many areas of the lake and was heavily targeted during the last treatment. The access corridors will continue to be treated and are impacted from last month's treatment. Small amounts of hydrilla were found around the lake and will continue to be closely monitored to see if any action (chemically or biologically) will be required.

In Cactus Canal and Outfall Canal, water sprite, salvinia, cattail, primrose, dog fennel, and wild taro were found and treated. Dog fennel was successfully treated as result of last month's treatment. Two sprigs of hydrilla were seen in this area. We will closely monitor this area to see if any action will be needed. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass or soft rush are other plants that will greatly assist in reducing sediments from eroding into the lake in this area.

In the Bird Island area, both native and exotic vegetation has expanded greatly. On the island water sprite, and torpedo grass were treated during inspection. The previous treatments for dog fennel and primrose willow were successful in this area. The area between Bird Island and Lake Proper were again treated for access. This area will continue to be treated, so long as the elevation provides adequate access, until it is once again open.

In The Cove, water sprite was targeted as well as salvinia, alligator weed and dog fennel. Stonewort and coontail were seen within the cove. Hydrilla was not present. This area will be monitored closely to see if any action will need to be taken for the submersed vegetation.

The Lake Proper area was found to be in great shape. The access corridors are once again open. Small amounts of wild taro and torpedo grass were treated as well. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerel weed, canna, and duck potato are more suitable for this area due to gradual sloping of the shoreline. Some hydrilla sprigs were seen along the north east shore of the lake proper. We will continue to closely monitor this area to see if any action will be needed. Also the native wetland plant species Carolina redroot was found in The Lake Proper.

Summary of the August 21, 2012 inspection/report: On August 21st, 2012, (SC-Lake Management Program) Thomas Calhoun surveyed the aquatic plants in Lake Amory. Lake Amory is still experiencing low water elevations although the lake is slightly higher than last month's inspection. With the slightly higher water elevation, the MSBU funded herbicide contractor will be able to treat more areas along the shoreline. The access corridors will continue to be treated and are impacted from last month's treatment. Small amounts of hydrilla were found around the lake and will continue to be closely monitored to see if any action (chemically or biologically) will be required.

In Cactus Canal and Outfall Canal, water sprite, salvinia, cattail, primrose, dog fennel, and wild taro were found and treated. Dog fennel was successfully treated as result of last month's treatment. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has

demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass or soft rush are other plants that will greatly assist in reducing sediments from eroding into the lake in this area. With lower water elevations, now is a great time to plant!

In The Cove, water sprite, primrose, salvinia, alligator weed, dog fennel, and torpedo grass were all treated. All native plantings along the planted parcel within the cove are doing extremely well. These plants could use hand removal of invasives since the herbicide applicator will not treat around these plants. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations.

The Lake Proper area was found to be in great shape. The access corridors were treated by the Seminole County herbicide contractor during this inspection. Small amounts of wild taro and torpedo grass were treated as well. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerel weed, canna, and duck potato are more suitable for this area due to gradual sloping of the shoreline.

The MSBU funded herbicide maintenance treatments are not designed as substitution for being proactive with your lake. Natives will grow and contain non-natives (and vice-versa) that becomes difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. One must become stewards of the lake, assist and facilitate the removal of non-natives in close proximity of the natives and replant the area with beneficial natives for greater success. The success of your lake lies within the hands of the community's efforts.

Summary of the July 17, 2012 inspection/report: On July 17th, 2012, SC-Lake Management Program, Thomas Calhoun, surveyed the aquatic plants in Lake Amory. Lake Amory is experiencing low water elevations. While these low conditions have impacted access on the lake, exotic and native plant species have expanded into many areas of the lake. The access corridor to Lake Proper area was blocked by plants making the access unusable. This is a good time to hand remove any previously sprayed torpedo grass. Removing this now while accessible will aid in the expansion of natives.

In the Cactus Canal and Outfall Canal, small amounts of hydrilla were found within the cactus and outfall canal. Water sprite, salvinia, cattail, primrose, dog fennel and wild taro were found and were treated within the cactus and outfall canal. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass or soft rush are other plants that will greatly assist in reducing sediments from eroding into the lake.

In the Bird Island area, vegetation both native and exotic has expanded greatly. On the island itself, primrose and dog fennel were targeted. Around the island headed towards the lake proper, natives and exotics have blocked passage in this area. This area was treated to open access back up between lake proper and the adjoining canals.

In The Cove, water sprite, primrose, salvinia, alligator weed, barnyard grass, and torpedo grass were all treated by the MSBU funded aquatic herbicide contractor. All native plantings along the planted parcel within the cove are doing extremely well. These plants could use hand removal of invasives since the herbicide applicator will not treat around these plants. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations.

Lake Proper area was found to be in great shape with no duckweed bloom present along shoreline as in the canals/cove. The access corridors were treated by the MSBU funded herbicide contractor although not

passable due to low water. Only small amounts of wild taro and torpedo grass were treated. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerel weed, canna, and duck potato are more suitable for this area due to gradual sloping of the shoreline.

The MSBU funded herbicide maintenance treatments are not designed as substitution for being proactive with your lake. Natives will grow and contain non-natives (and vice-versa) that becomes difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. One must become stewards of the lake, assist and facilitate the removal of non-natives in close proximity of the natives and replant the area with beneficial natives for greater success.

Summary of the June 19, 2012 inspection/report: On June 19, 2012, Gloria Eby (SC-Lake Management Program staff) surveyed the aquatic plants in Lake Amory. Due to water levels, Lake Amory was inspected by foot in the Lake Proper area and by boat in the remaining lake. Hydrilla was observed in inches of water mainly in Cactus and Outfall Canals. Increasing water levels should allow the remaining grass carp fish to forage on the establishing hydrilla. We will closely monitor hydrilla growth as water fluctuations can stimulate the tubers (the potato like seeds of hydrilla) to grow. These can lay dormant within the lake sediments and remain viable for up to 4 years.

In Cactus Canal, Outfall Canal, and Bird Island, observations of hydrilla were found in the each of these areas. The main plants of concern were duckweed (small floating green plant), hydrilla, and the newly establishing barnyard grass and dog fennel present on the exposed lake bed. These floating and emergent plants were treated during this inspection. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass or soft rush are other plants that will greatly assist in reducing sediments from eroding into the lake in this area.

In The Cove, small amounts of hydrilla were found along the water's edge. The native plant road grass, along with some wetland and terrestrial grasses, were found expanding in areas along the previously exposed lake bed. The grasses, such as barnyard grass, were treated during this inspection. All native plantings along the planted parcel within the cove are doing extremely well and serve as model shoreline for the lake. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. KUDOS goes to local lake resident, Phillip Lee, who recently attended the Florida Yards and Neighborhood Aquascaping class who received free aquatic plants to benefit Lake Amory!

Lake Proper area was found in good shape with no duckweed bloom present along shoreline as in the canals/cove. Only small amounts of wild taro and torpedo grass were found in this area. These species were targeted during this inspection. Additionally, some of the lilies previously establishing were treated within the access corridor. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerelweed, canna, and duck potato are more suitable for this area due to the gradual sloping of the shoreline.

Secchi reading was not taken during inspection. The lake elevation during the inspection was 38.56 ft, up from last inspection's reading of 37.95 ft. As of June 27th, Lake Amory's elevation has risen to 39.23 ft.

Summary of the April 17, 2012 inspection/report: On April 17th, 2012, Thomas Calhoun, Devin Whitney, and Stan McCreary (SC-Lake Management Program staff) surveyed the aquatic plants in Lake Amory. Lake Amory is experiencing very low water levels. While these low conditions have impacted recreation and access on the lake, exotic plant species has not expanded. In fact, in some areas of the lake, natives are expanding to fill the new shoreline. Additionally, low water levels should impact hydrilla in a positive way by killing the plant found along the edges of the lake. Now would be a good time to target and remove any previously treated torpedo grass. Removing treated torpedo grass while accessible will aid in the expansion of natives. Due to water levels, Lake Amory was inspected by foot in the all areas except the Lake Proper area. Overall, Lake Amory was found to be in great condition in regards to invasive plants. Hydrilla was observed in inches of water mainly in Cactus and Outfall Canals. The access corridor to Lake Proper area was clear of plants; however, it was not passable due to the low water level.

In Cactus Canal, Outfall Canal, and Bird Island, observations of hydrilla were found in the Outfall and Cactus Canals only. The main plants of concern were duckweed (small floating green plant) and hydrilla. Water sprite, previously establishing, was no longer present. Cattails establishing were targeted during the April treatment. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass or soft rush are other plants that will greatly assist in reducing sediments from eroding into the lake in this area.

In The Cove, very small amounts of hydrilla were found along the water's edge. Water sprite, previously expanding in this area was not found during this inspection. The native plant road grass, along with some terrestrial grasses, were found expanding in areas along the lake bed which is typically underwater however now exposed dry land. The only exotic species found in this area was wild taro by the pool wall. All native plantings along the planted parcel within the cove are doing extremely well and serve as model shoreline for the lake. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations.

Lake Proper area was found in great shape with no duckweed bloom present along shoreline as in the canals/cove. The access corridors at time of inspection were clear of vegetation although not passable due to low water levels. Only small amounts of wild taro and torpedo grass were found in this area however the Seminole County MSBU funded herbicide contractor could not access the lake proper area at this time. These species will be targeted once the area is accessible again. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerelweed, canna, and duck potato are more suitable for this area due to the gradual sloping of the shoreline.

Secchi reading was not taken during inspection due to lack of access to deep water. The lake elevation during the inspection was 37.95 ft, down from last inspection's reading of 38.8 ft.

Summary of the March 20, 2012 inspection/report: On March 20th, 2012, Gloria Eby and Thomas Calhoun (SC-Lake Management Program) surveyed the aquatic plants in Lake Amory. Overall, Lake Amory was found to be in great condition with no herbicide treatments conducted for the past two months. Hydrilla was observed in inches of water mainly in Cactus and Outfall Canal. The access corridor to Lake Proper area was found to be partially blocked by lilies however the water level itself makes the access unusable. Access was partially treated during this survey as well as the floating duckweed found along portions of the shoreline within the canals and cove area. Currently with the lake so shallow, LMP staff in canoe and herbicide contractor in airboat both had difficulties navigating the lake.

We have received several inquiries as to what the "alien eggs" are in Lake Amory. These are freshwater bryozoans, or moss animals, that are made up of tiny aquatic invertebrates that forms a colony. Similar to

sponges, they filter water for food. For more information on bryozoans, please visit <http://www.bio.umass.edu/biology/conn.river/bryozoa.html>.

In Cactus Canal, Outfall Canal and Bird Island, observations of hydrilla were found in the Outfall and Cactus Canal only. A beneficial native submersed plant, baby tears, was noted establishing within these areas. The main plants of concern were duckweed (small floating green plant) and hydrilla. Water sprite, previously establishing, was no longer present. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass or soft rush are other plants that will greatly assist in reducing sediments from eroding into the lake in this area.

In The Cove only hydrilla was found along the shallow edges and entry of the cove. Water sprite, previously expanding in this area, was targeted by the Seminole County herbicide contractor prior to winter and was not found during this inspection. All native plantings along the planted parcel within the cove are doing extremely well and serve as model shoreline for the lake. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Exotic wild taro is expanding within this area (by pool enclosure) and should be hand pulled or chemically treated; chemical treatments will impact the adjacent natives.

Lake Proper area was found in great shape with no duckweed bloom present along shoreline as in the canals/cove. The access corridors at time of inspection had lilies filling in and were too low for canoe passage however was targeted by the Seminole County herbicide contractor from the south side. Canna is naturally expanding along several areas of Bird Island area. Torpedo grass & wild taro have established within the natives in isolated areas and will be monitored for impact next month. LMP will be working with individual homeowner(s) in the spring to restore these areas. Plans are for the homeowner to harvest the existing natives prior to herbicide treatment and then homeowner replanting these natives once the area has been effectively treated. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerel weed, canna, and duck potato are more suitable for this area due to gradual sloping of the shoreline.

The secchi reading (measurement for water clarity) at the time of inspection was 4.5 ft in 17.3 ft of water. The lake elevation during the inspection was 38.8 ft, down from last inspection's reading of 39.75 ft. Two triploid grass carp fish were seen during this inspection and the grass carp barrier was inspected and appeared to be in good condition.

Summary of the December 20, 2011 inspection/report: On December 20th, 2011, Gloria Eby and Thomas Calhoun (SC-Lake Management Program) surveyed the aquatic plants in Lake Amory.

Overall, Lake Amory was found to be in great condition. Hydrilla was observed in inches of water mainly in Outfall Canal. No herbicide treatments will be conducted for two months (January and February 2012) as cost saving efforts to supplement limited hydrilla/coontail treatments in the future. Access corridors were found to be partially blocked by lilies however were treated during this survey as well as the floating duckweed found along the shoreline within the canals and cove area.

In Cactus Canal, Outfall Canal and Bird Island, observations of hydrilla were found in the Outfall Canal only. A beneficial native submersed plant, baby tears, was noted establishing within these areas. The main plants of concern were water sprite and duckweed (small floating green plant). The torpedo grass and water sprite, previously establishing within Bird Island, has been effectively treated. Lilies filling in around the access path from Bird Island south to lake proper were also treated. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can

tolerate large lake level fluctuations. Cord grass is another plant that will greatly assist in reducing sediments from eroding into the lake in this area.

In The Cove no hydrilla/coontail were found along the shallow edges of the cove. Water sprite, previously expanding in this area, was targeted by the Seminole County herbicide contractor as well as the floating duckweed. Duck potato and native canna along the planted parcel are expanding and doing well. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. One cattail plant was hand removed by herbicide contractor found growing in the planted spike rush. Exotic wild taro is expanding within this area (by pool enclosure) and should be hand pulled or chemically treated; chemical treatment will impact the adjacent natives if treated.

The Lake Proper was found in great shape with no duckweed bloom present along shoreline as in the canals/cove. The access corridors at time of inspection had lilies filling in however was targeted by the Seminole County herbicide contractor. Adjacent to the access corridor, canna was mysteriously planted along the shoreline and is doing very well; kudos to our mystery planter! Torpedo grass & wild taro have established within the natives in isolated areas. LMP will be working with individual homeowner(s) in the spring to restore these areas. Plans are for the homeowner to harvest the existing natives prior to herbicide treatment and then homeowner replanting these natives once the area has been effectively treated. As with the canals and cove, residents along the shoreline are encouraged to plant shoreline natives. Pickerel weed, canna, and duck potato are more suitable for this area due to gradual sloping of the shoreline.

The secchi reading (measurement for water clarity) at the time of inspection was 5.1 ft in 17.1 ft of water. The lake elevation during the inspection was 39.75 ft, down from last month's reading of 40.35 ft. Seven triploid grass carp were seen during this inspection and the grass carp barrier was inspected and appeared to be in good condition.

Summary of the November 22, 2011 inspection/report: On November 22nd, 2011 Gloria Eby (Lake Management Program) and Kathy Moore (MSBU Program) surveyed the aquatic plants of Lake Amory. Overall, Lake Amory was found to be in good condition given no herbicide treatments were conducted for two consecutive months. The reduction in services is a cost savings effort for the MSBU budget to be able to fund future hydrilla/coontail treatments. Access corridors were found to be partially blocked by lilies however were effectively treated during this survey. The combination of the grass carp fish stockings and large scale hydrilla/coontail treatment with Aquathol has provided great results for Lake Amory. Aquathol treatments typically last 3-6 months; however, with the aid of the grass carp fish, we have been successful in keeping hydrilla managed for over a year.

In Cactus Canal, Outfall Canal and Bird Island no observations of coontail or hydrilla were found. The main plants of concern in this area were water sprite and torpedo grass which was treated on site during inspection by herbicide contractor. Lilies were observed filling in the access path from Bird Island to Lake Proper which was also treated. These species will be targeted by the Seminole County herbicide contractor again in December. An algae bloom was present within this area and is expected to diminish with the cooler weather. Shoreline areas within this portion of the lake are encouraged to plant with natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass is another plant that will greatly assist in reducing sediments and leaf debris from entering the lake in this area.

The Bird Island has become well established with natives. This area could be used as a donor site to collect free aquatic plants and replant along your shoreline. The east shoreline of Bird Island is also well established with natives providing a nice water quality buffer zone and is aesthetically pleasing.

In The Cove, hydrilla and southern naiad were found along the shallow edges of the cove in sparse amounts. Water sprite continues to expand in this area and was targeted by the Seminole County herbicide contractor as well as the duckweed present. Additionally, an algae bloom was present within this area and is expected to diminish with the cooler weather.

Our bottom grab samples contained a higher volume of decaying leaf debris. Duck potato and native canna along the planted parcels are expanding and doing well. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations.

The Lake Proper has SAV found in the lake that includes bacopa to a depth of 3 ft, road grass found to a depth of 1 ft, and hydrilla found along the shoreline. The access corridors at time of inspection had lilies filling in and were targeted by the Seminole County herbicide contractor. Residents along the shoreline are encouraged to plant shoreline natives. Pickerelweed, canna, and duck potato are more suitable for this area due to the gradual slope of the shoreline. No algae bloom was observed in this portion of the lake.

Buttonbush vs. Primrose Willow: Two common woody shrubs that are misidentified in Lake Amory are primrose willow and buttonbush. Buttonbush is a native wetland plant commonly found growing in swamps, cypress ponds, lakes, ponds, and river margins. Buttonbush is found throughout Lake Amory, mainly in Lake Proper area and is the main plant that provides habitat for the rookery (where birds nest and breed). For primrose willow, there are over 20 species growing in Florida in which some are non-native. The woody primrose found in Lake Amory is the non-native that grows in shallow and marshy areas.

Two triploid grass carp were seen during this inspection and the grass carp barrier was inspected and appeared to be in good condition.

Summary of the December 20, 2011 inspection/report: On October 11th, 2011 Seminole County Lake Management Program, Gloria Eby and Thomas Calhoun (Contracted Scientist) surveyed the aquatic plants of Lake Amory.

In Cactus Canal, Outfall Canal and Bird Island coontail was not found during inspection. Only a few strands of hydrilla were found localized to one area. The main plants of concern in this area are water sprite and torpedo grass. Lilies are also filling in around Bird Island. These species will be targeted by the Seminole County herbicide contractor in November when services resumes. Areas within this portion of the lake are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations. Cord grass is another plant that will greatly assist in reducing sediments from eroding into the lake in this area.

In The Cove, hydrilla and baby's tears were found along the shallow edges of the cove. Water paspalum, a native emergent plant, has been found in the cove. Water sprite continues to expand in this area and will be targeted by the Seminole County herbicide contractor in November. Duck potato and native canna along the planted parcels are expanding and doing well. Other areas are encouraged to plant shoreline natives, especially duck potato, as it has demonstrated lake wide that it can tolerate large lake level fluctuations.

The Lake Proper has SAV found in the lake that includes bacopa to a depth of 3 ft, road grass found to a depth of 1 ft, and hydrilla found along the shoreline. The access corridors at time of inspection had lilies filling in and will be targeted by the Seminole County herbicide contractor. Residents along the shoreline are encouraged to plant shoreline natives. Pickerel weed, canna, and duck potato are more suitable for this area due to the gradual sloping of the shoreline.

Buttonbush vs. Primrose Willow: Two common woody shrubs that are misidentified in Lake Amory are primrose willow and buttonbush. Buttonbush is a native wetland plant commonly found growing in swamps, cypress ponds, lakes, ponds, and river margins. Buttonbush is found throughout Lake Amory, mainly in Lake Proper area and is the main plant that provides habitat for the rookery (where birds nest and breed). For primrose willow, there are over 20 species growing in Florida in which some are non-native. The woody primrose found in Lake Amory is the non-native species that grows in shallow and marshy areas.

The secchi reading (measurement for water clarity) at the time of inspection was 3.1 ft in 18.7 ft of water. The lake elevation during the inspection was 40.35 ft, up from last month's reading of 39.85 ft. Two triploid grass carp were seen during this inspection and the grass carp barrier was inspected and appeared to be in good condition.