

Mirror Lake 8-21-2012

Below please find the latest assessment for your lake. The next inspection is scheduled for September 18th weather permitting. Key highlights of this update will include:

- Low water elevation and what you can do
- Native Submersed Aquatic Vegetation (SAV) status
- Hydrilla observations
- Recommendations for you and your waterbody

On **August 2nd, 2012** Seminole County Lake Management Program (SCLMP) personnel, Thomas Calhoun, surveyed the aquatic plants of **Mirror Lake**.

Although the water elevation is rising, it still remains extremely low in Mirror Lake. Many areas along the shoreline that have been exposed or previously dry are experiencing a lot of growth from invasives such as; barnyard grass, torpedo grass, primrose willow, and dog fennel. These areas will be treated by the MSBU funded herbicide contractor as the water elevation rises. It is recommended that these areas be mowed (if possible) especially under dry land conditions.

Photo: Treated areas along the southern shoreline.



Mirror Lake has a diverse and healthy amount of native submersed aquatic vegetation (SAV). This vegetation plays an important role in competing for space with hydrilla as well as providing habitat for wildlife and up taking nutrients within the system. This contributes to improving the overall health and water quality of the lake. The native SAV found during this inspection included; lemon bacopa to a depth of 1 ft, coontail to a depth of 5 ft, musk grass to a depth of 5 ft, southern naiad to a depth of 5 ft, stonewort to a depth of 2 ft, bladderwort to a depth of 5 ft, baby's tears to a depth of 1 ft, and eelgrass to a depth of 3 ft.

Photo: Eelgrass found during inspection.



Hydrilla was found along the shoreline in shallow water but found very sparse and intermixed within the native SAV. We will continue to monitor the amount of hydrilla growth within the lake to see if any further action will be necessary.

Photo: Low water conditions on Mirror Lake.



The water elevation at the time of inspection was 56.91 ft above sea level. Two grass carp fish were observed during this inspection.

Recommendations for waterbody:

- 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. SCLMP staff would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).
- 2 Consider increasing street sweeping services during times of peak leaf fall to ensure this debris does not wind up in your waterways. Leaf debris contains phosphorous that can impact your lakes.
- 3 Increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of pointless personal pollution by using low fertilizer use; phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass clippings out of your storm drains leading to the lake. All these activities aid in protecting your waterbody!

Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.

Mirror Lake 8-2-2012

Below please find the latest lake assessment for your lake. Key highlights of this update will include:

- Increased water elevation from prior inspection and plant community response
- Native Submersed Aquatic Vegetation (SAV) status- great diversity observed
- Hydrilla status- found very sparse along shoreline of lake
- Recommendations for you and your waterbody

On **July 17th, 2012**, Seminole County Lake Management Program (SCLMP) personnel, Thomas Calhoun, inspected **Mirror Lake** by foot due to low water conditions. This was a partial inspection and was rescheduled to access the lake via boat with hopes of higher water elevation towards the end of the month.

On **August 2nd, 2012**, SCLMP personnel, Thomas Calhoun and Stan McCreary, surveyed the aquatic plants of **Mirror Lake** by boat.

Although the water elevation is coming up, it still remains extremely low in Mirror Lake exposing several areas of the natural lake bottom. Many areas along the shoreline that are exposed are experiencing a lot of growth from invasives such as; barnyard grass, torpedo grass, primrose willow, and dog fennel. These areas will be treated by the Seminole County herbicide contractor as the water elevation rises. It is recommended that these areas be mowed if possible. Burhead sedge and water lilies will continue to be treated upon next service date.

Photo: Treated areas along the southern shoreline.



Mirror Lake has a large and healthy amount of native submersed aquatic vegetation (SAV). This vegetation plays an important role in competing for space with hydrilla as well as providing habitat for wildlife and up taking nutrients within the system. The native SAVs found during this inspection included; lemon bacopa to a depth of 1 ft, coontail to a depth of 5 ft, musk grass to a depth of 5 ft, southern naiad to a depth of 5 ft, stonewort to a depth of 2 ft, bladderwort to a depth of 5 ft, baby's tears to a depth of 1 ft, and eelgrass to a depth of 3 ft.

Photo: Bladderwort found during inspection.



Hydrilla was found along the shoreline in shallow water but found very sparse and intermixed with the native SAV. Many large grass carp fish were seen in shallow water, possibly feeding on the hydrilla. We will keep monitoring the amount of hydrilla within the lake to see if any further action will be necessary.

Photo: Hydrilla found along the inshore area.



The secchi (water clarity) was 5.5 ft out of 6.5 ft total depth. Five grass carp were observed during this inspection. Liaisons present at the annual MSBU meeting (held on July 25th, 2012) have reported no otter sightings on the lake in the last 6-8 months.

Recommendations for waterbody:

- 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. SCLMP staff would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).
- 2 Consider increasing street sweeping services during times of peak leaf fall to ensure this debris does not wind up in your waterways. Leaf debris contains phosphorous that can impact your lakes.
- 3 Increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of pointless personal pollution by using low fertilizer use; phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass clippings out of your storm drains leading to the lake. All these activities aid in protecting your waterbody! Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.

Greetings Mirror Lake!

Below please find the latest assessment for your lake. Key highlights of this update will include:

- Low water elevation and what you can do during this time
- Hydrilla and submersed aquatic vegetation (SAV) status
- Recommendations for you and your waterbody

On **June 7th, 2012**, Seminole County Lake Management Program (SCLMP) personnel, Gloria Eby and Thomas Calhoun, surveyed the aquatic plants of **Mirror Lake**. Due to low water conditions, Mirror Lake was inspected by shore.

Water elevations are extremely low in Mirror Lake exposing several areas of the lake bottom. Many areas along the shoreline that are now exposed are experiencing accelerated growth from invasive plants such as barnyard grass, torpedo grass, and dog fennel. These areas are unable to be treated by the County's MSBU funded herbicide contractor until the water elevation raises allowing airboat access to these plants. SCLMP recommends that these areas be mowed (if possible) during the drought phase. Once water is at adequate level for the airboat to access, any existing invasives will be treated.

Photo: Area recommended to be mowed along the south side of the lake containing invasives.



Hydrilla was found along the shoreline in two areas but found very sparse and intermixed with the native SAV. The only large monoculture of hydrilla found during the inspection was around the dock at Barrington Apartments but in a smaller amount than previous inspections. The low water elevation has helped eliminate the hydrilla inshore by exposing it in many places. We will keep monitoring the amount of hydrilla within the

lake to see if any further action will be necessary. The only other SAV found during the inspection included eelgrass, bladderwort, and lemon bacopa.

Photo: Hydrilla at the Barrington Apartment dock.



Photo: Low water conditions exposing lake bottom on Mirror Lake.



The secchi (water clarity) was not taken due to low water conditions and no grass carp were seen during the inspection.

Recommendations for waterbody:

- 1 Mow areas containing invasive plants during periods of extreme drought.
- 2 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. SCLMP staff would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).
- 3 Consider increasing street sweeping services during times of peak leaf fall to ensure this debris does not wind up in your waterways. Leaf debris contains phosphorous that can impact your lakes.
- 4 Increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of pointless personal pollution by using low fertilizer use; phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass clippings out of your storm drains leading to the lake. All these activities aid in protecting your waterbody! Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.

Mirror Lake 3-20-2012

Below please find the latest lake assessment for your lake. Key highlights of this update will include:

- Submersed aquatic vegetation (SAV) update
- Hydrilla update
- Emergent plants and herbicide treatments

On **March 20th, 2012**, Seminole County Lake Management Program (SCLMP) personnel Thomas Calhoun and Devin Whitney surveyed the aquatic plants of **Mirror Lake**.

Due to low water conditions, Mirror Lake was inspected by shore. Six species of submersed aquatic vegetation (SAV) were observed, 5 native and one exotic: lemon bacopa, southern naiad stonewort, bladderwort (*Utricularia foliosa*), and eelgrass. Overall, the native SAV was very healthy and is expanding around the lake.

Hydrilla was found along the shoreline in all areas that was inspected. The hydrilla was found in monocultures (single crop) as well as intermixed with the native SAVs. This is an expansion of hydrilla since the previous inspection. It is expected that when the water elevation raises the present grass carp population will be able to start consuming this plant. We will keep monitoring the amount of hydrilla within the lake to see if any further action will be necessary.

Photo: Monoculture of hydrilla under lily pads.



After break for the months of January and February, as cost savings efforts, the Seminole County MSBU funded herbicide contractor has resumed treating the exotic species in Mirror Lake this month. Torpedo grass has been treated to the point that it is no longer the dominant species within the lake. Lily pads will be targeted in the upcoming treatments. Native vegetation is returning from its winter state and is doing very well. Now would be a great time to target and

remove the dead torpedo grass around the lake due to low water level. This would encourage the expansion of the planted native vegetation.

Photo: Soft rush and cord grass at The Barrington Apartments.



The secchi (water clarity) was not taken due to low water conditions and inaccessible by boat.

Recommendations for your lake:

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. SCLMP staff would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).

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 pointless personal pollution by using low fertilizer use; phosphorous free fertilizers; keeping a functional shoreline with beneficial native aquatic plants; keeping grass clippings out of your storm drains leading to the lake. All these activities aid in protecting your waterbody! Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.

Mirror Lake 4-17-2012

Below please find the latest assessment for your lake. Key highlights of this update will include:

- Submersed aquatic vegetation (SAV) update
- Hydrilla update
- Emergent plants and herbicide treatments- lilies treated last week
- Continued encouragement of torpedo grass removal
- Recommendations for your waterbody

On **April 17th, 2012**, Seminole County Lake Management Program (SCLMP) personnel Thomas Calhoun, Stan McCreary, and Devin Whitney surveyed the aquatic plants of **Mirror Lake**.

Due to low water conditions, Mirror Lake was inspected by shore. Six species of submersed aquatic vegetation (SAV) were observed. SAV present included five natives (lemon bacopa, southern naiad, stonewort, bladderwort (*Utricularia foliosa*), and eelgrass) and one exotic species (hydrilla). Overall the native SAV presence was very healthy and is expanding around the lake which is beneficial to the overall health of the lake.

Hydrilla was found along the shoreline in all areas that was inspected but found very sparse and intermixed with the native SAV. The only large monoculture (single crop) of hydrilla found during the inspection was around the dock at Barrington Apartments. It is expected that when the water elevation increases, the present grass carp fish population will be able to start consuming this plant. We will keep monitoring the amount of hydrilla within the lake to see if any further action will be necessary (such as herbicide treatments).

Photo: Monoculture of hydrilla under lily pads.



The MSBU herbicide contractor has reconvened treating the exotic species in Mirror Lake. Lily pads were targeted in the last treatment on April 17th. Torpedo grass has been treated to the point that is no longer the dominant species within the lake. Native vegetation is returning from its winter state and is doing very well.

It is still a great time to target and remove the dead torpedo grass around the lake due to the low water level. This would encourage the expansion of the planted native vegetation.

Photo: Low water conditions on Mirror Lake.



The secchi (water clarity) was not taken due to low water conditions and no grass carp were observed during the inspection.

Recommendations for your waterbody:

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. SCLMP staff would be glad to present our findings from this and other surveys. Continue to increase native aquatic plantings along shoreline (such as pickerelweed, duck potato and canna).
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! Contact Seminole County Lake Management Program (407) 665-2439 for free educational programs available.
3. Control of aquatic and wetland plants could require a Florida Fish and Wildlife Conservation

Commission (FWC) aquatic plant control permit (such as eelgrass). Contact CJ Greene at (407) 858-6170 or Carl.Greene@myfwc.com for a permit and recommendations.

Have a great weekend!

Greetings Mirror Lake!

Below please find the latest assessment for your lake. Our next inspection is scheduled for March 20th, 2012 (weather permitting). Key highlights of this update will include:

- Submersed aquatic vegetation (SAV) update- good diversity observed
- Hydrilla update- present in the shallows to 6 ft depth
- Emergent plants and winter die back observations
- Recommendations for you and your lake

On **February 6th, 2012** Seminole County Lake Management Program (SCLMP) personnel Thomas Calhoun and Dean Barber surveyed the aquatic plants of **Mirror Lake**.

Nine different submersed aquatic vegetation (SAV) species were observed; 8 native and one exotic: lemon bacopa to a depth of 3 feet, musk grass to 3 feet, road grass to 3 feet, filamentous algae to 3 feet, southern naiad to 3 feet, stonewort to 4 feet, bladderwort (*Utricularia foliosa*) to 6 feet, and eelgrass to 2 feet. Overall, the native SAV present was very healthy and is expanding around the lake.

Photo: Stonewort (beneficial native) found in large mats along the north east side of the lake.



The invasive exotic hydrilla was found to a depth of 6 feet intermixed with the native vegetation. Hydrilla has not expanded much beyond and is found mostly adjacent to the shore (in shallow water) as a monoculture (single crop). When the water elevation rises, the present grass carp population is expected to be able to consume this plant given adequate depth. We will keep monitoring this monoculture and evaluating the need for future intervention with herbicides and/or grass carp fish.

Photo: Hydrilla found during inspection.



Lake wide, the Seminole County herbicide contractor has continued to treat invasive plants and the lily pads in isolated areas that are creating a nuisance as permitted by FWC. This coupled with some winter die back has the shoreline and emergent vegetation looking very brown. This vegetation will come back with the return of spring. With the current low water elevation of the lake, now would be a great time to target and remove the dead torpedo grass. This would encourage the expansion of the planted native vegetation come spring time.

Photo: Pickerelweed mixed in with dead torpedo grass.



The plantings from the October 22nd, 2011 restoration event at The Barrington Apartments are doing extremely well over this winter. We continue to encourage such native plantings along the shoreline.

Photo: Soft rush (newly planted in October, 2011) and cord grass at The Barrington Apartments.



The secchi (water clarity) was 6.7 feet in a depth of 8.5 feet compared to 6.1 feet during the December survey. Water elevation was 57.29 feet above sea level compared to previous reading of 58.07 feet.

Lake Recommendations:

- 1 Work together or establish a lake association 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 lake management recommendations. Seminole County Lake Management staff would be glad to present our findings from this and other surveys to the community. Contact Gloria Eby at (407) 665-2439.
- 2 Increase native aquatic plantings along shoreline (such as pickerelweed, duck potato, and canna). Native shoreline plants help absorb nutrients from rain-fall/run-off improving habitat, water quality, and reduces shoreline erosion which imports sediments/organics into the lake. Over time, this process will fill the lake creating a wetland type of environment. Planting natives now can assist in slowing this process down (which is formally known as eutrophication). In addition, native plantings can reduce your herbicide costs/needs providing a savings to you!

3 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 Contact Seminole County Lake Management Program, Gloria Eby, (407) 665-2439 for assistance.

4 Help spread the word! Obtain email addresses from neighbors not currently on the distribution list. Valuable information is contained within these assessments.

Mirror Lake 10-11-2011

Below please find the latest lake assessment for your lake. Key highlights of this update will include:

- October 22, 2011 Restoration Event
- Submersed aquatic vegetation (SAV) update
- Hydrilla update
- Water lily update

The Mirror Lake Restoration is just around the corner! On October 8th we will bring in FREE beautiful, beneficial native aquatic plants and at least 50 volunteers to help install them along Mirror Lake. These plants have many benefits aside from looking great. They will help filter pollution runoff before it gets into your lake, prevent shoreline erosion, and provide habitat for wildlife. We look forward to working with many of the Mirror Lake residents again.

On **October 11, 2011**, Seminole County Lake Management Program (SCLMP) personnel Gloria Eby and Thomas Calhoun surveyed the aquatic plants of **Mirror Lake**.

Nine submersed aquatic vegetation (SAV) were observed, 8 native and one exotic: lemon bacopa to a depth of 3 feet, musk grass to 5 feet, road grass to 5 feet, filamentous algae to 7 feet, the invasive exotic hydrilla to 7 feet, southern naiad to 7 feet, stonewort to 3 feet, bladderwort (*Utricularia inflata*) to 7 feet and eelgrass to 4.5 feet. All plants were observed at greater depths than the previous inspection. This is likely due to the previous storm events.

Photo: Bladderwort found during inspection.



Hydrilla was stressed, dominantly in the treated plots along the west central shoreline. Outside of the treatment areas hydrilla continues to expand nearshore and offshore. New treatment plots will be scheduled for future treatment. Eelgrass population continues to expand, being observed at new sites, but still in relatively shallow water (4.5 feet or less).

Photo: Hydrilla underwater



Overall the emergent native aquatic plants are doing well throughout the lake. Torpedo grass, continues to be the dominant emergent aquatic plant, although, it has been treated throughout the lake. Water lilies have been expanding around the lake and will be targeted in next herbicide treatment.

The secchi (water clarity) was 7.8 feet in a depth of 17.1 feet compared to 5.3 feet on the August survey. Water elevation was 59.44 feet above sea level compared to previous reading of 59.08 feet.