Greetings Horseshoe Lake North residents!

Below, please find the latest bioassessment for your lake. The next lake inspection is scheduled for **June 10th, 2014** (weather permitting). Key highlights of this update include:

- May herbicide services completed on the 21st
- Emergent invasive exotic plants observed in your lake
- Native emergent vegetation present
- Native submersed aquatic vegetation (SAV) found
- Reduction in water hyacinth observed
- Recommendations for you and your lake

Bioassessment:

On **May 14th, 2014**, Seminole County Lake Management Program (SCLMP) personnel, Gloria Eby and Thomas Calhoun, and lake liaison, Patty Searcy, surveyed the aquatic plants in Horseshoe Lake North.

Invasive aquatic plants observed during this inspection included: torpedo grass, alligator weed, wild taro, water sprite, salvinia, and water hyacinth. Only a few small plants of water hyacinth were found around the lake. The lake was scheduled for treatment on May 21st, 2014. Treatment status will be reassessed during June's inspection.

Photo: Alligator weed.

Photo: Salvinia at the southern end of the lake.

The 8th Street Canal was found in very good shape after the previous treatment for alligator weed, torpedo grass, and salvinia.

Photos: 8th Street Canal.

The observed beneficial SAV included road grass to a depth of 5 feet and baby's tears to a depth of 2 feet.

Photo: Baby's tears found to a depth of 2 feet.

Native emergent vegetation found during the inspection included: button bush, sawgrass, flat sedge, pickerelweed, canna, thalia, duck potato, bulrush, lizard tail, and maidencane. Planted maidencane is expanding well around the lake.

The Secchi measurement (for water clarity) was 2.8 feet in a total depth of 9.3 feet. The lake elevation was 36.8 feet above sea level at the time of inspection. The grass carp barrier was inspected and found to contain minimal debris (lawn chair) and very few invasive plants (wild taro) collected against the grate; a great improvement.

Photos: The grass carp barrier was free of water hyacinth.

Recommendations for you and 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 and lake management recommendations. SCLMP staff would be glad to present our findings from this and other surveys.

2 Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. Given that some plants are stressed, or did not survive from the previous planting session, the planting of native species should continue until successful establishment is achieved. SCLMP recommends planting in new locations that are shallower and have more sunlight.

3 Native and non-native invasive species sometimes grow very close together, making the non-native species difficult to treat. Non-native species can be hand-pulled from patches of native plants, or a directed herbicide treatment can be used to target the non-native species. Although directed treatments may impact adjacent native species, such herbicides may be necessary to prevent expansion of the non-native species. For overall success in lake management, everyone must become stewards of the lake. Residents should assist whenever possible in the removal of non-native plants in close proximity to native vegetation, and replant the area with beneficial native plants.

4 Utilize the valuable educational outreach programs that are available to you: Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community to promote the reduction of personal pollution;

encourage residents to decrease their overall fertilizer usage, use only phosphorous-free and slow-release nitrogen fertilizers, keep a functional shoreline with beneficial native aquatic plants, and keep grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.

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

Greetings Horseshoe Lake North Residents!

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

- No April 2014 herbicide treatment scheduled for your lake due to improved conditions
- Next bioassessment is scheduled for **May 14th, 2014** (weather permitting)
- Invasive/exotic and native vegetation present in your lake
- Next Lake Shoreline Restoration Event in August 2014
- Recommendations for you and your lake

Bioassessment:

Bioassessment reports are generated to communicate lake observations, inspection/treatment dates, educational opportunities, and recommendations for your lake.

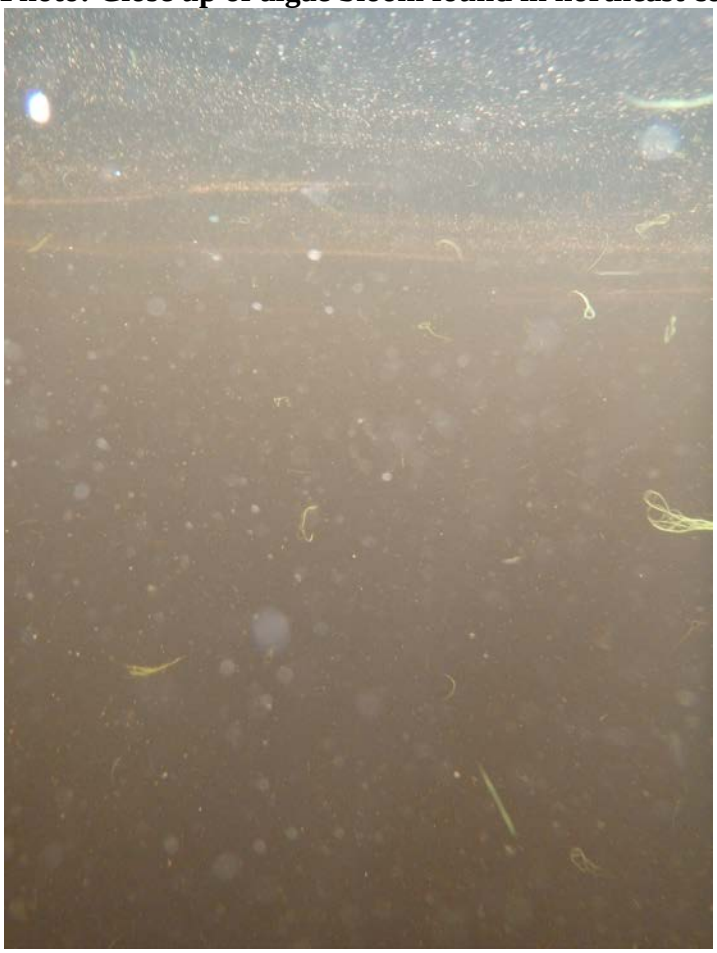
On **April 9th, 2014,** Seminole County Lake Management Program (LMP) personnel, Gloria Eby and Thomas Calhoun, joined by student intern Sophia Pengra, surveyed the aquatic plants in Horseshoe Lake North.

Invasive emergent/floating aquatic vegetation observed during inspection included torpedo grass, alligator weed, wild taro, bur-head sedge, salvinia, and water hyacinth. Many of these invasives were heavily impacted from the March 2014 herbicide treatment, especially the alligator weed that was forming mats. Only six single plants of water hyacinths were observed lake wide which was found along the shoreline just south of the outflow canal (where the grass carp fish barrier is found). A large cluster of water hyacinth was found dead on the east shoreline of the lake (photo below). Additionally, a small algae bloom was present on the northeast corner of lake.

Photo: Water hyacinth patch previously treated.

Photos: Example of alligator weed mat on left and impacted mat on right.

Photo: Close up of algae bloom found in northeast corner of lake (photo taken underwater).



The 8th Street canal was found to be in great shape and did not require herbicide treatment. Based upon the condition of the invasive exotics (impacted and reduced), combined with the condition of the canal, your lake will not require an herbicide treatment for the month of April. As always, LMP will conduct an initial bioassessment (generally the 2nd week of the month) prior to any herbicide treatment taking place (generally the 3rd week of the month) to determine treatment needs according to best lake management practices.

Photos: 8th Street Canal in March on left and current condition on right.

The observed beneficial SAV included road grass to a depth of 1 ft and baby's tears to a depth of 2 ft. Baby's tear continues to be observed in frequent locations. As invasives continue to be reduced, the opportunity for beneficial natives to expand will improve.

Native emergent vegetation found during the inspection included: button bush, sawgrass, flat sedge, pickerelweed, canna, thalia, duck potato, bulrush, lizard's tail, and maidencane. Maidencane appears to be expanding in areas established since prior inspection (March 2014).

Many of the beneficial native plants, provided by the LMP (at no cost to the MSBU assessment/budget) and planted by dedicated lake residents and liaisons, continue to do well. Pickerelweed, fire flag, canna, and maidencane have wintered very well and should continue to expand nicely.

Photo: Planted natives along east shoreline emerging in March (left photo) and expanding in April (right photo).

Previously we had selected August 30th as your next Restoration Event date for your lake. We realized this fell on Labor Day weekend and needed to reschedule due to poor volunteer turn-out on holiday weekends. We are working with your liaisons on a new date in August and event kick-off location. If you are interested in becoming a volunteer site for this Restoration Event to receive ***free*** beneficial aquatic plants for your shoreline, please contact your lake liaisons to sign up.

Photo: Identifying aquatic plants with lake laision, Leza Harrison, along her shoreline.

Secchi (measurement for water clarity) was 3.6 ft in a depth of 7.2 ft. The grass carp barrier was inspected and contained minimal debris (lawn chair and leaf litter) collected against the grate.

Photo: Condition of grass carp fish barrier (April 2014).

Water quality data for Horseshoe Lake North is available on the Seminole County Watershed Atlas website and more data will be posted soon. Please find this data and much more at:
http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7576&wbodyatlas=lake

Recommendations for you and 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. LMP staff would be glad to present our findings from this and other surveys.

2 Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. Given that some plants are stressed, or did not survive, the planting of natives should continue until successful establishment is achieved. LMP recommends planting in new locations that are shallower and have more sunlight. Volunteer your site for the next restoration event in August 2014.

3 Natives will grow and contain non-natives (and vice-versa) that become difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. Everyone must become stewards of the lake, in that they should assist and facilitate the removal of non-natives in close proximity to the natives and replant the area with beneficial natives for greater overall success.

4 Utilize the valuable educational outreach programs that are available, i.e. Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community to reduce personal pollution by: decreasing fertilizer usage, using only phosphorous free and slow-release nitrogen fertilizers, keeping a functional shoreline with beneficial native aquatic plants, and keeping grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.

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

Greetings Horseshoe Lake North residents!

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

- Annual MSBU Meeting with liaisons conducted in January 2014 with link to Annual Report
- Invasive/exotic and native vegetation present in your lake
- Next treatment date scheduled for **March 19th, 2014** (weather permitting)
- Next bioassessment scheduled for **April 8th, 2014** (weather permitting)
- Next shoreline planting event scheduled for **August 30th, 2014** (weather permitting)
- Recommendations for you and your lake

Annual Planning Session with Liaisons:

The annual Lake Management meeting (which is conducted for each MSBU waterbody) with your liaisons was held on January 23rd, 2014. The agenda for this meeting included review of: (1) prior year lake management and fiscal activity (FY12-13), (2) current conditions and lake management plan for balance of current fiscal year (FY13-14), and (3) projected plans for the next fiscal year (FY14-15), along with a review of the roles and responsibilities of the County and the liaisons. Summary of the Horseshoe Lake North Aquatic Weed Control MSBU can be found on the MSBU Program website at:
http://www.seminolecountyfl.gov/fs/msbu/msbudistrict2.aspx

Specific link to the Annual Report can be found at:
http://www.seminolecountyfl.gov/fs/pdf/2014%20Horseshoe%20North%20Report.pdf

Bioassessment:

Bioassessment reports are generated to communicate lake observations, inspection/ treatment dates, educational opportunities, and recommendations for your lake.

On **March 11th, 2014**, Seminole County Lake Management Program (LMP) personnel (Gloria Eby and Thomas Calhoun) surveyed the aquatic plants in Horseshoe Lake North.

Invasive emergent/floating aquatic vegetation observed during inspection included torpedo grass, alligator weed, wild taro, bur-head sedge, salvinia, and water hyacinth. The floating dock also contained invasives scheduled for treatment. The bur-head sedge previously found in the southern portion of the lake, as well as, the two newer locations on both the east and west sides of the lake had been greatly reduced by the herbicide treatment conducted on December 10, 2013 and winter conditions. Wild taro and alligator weed mats have increased since prior inspection, as well as salvinia on the south side of the lake. Water hyacinth was found in isolated patches throughout the lake and was documented by taking photos. These locations consisted of small clusters of plants with one location being within a restoration planting zone surrounded by natives. Since herbicide treatments will impact the natives, this area will not be treated, therefore it is recommended to hand remove hyacinth within close proximity of natives. This is especially important in any of the previously planted restoration zones that are designated as **no herbicide treatment zones**.

As always, LMP will conduct an initial bioassessment (generally the 2nd week of the month) prior to any herbicide treatment taking place (generally the 3rd week of the month) to determine treatment needs according to best lake management practices.

Photos: Water hyacinth behind planted natives on north shore in left photo with close up on right.

Photos: Example of water hyacinth patch observed during the March inspection.

Photo: Example of alligator weed mat that has expanded.

The 8th Street canal was found in good shape, but did contain alligator weed, torpedo grass, and salvinia. This canal will continue to be targeted upon each opportunity to treat the lake.

Photos: 8th Street Canal in December (left), and current condition (right).

The observed beneficial SAV included road grass (*Eleocharis baldwinii*) to a depth of 1 ft and baby's tears to a depth of 2 ft. Baby's tear continues to be observed in frequent locations. As invasives continue to be reduced, the opportunity for beneficial natives to expand will improve.

Native emergent vegetation found during the inspection included: button bush, sawgrass, flat sedge, pickerelweed, canna, thalia, duck potato, bulrush, lizard's tail, and maidencane.

Many of the beneficial native plants, provided by the LMP (at no cost to the MSBU assessment/budget) and planted by dedicated lake residents and liaisons with guidance provided by the LMP, are doing very well, however there is some plant loss due to wind/wave action. Pickerelweed, fire flag, and maidencane have wintered very well and should continue to expand nicely.

Photo: Planted natives along east shoreline emerging with spring like weather (left photo) and north shoreline planting zone that wintered well (right photo).

The **next Shoreline Restoration Workshop** for your lake is scheduled for **August 30th, 2014** (weather permitting). It is not too early to contact your lake liaisons to become a volunteer planting site for this event in which you can get free beneficial native aquatic plants!

Secchi (measurement for water clarity) was 3.0 ft in a depth of 8.7 ft. The grass carp barrier was inspected and found to contain minimal debris (lawn chair and leaf litter) collected against the grate.

Water quality data for Horseshoe Lake North is available on the Seminole County Watershed Atlas website and more data will be posted soon. Please find this data and much more at:
http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7576&wbodyatlas=lake

Recommendations for you and 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. LMP staff would be glad to present our findings from this and other surveys.

2 Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. Given that some plants are stressed, or did not survive, the planting of natives should continue until successful establishment is achieved. LMP recommends planting in new locations that are shallower and have more sunlight. Volunteer your site for the **August 30th, 2014** event.

3 Natives will grow and contain non-natives (and vice-versa) that become difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. Everyone must become stewards of the lake, in that they should assist and facilitate the removal of non-natives in close proximity to the natives and replant the area with beneficial natives for greater overall success.

4 Utilize the valuable educational outreach programs that are available, i.e. Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community to reduce personal pollution by: decreasing fertilizer usage, using only phosphorous free and slow-release nitrogen fertilizers, keeping a functional shoreline with beneficial native aquatic plants, and keeping grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.

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

Greetings Horseshoe Lake North residents!

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

- Clarification of herbicide used for invasives in Horseshoe Lake North (as presented at community meeting)
- Annual MSBU Meeting with Liaisons scheduled for January 2014
- Status of November treatment
- Invasive/exotic and native vegetation present in your lake
- Next bioassessment scheduled for March 11th, 2014 (weather permitting)
- Status of native plantings planted by lake residents in July 2013
- Recommendations for you and your lake

Herbicide → Roundup Custom

It has been brought to our attention that there may be some concern regarding the product (*Roundup)* indicated on the October 2013 treatment invoice that was referenced during the Horseshoe Lake North Community Meeting on Friday evening of November 22, 2013. Please be advised that this line item references the product "Roundup Custom." Roundup Custom is manufactured by Monsanto and is an approved product for aquatic use. The manufacturer's brochure on Roundup Custom can be found at this link:

http://www.monsantoito.com/docs/RoundupcustomBrochure.pdf.

Annual Planning Session with Liaisons

We are currently coordinating the arrangements for the annual Lake Management meeting (which is conducted for each MSBU waterbody) with your liaisons. The session is tentatively scheduled for January 22, 2014 with an alternate date of January 23, 2014. The meeting will be held at the Seminole County Watershed Management office in Sanford. The agenda for this meeting includes reviewing (1) prior year lake management and fiscal activity (FY12-13), (2) current conditions and lake management plan for balance of current fiscal year (FY13-14), and (3) projected plans for the next fiscal year (FY14-15), along with a review of the roles and responsibilities of the County and the liaisons. A summary of the meeting will be posted to the MSBU Program website soon thereafter.

Status & Focus of November Treatment

The treatment scheduled for November was postponed to allow opportunity for the liaisons to confirm community consensus for the scheduled treatment during the community meeting scheduled by the liaisons on November 22. Based upon this information, the November treatment was rescheduled and executed on December 10th, 2013. This treatment continued to target torpedo grass, alligator weed, wild taro, bur-head sedge, salvinia, and water hyacinth which resulted in further reduction of the invasive species present including the alligator weed mats.

Bioassessment:

On **December 17, 2013**, Seminole County Lake Management Program (LMP) personnel (Gloria Eby, Thomas Calhoun, and intern Joey Cordell) joined by Water Quality Program personnel (Marianne Pluchino and Michelle Shelton) surveyed the aquatic plants and collected water quality samples in Horseshoe Lake North.

Invasive emergent/floating aquatic vegetation observed during inspection included torpedo grass, alligator weed, wild taro, bur-head sedge, salvinia, and water hyacinth. The bur-head sedge previously found in the southern portion of the lake, as well as, the two newer locations on both the east and west sides of the lake were observed to be heavily impacted by the recent herbicide treatment conducted on December 10, 2013. Wild taro, alligator weed mats, and torpedo grass continues to be reduced lake wide. Water hyacinth was found scattered around the lake at 18 different locations and were documented by taking both photos and GPS waypoints. These locations consisted of small clusters of impacted plants that are expected to continue to fall out and die. A map

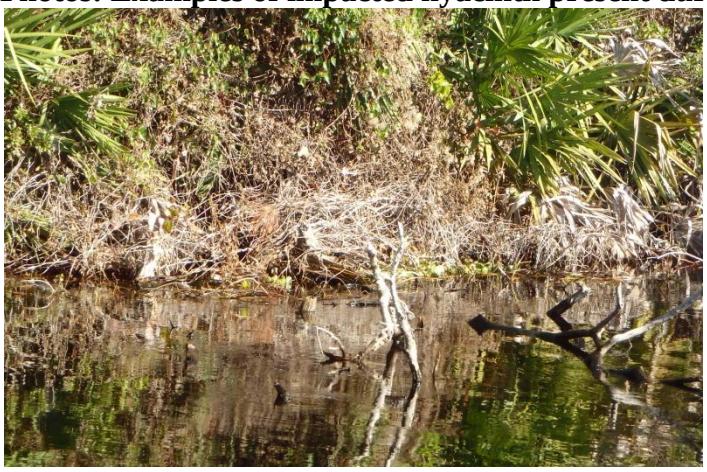
of these GPS locations was provided to your liaison members for documentation purposes. The significant expansion of water hyacinth previously found at the grass carp barrier was greatly impacted by the recent herbicide treatment and is expected to continue to fall out and die as well.

Given we are entering more frequent cold fronts, the lake is in good shape for the winter and treatments are not scheduled to resume until March 2014. As always, LMP will conduct an initial bioassessment prior to any herbicide treatment taking place (generally the 3rd week of the month) to determine treatment needs according to best lake management practices.

Photos: Water hyacinth reduction at the grass carp barrier (November on left - December on right showing impact from treatment).

Photo: Bur-head sedge along west shoreline impacted from treatment.

Photos: Examples of impacted hyacinth present during the December inspection.



Photos: Example of salvinia and hyacinth impacted from herbicide treatment.

The 8th Street canal was found in very good shape post treatment for alligator weed, torpedo grass, and salvinia. This canal will continue to be targeted upon each opportunity to treat the lake.

Photos: 8th Street Canal in November (left), and condition post treatment in December (right).

The observed beneficial SAV included road grass (*Eleocharis baldwinii*) to a depth of 1 ft and baby's tears to a depth of 2 ft. Baby's tear continues to be observed in frequent locations. As invasives continue to be reduced, the opportunity for beneficial natives to expand should increase.

Photo: Baby's tear surfacing the lake.

Native emergent vegetation found during the inspection included: button bush, sawgrass, flat sedge, pickerelweed, canna, thalia, duck potato, bulrush, lizard's tail, and maidencane.

Many of the beneficial native plants, provided by the LMP (at no cost to the MSBU assessment/budget) and planted by dedicated lake residents and liaisons with guidance provided by the LMP, are doing very well, however there is some plant loss due to wind/wave action. The bulrush that has survived transplantation is

showing signs of expansion with recent blooming. Additionally, the bulrush that had been impacted by the herbicide contractor is now sprouting to show some recovery. Duck potato has not fared as well as other natives planted, with only a few plants remaining. Pickerelweed, fire flag, and maidencane, however, are doing very well and expanding nicely.

Photo: Planted fire flag and bulrush along south shoreline.

Photos: Some bulrush observed as recovering in a previously impacted area.

Secchi (measurement for water clarity) was 3.2 ft in a depth of 8.4 ft. The lake elevation was 36.71 ft above sea level at time of inspection. The grass carp barrier was inspected and found to contain minimal debris (lawn chair, water hyacinth, and leaf litter) collected against the grate.

Water quality data for Horseshoe Lake North is available on the Seminole County Watershed Atlas website and more data will be posted soon. Please find this data and much more at: http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7576&wbodyatlas=lake

Recommendations for you and 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. LMP staff would be glad to present our findings from this and other surveys.

2 Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. Given that some plants are stressed, or did not survive, the planting of natives should continue until successful establishment is achieved. LMP recommends planting in new locations that are shallower and have more sunlight.

3 Natives will grow and contain non-natives (and vice-versa) that become difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. Everyone must become stewards of the lake, in that they should assist and facilitate the removal of non-natives in close proximity to the natives and replant the area with beneficial natives for greater overall success.

4 Utilize the valuable educational outreach programs that are available, i.e. Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community to reduce personal pollution by: decreasing fertilizer usage, using only phosphorous free and slow-release nitrogen fertilizers, keeping a functional shoreline with beneficial native aquatic plants, and keeping grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.

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

Have a great weekend and a wonderful holiday season!!!!!

Greetings Horseshoe Lake North residents!

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

- October treatment previously scheduled for Horseshoe Lake North and status of this treatment
- Emergent invasive exotic and native vegetation present in your lake
- Status of native plantings planted by lake residents in July 2013
- Recommendations for you and your lake

Bioassessment:

On **November 19th, 2013**, Seminole County Lake Management Program (SCLMP) personnel, Gloria Eby and Thomas Calhoun, surveyed the aquatic plants in Horseshoe Lake North.

Invasive aquatic plants observed during this inspection included: torpedo grass, alligator weed, wild taro, bur-head sedge, salvinia, and water hyacinth. October's treatment resulted in the alligator weed mats being reduced by about one-half; these will continue to be targeted during each lake treatment. Bur-head sedge was found in the southern portion of the lake, as well as, in two new locations on both the east and west sides of the lake with salvinia. Wild taro and torpedo grass continues to be reduced lake wide. Water hyacinth was found scattered around the lake in 25 different locations and were documented by taking both photos and GPS waypoints. These locations consisted of small clusters of 1 to 10 plants. A map of the bur-head sedge and water hyacinth GPS locations were provided to your liaison members. The only significant expansion of water hyacinth was found at the grass carp barrier, which had doubled in size since October's inspection. This area, as well as the bur-head sedge locations, will be targeted during the next herbicide treatment, which had been scheduled for November 20th however; the November treatment was postponed to allow opportunity for the liaisons to confirm community consensus for the scheduled treatment during the community meeting scheduled by the liaisons for November 22.

Photos: Water hyacinth expansion at the grass carp barrier (October on left-November on right).

Photo: Bur-head sedge found expanding along the southeastern shoreline with salvinia.

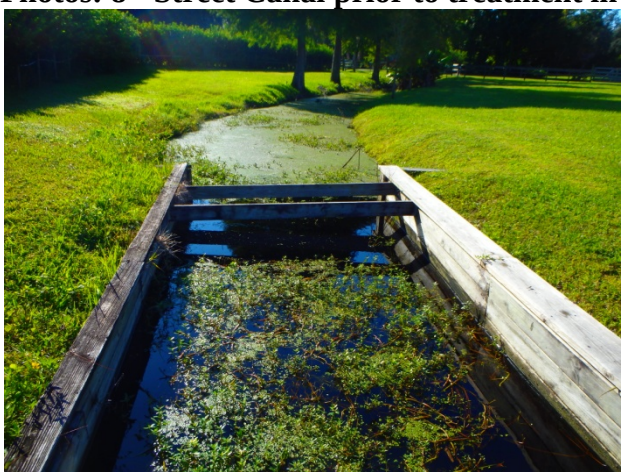
Photos: Examples of hyacinth present during the November inspection.

Photos: Example of alligator weed observed on left and impacted mat (as result from October's herbicide treatment) on right.

Additionally provided (attached) is the Florida Department of Environmental Protection's WEED ALERT factsheet with more helpful information about the biology and growth rate of water hyacinth.

The 8th Street canal was found in very good shape after the previous treatment for alligator weed, torpedo grass, and salvinia. This canal will continue to be targeted upon each opportunity to treat the lake.

Photos: 8th Street Canal prior to treatment in October (left), and condition in November (right).



The observed beneficial SAV included road grass (*Eleocharis baldwinii*) to a depth of 3 ft and baby's tears. Baby's tears were found expanding along the shoreline in more areas than in previous inspections. As invasives continue to be reduced, the opportunity for beneficial natives to expand should increase.

Photo: Baby's tears surfacing the lake.

Native emergent vegetation found during the inspection included: button bush, sawgrass, flat sedge, pickerelweed, canna, thalia, duck potato, bulrush, lizard's tail, and maidencane. Aster, bur-marigold, and hemp vine are beginning to flower around the lake.

Photo: Aster (*Aster carolinianum*) in full fall bloom.

Photo: Hemp vine (*Mikania scandens*) on left and bur marigold (*Bidens mitis*) on right.

Many of the beneficial native plants, provided by the LMP (at no cost to the MSBU assessment/budget) and planted by dedicated lake residents and liaisons with guidance provided by the LMP, are doing very well, however there is some plant loss due to wind/wave action. Only a few bulrush remain lake wide. As mentioned in previous assessments, this can be attributed to the plant going into shock from immediate changes (from potted state to being planted in a lake) and not acclimating well to the new deep water environment. Unfortunately the bulrush that had been impacted by the herbicide contractor did not recover. Duck potato has not fared very well either, with only a few plants remaining. Pickerelweed, fire flag, and maidencane, however, are doing very well and expanding nicely.

Photo: Planted fire flag and pickerelweed expanding along northern shoreline.

Secchi (measurement for water clarity) was not measured during this inspection. The lake elevation was 36.80 ft above sea level at time of inspection. The grass carp barrier was inspected and found to contain minimal debris (lawn chair, water hyacinth, and leaf litter) collected against the grate.

Water quality data for Horseshoe Lake North is available on the Seminole County Watershed Atlas website and more data will be posted soon. Please find this data and much more at: http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7576&wbodyatlas=lake

Recommendations for you and 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. LMP staff would be glad to present our findings from this and other surveys.

2 Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. Given that some plants are stressed, or did not survive, the planting of natives should continue until successful establishment is achieved. LMP recommends planting in new locations that are shallower and have more sunlight.

3 Natives will grow and contain non-natives (and vice-versa) that become difficult to treat. Unless hand pulled, a directed herbicide treatment targeting the non-natives (which will expand otherwise) will impact the adjacent natives. Everyone must become stewards of the lake, in that they should assist and facilitate the removal of non-natives in close proximity to the natives and replant the area with beneficial natives for greater overall success.

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

Have a great weekend!