Greetings Howell Creek Residents!

Please find the latest bioassessment report for your creek below. Next inspection will take place January 4th, 2017. Some of the key highlights from this report include:

- Hydrilla update
- Submersed aquatic vegetation (SAV)
- Emergent vegetation
- Lake Waumpi vegetation status/update

On July 25th, 2016, Seminole County Lake Management Program biologists, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in Howell Creek and Lake Waumpi.

Hydrilla has increased in Howell Creek since the previous inspection. Three patches of hydrilla have established within the creek system. Which are located at the weir, the middle bend and at the mouth of Lake Waumpi.

Native submersed aquatic vegetation (SAV) species found during the inspection included: coontail, roadgrass, bladderwort, and eelgrass. Substrate algae was present on most of the submersed vegetation.

Photo: Coontail (native).
Invasive emergent vegetation observed during the inspection included: alligator weed, paragrass, wild taro, water hyacinth, water primrose, torpedograss, duckweed, salvinia, chinese tallow, and creeping oxeye.

**Photo: Duck weed.**

Very little native emergent vegetation was present. Native emergent vegetation found during the inspection included: pennywort, pickerelweed, duckweed, and spatterdock.
Lake Waumpi was also surveyed during this inspection. There has been a reduction in water lilies since the previous inspection. The hydrilla that had previously been treated in Lake Waumpi has begun to recover and expand. Sprigs were found throughout the lake but concentrated at the shoreline.

Photo: Lake Waumpi.

The secchi reading (water clarity) in Lake Waumpi was visible on bottom at a depth of 3 feet. No triploid (sterile) grass carp fish were observed.
On **August 29th, 2016**, Seminole County Lake Management Program biologists, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in **Howell Creek** and **Lake Waumpi**.

Hydrilla has expanded in both Howell Creek and Lake Waumpi since the previous inspection. The three patches found in Howell Creek remain persistent, but the majority was found in the upstream section at the mouth of Lake Waumpi outside of the MSBU funded boundary for Howell Creek. This area was topped out with hydrilla as well as much of Lake Waumpi. We will contact the City of Winter Park for treatment plan.

**Photo: Topped out hydrilla at the mouth of Lake Waumpi.**

Native submersed aquatic vegetation (SAV) species found during the inspection included: coontail, roadgrass, red ludwigia, and eelgrass.

Invasive emergent vegetation observed during the inspection included: alligator weed, duckweed, wild taro, water-primrose, torpedograss, salvinia, and creeping oxeye. Both alligator weed and torpedograss have increased since the previous inspection. Alligatorweed, salvinia, and torpedograss will be targeted during next herbicide treatment.
Native emergent vegetation found during the inspection included: pennywort, spatterdock, and water paspalum.

Photo: Water paspalum.
Lake Waumpi was also surveyed during this inspection. The lake was topped out with hydrilla and not navigable. After contacting The City of Winter Park we were advised that a plan is currently being developed a plan to control the hydrilla of Lake Waumpi. We were notified that the hydrilla could be a resistant strain. Hydrilla samples will be tested to determine the susceptibility of the plant to resistant types of aquatic herbicides that are often used for hydrilla treatments.

Photo: Hydrilla in Lake Waumpi

The secchi reading (water clarity) in Lake Waumpi was visible on bottom at 3 feet. One triploid (sterile) grass carp fish was observed.
On November 7th, 2016, Seminole County Lake Management Program biologists, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in Howell Creek and Lake Waumpi.

Hydrilla has expanded in all three areas to the point that a large scale treatment will be needed in the creek as well as Lake Waumpi.

Photo: Hydrilla (invasive).

Native submersed aquatic vegetation (SAV) species found during the inspection included: coontail, roadgrass, bladderwort, and eelgrass.
Invasive emergent vegetation observed during the inspection included: alligator weed, wild taro, water hyacinth, primrose willow, torpedograss, salvinia, cuban bur-head sedge, and creeping oxeye.

Photo: Water hyacinth (invasive).

Native emergent vegetation found during the inspection included: pennywort, duckweed, spatterdock, water paspalum, and climbing aster. Very little native emergent vegetation was seen.
Lake Waumpi was also surveyed during this inspection. The lake was topped out with hydrilla and not navigable. The City of Winter Park is currently developing a plan to control the hydrilla of Lake Waumpi.

**Photo: Lake Waumpi.**

The secchi reading (water clarity) in Lake Waumpi was visible on bottom at 3 feet. No triploid (sterile) grass carp fish were observed. Lake Watch water quality data for Lake Waumpi can be found on the Seminole County Watershed Atlas at:
Hydrilla samples were collected from Howell Creek for genetic testing. Testing the hydrilla determines the susceptibility of the plant to resistant types of aquatic herbicides that are often used for hydrilla treatments (such as endothall and fluridone). We expect complete results within a month.

**Lake Recommendations:**

1- Work together to 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 Seminole County Lake Management Program at (407) 665-2439 with questions or to schedule a meeting.

2- Increase native aquatic plantings along the shoreline (such as pickerelweed, duck potato, and canna). Native shoreline plants help absorb nutrients from rainfall/run-off, thereby improving habitat and water quality, and reducing shoreline erosion of sediments/organic matter into the lake. Without management, this erosion and sedimentation will fill the lake over time, creating a wetland-type of environment. Planting native species now can assist in slowing this process.
(formally known as eutrophication). In addition, native plantings can reduce your herbicide costs/needs, thereby providing a savings to you!

3- Utilize the valuable educational outreach programs that are available, such as Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYI) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community about reducing personal pollution by: decreasing overall 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 stormdrains that lead to the lakes. 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.

4- Help spread the word! Obtain email addresses from neighbors not currently on the distribution list in order to share this information with others. Valuable information is contained within these reports.
On December 7\textsuperscript{th}, 2016, Seminole County Lake Management Program biologists, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in Howell Creek and Lake Waumpi.

On November 16\textsuperscript{th} The City of Winter Park began an herbicide treatment for the resistant hydrlila using a slow drip system upstream of Lake Waumpi. Lake Waumpi was also treated by The City of Winter Park. Drift from these treatments has treated the Howell Creek in Seminole County. The hydrilla within the boundaries of the MSBU is showing impact from the treatment. We will continue to monitor the progress of the treatment to see if any follow up treatments in the Creek will be needed.

At the time of inspection the water level was low. The water was turbid due to the large herbicide treatment.

\textbf{Photo: Hydrilla.}
An algae bloom was observed. As the hydrilla dies off, nutrients are released into the water. This excess of nutrients feeds the algae bloom.

Photo: Algae bloom.

Native submersed aquatic vegetation (SAV) species found during the inspection included: roadgrass, bladderwort, and eelgrass.
Invasive emergent vegetation observed during the inspection included: alligator weed, primrose willow, and primrose willow.

Native emergent vegetation found during the inspection included: flat sedge, pennywort, and duck weed. There was an observed increase in duck weed.
Lake Waumpi was also surveyed during this inspection. The lake had a reduction in hydrilla since the previous inspections but the perimeter of the lake was still topped out. Cattails and primrose willow along the whole shoreline of the lake have also been treated.

Photo: Lake Waumpi.

The secchi reading (water clarity) in Lake Waumpi was visible on bottom at 3 feet. Two triploid (sterile) grass carp fish were observed. LakeWatch water quality data for Lake Waumpi can be found on the Seminole County Watershed Atlas at: [http://www.seminole.wateratlas.usf.edu/lake/default.asp?wboid=151861&amp;wboidatlas=lake](http://www.seminole.wateratlas.usf.edu/lake/default.asp?wboid=151861&amp;wboidatlas=lake).

**Lake Recommendations:**

5- Work together to 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 Seminole County Lake Management Program at (407) 665-2439 with questions or to schedule a meeting.

6- Increase native aquatic plantings along the shoreline (such as pickerelweed, duck potato, and canna). Native shoreline plants help absorb nutrients from rainfall/run-off, thereby improving
habitat and water quality, and reducing shoreline erosion of sediments/organic matter into the lake. Without management, this erosion and sedimentation will fill the lake over time, creating a wetland-type of environment. Planting native species now can assist in slowing this process (formally known as eutrophication). In addition, native plantings can reduce your herbicide costs/needs, thereby providing a savings to you!

7- Utilize the valuable educational outreach programs that are available, such as Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community about reducing personal pollution by: decreasing overall 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 stormdrains that lead to the lakes. 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.

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