

Spring Lake 2009-2010

On **8 October 2009**, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Shannon Wetzel (SC Senior Environmental Scientist), Marianne Pluchino (SC Senior Environmental Scientist) & Dean G Barber (SC Consultant), surveyed the aquatic plants in Spring Lake. As previously observed, eelgrass (*Vallisneria americana*) continues to be the lake's dominant aquatic plant, observed to a depth of 8 feet. However, hydrilla (*Hydrilla verticillata*) present in small populations in shallow water, is on the deep side of the eelgrass to 10 feet existing as a monoculture (one single plant). In absence of any competition (eelgrass) hydrilla is establishing within this region. Beyond a depth of 11ft, no submersed aquatic vegetation was observed in the samples.

We are optimistic that the stocking rate of triploid grass carp and the native submersed aquatic vegetation (SAV) eelgrass will continue to help keep the hydrilla at bay. So far this has been true as no additional hydrilla herbicide treatments have been required. We will continue to monitor this invasive plant monthly. An additional positive observation is both muskgrass (*Chara spp.*) and southern naiad (*Najas guadalupensis*) were noted on the deep side of the eelgrass. This is a good sign and hopefully these native submersed aquatic vegetation (SAV) will continue to expand. The only other SAV observed was water hyssop (*Bacopa monnieri*), which was in shallow water.

The Secchi (water clarity) was 3.9 feet in 15.9 feet and improvement from the previous month reading of 3.5 feet.

On 10 October 2009 several additional homeowner waterfronts were planted by lake residents, Seminole County staff and WAV volunteers with native emergent aquatic plants. Maintenance of invasive plants on previously managed sites was also completed. These important accomplishments helps reduce the invasive plant torpedo grass (*Panicum repens*) from expanding, increase the native vegetation that absorbs nutrients, reduces shoreline erosion and plays a key role in keeping Spring Lake beautiful.

For those parcels that have participated in these restorations events, please continue to maintain your area protecting the efforts/investment your community has assisted with. If at any time you have a question regarding shoreline maintenance, please contact me and I will be happy to assist. During inspections, we will note suggestions if needed for these areas.

Annual MSBU activity letters are in the process of being finalized, look for this in your mailbox soon. As prior, this will include expenditures, activities, status and recommendations for your lake.

On **2 December 2009**, Seminole County Lake Management Program staff Dean G Barber and Thomas Calhoun surveyed the aquatic plants in Spring Lake. As in previous months, eelgrass continues to be the lake's dominant aquatic plant, observed to a depth of 7-8 feet. However, the invasive hydrilla is still present in small populations in shallow water, and on the deep side of the eelgrass in 8-10 feet. Although, an additional previous positive observation is both muskgrass and southern naiad have been observed on the deep side of the eelgrass. Hopefully these native SAV will expand at this depth. Other native SAV observed included: coontail, road grass and nitella. Although these native plant populations, other than eelgrass, are limited and infrequently observed, we continue to be optimistic that these native SAV, with the eelgrass and present stocking rate of triploid grass carp will continue to inhibit the expansion of hydrilla.

All the 10 October 2009 restoration event sites were doing well with plantings expanding at each site. The Secchi (water clarity) was 4.9 ft. in a depth of 13 ft, a significant improvement from the 10/8/2009 reading of 3.9 ft.

On 12 January 2010, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Dean G Barber (SC Consultant) and Thomas Calhoun (Assistant Scientist) surveyed the aquatic plants in Spring Lake. As previously observed, eelgrass (*Vallisneria americana*) continues to be the lake's dominant aquatic plant, observed to a depth of 8 feet coming up to 1 foot below the surface. However, hydrilla (*Hydrilla verticillata*) present in small populations in shallow water is on the deep side of the eelgrass and found sparse up to 14 feet. In absence of any competition (eelgrass) hydrilla is establishing within this region.

We are optimistic that the stocking rate of triploid grass carp and the native submersed aquatic vegetation (SAV) eelgrass will continue to help keep the hydrilla at bay. So far this has been true as no additional hydrilla herbicide treatments have been required. We will continue to monitor this invasive plant monthly. The October 9, 2009 plantings done by lake residents, Seminole County staff and WAV volunteers are doing very well. The Seminole county contractor has started the treatment of torpedo grass and as of the 14 of January treated the access corridors for eelgrass.

The Secchi (water clarity) was 6.4 feet in 19.5 feet and improvement from the previous month reading of 3.9 feet.

On 4 February 2010, , Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Dean G Barber (SC Consultant) and Thomas Calhoun (Assistant Scientist) surveyed the aquatic plants in Spring Lake. Eelgrass continues to be the dominant aquatic plant in shallow water to a depth of 8.5 feet coming near the surface or within a 1 foot of the surface. Some strands were almost 8 foot long. Hydrilla is present in small populations in shallow water and found on the deep side of the eelgrass to 10-14 feet. These deep water populations were observed throughout the lake, but were sparse with few plants. Plants were healthy, with new growth, but short strands of 4-8 inches in length.

The present triploid grass carp population is 1-3 years old, the ideal age for these fish to consume hydrilla which is their preferred aquatic plant. The only other submersed aquatic vegetation (SAV) observed was baby tears. Although several other species of SAV have been reported in the past (6-8 species) it is common during colder winter months for several of these species to decline until spring. Emergent aquatic plants have also been impacted by the cold weather however it is apparent that the native emergent plants are doing well and will likely continue to expand, competing with the torpedo grass for space.

A few cold-temperature related dead fish, primarily tilapia, were observed decaying and reduced in numbers from the previous month. The Secchi reading (water clarity) was 5.9 feet in a depth of 12.6 compared to 6.4 feet on 12 January 2010.

Eelgrass corridors were treated end of December and mind January. Minimal impact was observed in the newer corridor areas. Continued treatments will be required to control eelgrass in boating areas.

For those parcels that have participated in previous lakefront restorations events, we encourage you to continue to maintain your area. Thus far, these areas have done very well with the exception of plant loss in 3 areas. We hope to include these areas for the next workshop on May 1st, 2010. There are several parcels on Spring Lake that are in dire need of emergent aquatic

plants and have been contacted in the past for participation. We hope these parcels will join us on May 1st creating a beneficial shoreline for Spring Lake. If you are interested in this program, please contact me to coordinate with you.

Volunteers will be assisting the community in removing invasive torpedo grass at the Spring Valley HOA Park on Saturday, February 13th from 9-1pm. Please contact wavsem@seminolecountyfl.gov to sign up.

On **16 March 2010**, Seminole County Lake Management Program staff Gloria Eby and Dean G Barber (Consultant) surveyed the aquatic plants in Spring Lake. Eelgrass continues to be the dominant aquatic plant from shallow water to a depth of 9 feet with less coming to the surface. Most of the strands are within a 1-3 feet of the surface. The shallow eelgrass strands were covered with algae, possibly from the influx of nutrients from recent rainfall. Other native submersed aquatic vegetation observed included chara, baby tears, stonewort and a pondweed, (*Potamogeton pusillus*). Hopefully, these populations will expand in the spring, especially chara, stonewort and southern naiad (not observed during this survey) to once greater abundant, thereby, reducing the eelgrass and help the triploid grass carp fish inhibit hydrilla.

Hydrilla, although still present in small populations in shallow water and found to a depth of 9 feet, continues to be in small populations, mostly consisting of a few strands 4-8 inches. Plants were healthy, but stressed from the winter impact. Emergent aquatic plants, both native and exotic, impacted by the winter weather, are showing signs of spring recovery and will start to expand. Several waterfronts, especially those that have participated in county workday events are starting to see native emergent plants take over former invasive torpedo grass habitat. It is important that these sites be managed by both lakefront residents and herbicide contractor to keep reducing the torpedo grass. Remember that our next workshop is on May 1st, 2010 and we count on your participation. The Spring Valley Farms HOA Park February 13, 2010 workshop was very successful and the work accomplished was very evident during this survey. The secchi (water clarity) was 7 feet in a depth of 10.2 feet. One triploid grass carp was observed.

On **May 5th and 26th**, 2010, Seminole County Lake Management Program staff surveyed the aquatic plants in Spring Lake. Eelgrass continues to be the dominant aquatic plant from shallow water to a depth of 9 feet with strands coming to the surface. Other native submersed aquatic vegetation observed included chara, nitella, southern naiad, baby tears and a pondweed (*Potamogeton diversifolius*).

Hydrilla, still present in small populations in shallow water and found to a depth of 9 feet, continues to be in small populations, and is appearing mixed with the eelgrass at a higher density. Since our inspection on 5 May 2010, a small treatment for hydrilla was scheduled and conducted near the mouth of the western cove (adjacent to Spring Valley HOA park) and 45 10-12" grass carp fish were ordered and introduced to the lake on May 18th, 2010.

Emergent aquatic plants, both native and exotic, are showing full spring recovery and are expanding. Several waterfronts, especially those that have participated in county workday events, are seeing native emergent plants take over former invasive torpedo grass habitat and flourishing (photos attached). It is important that these sites continue to be managed by both lakefront residents and herbicide contractor to keep reducing torpedo grass.

Eelgrass corridors continue to be treated and remain open for access, this includes the 3 new locations on Spring Lake.

The secchi (water clarity) was 5.2 feet in a depth of 11.5 feet.

As experienced last year, as the water elevation within Spring Lake decreases, more eelgrass is exposed on the surface appearing as if the plant has expanded. Recent lake elevations indicate a 1.2 foot elevation change for your lake: 3/31 64.16 ft, 4/30 63.46 ft, 5/26 62.92 ft .

On **23 July**, Seminole County Lake Management Program staff Gloria Eby (SC Senior Environmental Scientist), Thomas Calhoun (SC Assistant Scientist) and Carol Watral (SC MSBU Program) surveyed the aquatic plants in Spring Lake. Eelgrass (*Vallisneria americana*) continues to be the dominant aquatic plant from shallow water to a depth of 8.5 feet. Most of the strands are within a 1-3 feet of the surface. Some of the access corridors currently needs to be retreated for eelgrass however for the most part the corridors are open and navigable.

Other native submersed aquatic vegetation observed included stonewort (*Nitella spp.*) to 4 ft, southern naiad (*Najas guadalupensis*) to 9.5 ft and pondweed (single strand found) (*Potamogeton pectinatus*). Hydrilla was found during the inspection mixed in with the eelgrass to a depth of 12ft. Hydrilla, although still present in shallow water to a depth of 12 feet, continues to be in small populations, mostly consisting of a few strands 4-8 inches. Several waterfronts, especially those that have participated in county workday events are starting to see native emergent plants take over former invasive torpedo grass habitat. It is important that these sites be managed by both lakefront residents and herbicide contractor to keep reducing the torpedo grass.

The secchi (water clarity) was 8.2 feet in a depth of 12.8 feet. One triploid grass carp was observed. The water elevation at the time of survey was 62.80 feet above sea level.