

Tuskawilla Lake 2009-2010

On **21 October 2009**, Seminole County Lake Management Program staff, Gloria Eby, Dean G Barber and Thomas Calhoun surveyed the aquatic plants in Lake Tuskawilla. No hydrilla was observed on this survey. This is likely a result of both the aquatic herbicide, Sonar, and the stocked triploid grass carp fish impacting hydrilla plant re-growth. Native SAV observed included: road grass, filamentous algae, babytears, southern naiad, and stonewort. The filamentous algae, mostly on the lake bottom, is the dominant vegetation observed. Fortunately, it is making it difficult for the hydrilla to re-establish by covering the new hydrilla plants preventing them from receiving enough light to grow, however, it is also making it difficult for the native SAV to expand.

Babytears was noted to a depth of 6.5 ft.

Torpedo grass continues to be the dominant emergent aquatic plant. It is present on all waterfronts. Lake Tuskawilla Association has hired a contractor that will soon begin treating the torpedo grass of which we will monitor these affects. Following these treatments, on April 10th, 2010, with the assistance of lakefront homeowners, we will be planting the impacted shorelines with native aquatic plants. These plantings will help prevent the torpedo grass from re-establishing and create a more beneficial shoreline (assisting in nutrient uptake and minimizing shoreline erosion).

The Secchi reading (water clarity) was 5.1 feet in a depth of 6.8 feet. July 2009 reading was 4 feet in a depth of 12 feet. The historic Secchi reading, from February 1982 to present, including 112 samples, has been 1 to 10.5 feet. Lake water level is 54.29 feet above sea level. July 2009 reading was at 54.38 feet. Historic levels from January 1993 to present have been 46.4 to 56 feet. All this information and much more is available on the Seminole County Wateratlas at: <http://www.seminole.wateratlas.usf.edu>

On **December 15, 2009**, Seminole County Lake Management Program staff, Gloria Eby, Dean G Barber and Thomas Calhoun surveyed the aquatic plants in **Lake Tuskawilla**. No hydrilla was observed on this survey and the previous survey, 21 October 2009. The native SAV observed consisted of road-grass, baby tears and southern naiad. However, each of these amounted to a trace of plants, between 0.1 to 0.2 acres. This is a factor of the previous treatment of the hydrilla, stocking of the triploid grass carp fish and the winter reduction of the aquatic plants. Previously, algae was the most abundant vegetation on the bottom, during this survey it was significantly reduced with leaves from the shoreline vegetation and trees being most prevalent. It is anticipated that the aquatic plants, especially the native SAV, will start to expand in the spring, representing a significant portion of the lake's aquatic plant population. Baby tears, most likely the most abundant SAV, was observed to a depth of 4 feet, reduced from the 6.5 ft. observed on the previous survey.

The invasive exotic torpedo grass fall treatment was very successful, with most of the lake's torpedo grass being treated. With the spring 2010 re-vegetation project (April 10th), where shorelines will be planted with native aquatic plants such as canna, duck potato and pickerelweed, these plants will help prevent torpedo grass from returning.

The Secchi (water clarity) was 5.5 feet in a depth of 14 feet. Previous reading was 5.1 feet. The historic Secchi readings, from February 1982 to present, including 112 samples, has been 1 to 10.5 feet. This information and much more is available on the Seminole County Wateratlas at: <http://www.seminole.wateratlas.usf.edu>

On **January 27, 2010**, Gloria Eby (Seminole County (SC) Senior Environmental Scientist), Dean G Barber (SC Consultant) and Thomas Calhoun (SC Assistant Scientist) surveyed the aquatic plants in Lake Tuskawilla. No Hydrilla was found during this inspection. It was apparent that the July 7, 2008 herbicide (Sonar) treatment with the August 5th follow up treatment is still impacting this submersed invasive aquatic plant. Some of the SAV found during this inspection includes; Southern naiad (*Najas guadalupensis*), road-grass (*Eleocharis spp*) and baby's tears (*Micranthemum glomeratum*). As spring approaches, native SAV should expand and with the recent addition of triploid grass carp, should continue to impact any hydrilla re-growth.

A planktonic algal bloom was noted at several locations on the lake. It is not unusual to see these blooms during fall as the herbicide treatment on the large biomass of hydrilla has released nutrients into the water column; however it is unusual the duration of bloom for this lake. It is anticipated that the bloom will disappear soon and naturally. The Secchi (water clarity) reading at the time of inspection was 5.8ft in a depth of 13ft total.

On **April 20, 2010**, Gloria Eby (Seminole County (SC) Senior Environmental Scientist), Dean G Barber (SC Consultant), Thomas Calhoun (SC Assistant Scientist) and resident Cindy Susi surveyed the aquatic plants in Lake Tuskawilla. Some of the SAV found during this inspection includes; Southern naiad (*Najas guadalupensis*), road-grass (*Eleocharis sppm*), Pondweed (*Potamogeton diversifolius*) and baby's tears (*Micranthemum glomeratum*). Hydrilla was also found during the inspection. A planktonic algal bloom was noted at several locations on the lake. We are finding that some of the plants from the April 10th restoration event have been popping up. So if any residents can please replant these when they see them this will ensure us a successful restoration. The Secchi (water clarity) reading at the time of inspection was 5.9ft in a depth of 9.8 ft total.

On **June 2, 2009**, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Marianne Pluchino (SC Senior Environmental Scientist), Dean G Barber (SC Consultant), Thomas Calhoun (Assistant Scientist), David Scharr (DEP) and Day McClanahan (DEP) surveyed the aquatic plants and conducted a Lake Vegetation Index (LVI) of Lake Tuskawilla. The LVI was created by the Florida Department of Environmental Protection as a rapid screening tool for ecological condition; it determines how closely a lake's flora resembles that of an undisturbed lake. Lake Tuskawilla is 92 surface acres with a mean depth of 6 feet, maximum depth of 24 feet, located in the Little Lake Howell watershed. The Secchi (water clarity) was 8.5 ft in a depth of 9.5 ft. The range of this reading from 1982-2010, 118 samples, has been 1.0 to 10.5 ft. The Water Quality Index (Trophic State) was 46 (Good) taken 2/23/2010. The water quality range for 108 samples taken from 1998 to 2010 has been 22 (Good) to 62 (Fair). All this information is available on the Seminole County Water Atlas.

<http://www.seminole.wateratlas.usf.edu>.

On **June 17, 2010**, Gloria Eby (Seminole County (SC) Senior Environmental Scientist), Thomas Calhoun (SC Assistant Scientist), Jim Dipple (Seminole County) and resident Cindy Susi

surveyed the aquatic plants in Lake Tuskawilla. Some of the native submersed aquatic vegetation (SAV) found during this inspection includes; Southern naiad (*Najas guadalupensis*), Stonewort (*Nitella spp.*), Road-grass (*Eleocharis baldwinii*), Pondweed (*Potamogeton diversifolius*) and baby's tears (*Micranthemum glomeratum*). Both Stonewort and Southern naiad have expanded to a depth of 7ft. Hydrilla (*Hydrilla verticillata*) was also found during the inspection but only sparsely in shallow areas. Also the inshore area is seeing an increase in eel grass (*Vallisneria Americana*). This new growth and the recent expansion of both Stonewort and Southern naiad will play a significant role in preventing hydrilla from expanding. The Secchi (water clarity) reading at the time of inspection was 6.6 ft in a depth of 11.5 ft total an increase from the last inspection's reading of 5.9 ft.

On 14 September 2010 Seminole County Lake Management Program (SCLMP) staff, Gloria Eby, Dean G Barber and Thomas Calhoun with Lake Resident Cindy Susi surveyed the aquatic plants in **Lake Tuskawilla**. Native submersed aquatic vegetation (SAV) observed consisted of road-grass to a depth of 5.5 feet, filamentous algae to 7 feet, baby tears to 2.5 feet, southern naiad to 5 feet, stonewort (nitella) to 5 feet, and eelgrass to 3.5 feet. No invasive exotic hydrilla was observed during this survey. Filamentous algae was the most dominant of these, covering significantly more of the bottom than all the other SAV combined. However, the percent coverage of other native SAV is increasing. This coverage of SAV to a depth of 7 feet, coupled with the stocked triploid grass carp fish are the key factors in inhibiting the expansion of hydrilla. Leaves from shore vegetation and trees still represent a large portion of the bottom coverage, especially being the primary coverage of the bottom in waters greater than 7 feet.

With the three aquatic planting events (9th, 10th April and 10th July 2010) the pickerelweed, duck potato and canna are doing well at most of the planting sites; there is loss to some of the sites as wave action has uprooted these plants. These native emergent plants are key to inhibiting the invasive exotic, torpedo grass, adjacent to water front owner's shorelines. Torpedo grass once thick and healthy, has reduced from previous surveys from a combination of these native plants and the aquatic herbicide applications scheduled by your lake association.

Torpedo grass has been impacted throughout the lake however there is some re-growth that is difficult to treat. Minimal leaf blades present to uptake the herbicide product makes this difficult to treat. We continue to encourage homeowners to remove any dead/dieback or sparse torpedo grass over time to reduce the amount of organic material depositing into the lake. Areas that have been treated with torpedo grass are encouraged to replant with beneficial native plants.

Photo of Reduce Leaf Blades Making Treatment Difficult:

The secchi (water clarity) was 5.3 feet in a depth of 14.6 feet. The historic secchi readings, from February 1982 to present, including 112 samples, has been 1 to 10.5 feet. This information and much more is available on the Seminole County Wateratlas at:

<http://www.seminole.wateratlas.usf.edu/lake/?wbodyatlas=lake&wbodyid=7672>

