Spring Wood Waterway 2009-2010

October 9, 2009. As noted prior, the harvester will temporarily create an access path for navigation but will not be removing all of the plant material in the canal. To do so would not be financially feasible, as the cost to haul and dispose of the material would be in the tens of thousands of dollars.

The next several weeks will consist of evaluating the re-growth of hydrilla and establishing best time to treat. Treatment is expected to commence within the next 4-6 weeks. A plant test will be obtained, this evaluates any resistance hydrilla has to the product; Sonar (active ingredient fluridone).

Monthly herbicide treatments will continue at the end of this month; thus far has been effective on the target species including torpedo grass and cattails. Homeowners are encouraged to remove any dead/dieback of the plant over time to reduce the amount of organic material depositing into the canal. This material could not be harvested mechanically due to cost.

Areas that have been treated with torpedo grass are encouraged to replant with beneficial native plants; since we are nearing the slowing period of aquatic plant growth; spring time would be the best time to replant. Seminole County Lake Management Programs (LMP) along with WAV (Watershed Action Volunteers) would like to hold a Shoreline Restoration Workshop in April or May for your waterway. This is the same program that Spring Lake is involved with (and is having an event this Saturday, Oct 10th meeting at Spring Valley Pavilion at 9am). Liaison members are working with LMP for coordination of a date. Once establish, it is highly encouraged to participate and learn on how to have a beneficial, stabilizing shoreline for your waterway.

On **12 January 2010**, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Thomas Calhoun (Seminole County Assistant Scientist & Dean G Barber (SC Consultant) surveyed the aquatic plants in the Springwood Waterway. As previously observed the invasive exotic Hydrilla continues to be the canal's dominant aquatic plant, observed throughout the canal and coming up to 1' from the surface. Hydrilla was followed by the native Nitella (Stonewort) and is starting to compete with Hydrilla for space towards the entrance of the canal. Some other native submersed aquatic plants include; lemon bacopa (Bacopa carolinia) and Eastern purple bladderwort (Utricularia purpurea). Monthly herbicide treatments have thus far has been effective on the target species including torpedo grass and cattails.
The Seminole County also inspected Spring Wood Lake for Hydrilla. Hydrilla was found to a depth of 19 feet. Which is deeper than the previous inspection of 15 feet but is not topped out to the surface as was previously. Secchi reading (water clarity) was 21.2 ft.

Also reiterating...we have just commenced work (treating banks, harvesting, etc) and there is still quite a bit of work ahead of us!

March 19, 2010. We sampled and inspected the canal on Tuesday of which recent rains prompted to move up the scheduled 2nd treatment by a week. The precautionary irrigation (with lake water only) advisory **is** still in effect.

21 days after Wednesday's treatment- we will again take samples to determine product concentration in the water and update you on hydrilla impact and irrigation advisory.

The entire hydrilla treatment plan was based on split treatments to maintain product in the lake for longer period of time; hence 2nd treatment. As is, the visible affects are the white tips on the plant (photo attached).

This tip is actually new hydrilla growth (off the main stem) losing its food storage supply (carbohydrates) and dying off (photo attached). During our inspections, this was important to observe. These new growth tips will soon fall off the main stem of the plant which will then begin to decay. The zone at which the canal mixes with the lake may require a contact herbicide as the exchange (mixing) of waters may be too great to keep the product on the plants effectively treating the hydrilla. We are closely monitoring this as we progress.

Please feel free to contact me if you have any questions.

April 14, 2010. We inspected the canal today and took water samples of which have been sent to the lab for testing. We will receive these results within 48hrs of when the lab receives the samples of which we will advise if the precautionary irrigation with treated lake water has been lifted. Should it be lifted we will send notice via email and r911 calling system.

Survey indicates treatment is progressing well, in some areas the hydrilla has dropped out allowing for beneficial natives to flourish (photo attached). Migrating towards the end of canal, hydrilla is breaking down and covered with a substrate algae due to this process. As in photo attached, all indications are present that the hydrilla is impacted from the treatment (white tips) of which some are breaking off due to death. The lilies towards end of canal are also showing uptake of the product (photo attached). Although impacted these will recover overtime.

The zone at which the canal mixes with the lake may require a contact herbicide as the exchange (mixing) of waters may be too great to keep the product on the plants effectively treating the hydrilla. We continue to monitor this area as a contact herbicide may be necessary as follow up. We are monitoring this as we progress

Homeowners are encouraged to remove any dead/dieback of the treated torpedo grass over time to reduce the amount of organic material depositing into the canal. Areas that have been treated with torpedo grass are encouraged to replant with beneficial native plants. Seminole County Lake Management Programs (LMP) along with WAV (Watershed Action Volunteers) are working with your liaison members to hold a Shoreline Restoration Workshop for your waterway once they hydrilla treatments are complete (likely in the Fall). Once establish, it is highly encouraged to participate and learn on how to have a beneficial, stabilizing shoreline for your waterway!!

On **23 July 2010**, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Thomas Calhoun (Assistant Scientist) and Carol Watrel (Seminole County MSBU Program) surveyed the aquatic plants in Spring Wood Waterway. Hydrilla *(Hydrilla verticillata)* has been impacted by the March treatment and was not found during the inspection. Some of the submersed aquatic

vegetation (SAV) that we found during the inspection included; lemon bacopa (*Bacopa caroliniana*), muskgrass (*Chara spp*.) and stonewort (*Nitella spp*.). Currently there are large mats of organic material and vegetation that are floating up to the top of the waterway. These are caused by microorganisms that are releasing gases as they feed on the detritus of the dead plant material from the herbicide treatment and are commonly referred to as burps. They are common in these types of systems and could grow to impede navigation. At which time a mechanical harvester would be used to remove these burps. If possible raking these burps to the side of the canal can be beneficial. Other areas of concern include the expansion of stonewort at the mouth of the canal system. Stonewort cannot be treated by herbicides and if begins to impede navigation would be harvested mechanically. New grass carp barriers have been constructed and the waterway is planned to have a stocking rate of 2 fish per acre but is still waiting on the FWC permit to proceed with the stocking. We are optimistic that with the stocking rate of triploid grass carp and the native submersed aquatic vegetation (SAV) we will continue to help keep the hydrilla at bay. The Seminole county contractor continues the treatment of the invasive shoreline plants. We will continue to monitor the invasive plants monthly. An October 9th planting event is scheduled to take place by waterway residents, Seminole County staff and WAV volunteers. We hope to see many of the waterway residents there.

On **27 August 2010**, Gloria Eby (Seminole County [SC] Senior Environmental Scientist) and Thomas Calhoun (Assistant Scientist) surveyed the aquatic plants in Spring Wood Waterway. Hydrilla *(Hydrilla verticillata)* again was not found during the inspection. Some of the submersed aquatic vegetation (SAV) that we found during the inspection included; lemon bacopa (*Bacopa caroliniana*), muskgrass (*Chara spp*.), eastern purple bladderwort (*Utricularia purpurea*) and stonewort (*Nitella spp*.). Currently there are large mats of organic material and vegetation that are floating up to the top of the waterway. These are caused by microorganisms that are releasing gases as they feed on the detritus of the dead plant material from the herbicide treatment and are commonly referred to as burps. They are common in these types of systems and could grow to impede navigation. At which time a mechanical harvester would be used to remove these burps. These Burps seem to have receded some from the last inspection. If possible raking these burps to the side of the canal can be beneficial. Other areas of concern include the expansion of stonewort at the mouth of the canal system. Stonewort cannot be treated by herbicides and if begins to impede navigation would be harvested mechanically. FWC permit to stock Springwood, Destiny and Springwood Waterway has come and currently 80 fish are on order to stock into the system. We are optimistic that with the stocking rate of triploid grass carp and the native submersed aquatic vegetation (SAV) we will continue to help keep the hydrilla at bay. The Seminole county contractor continues the treatment of the invasive shoreline plants. We will continue to monitor the invasive plants monthly. An October 9th planting event is scheduled to take place by waterway residents, Seminole County staff and WAV volunteers. We hope to see many of the waterway residents there.

On **21 September 2010**, Seminole County Lake Management Program (SCLMP) staff: Thomas Calhoun, Dean G Barber and Natalae Wilson-Almeter, Seminole Education, Restoration & Volunteer Program Coordinator (SERV) surveyed the aquatic plants in the **Springwood Waterway**. Native submersed aquatic vegetation (SAV) included: lemon bacopa to a depth of 2 feet, road grass to 3 feet, stonewort to 4 feet and purple bladderwort to 3 feet. The invasive

exotic SAV hydrilla was observed to a depth of 3 feet, but sparsely, fragmented, with no new growth tips and only at the entrance of the waterway.

Stonewort was the dominant aquatic plant, covering over 60% of the bottom, reaching the surface or just below the surface in 15% of the area observed within the first 2/3 of the waterway. The plant is covering the bottom in thick communities that are 6 inches to 2 feet thick, not allowing any other plant to establish within these clusters. The next most abundant was purple bladderwort, however significantly less than stonewort. From there to the end of the waterbody, no SAV was observed. Within this area, the bottom was covered with leaves, limbs and filamentous algae.

Torpedo grass has been impacted throughout this system 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 canal. Areas that have been treated with torpedo grass are encouraged to replant with beneficial native plants.

Photo of Reduce Leaf Blades Making Treatment Difficult:

Survey included documenting the proposed sites for the waterway volunteer planting event while determining the species and numbers of aquatic plants for the selected sites.

Photo of Purple Bladderwort:

Recommendations for waterbodies:

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. **Do** 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 lake! Contact