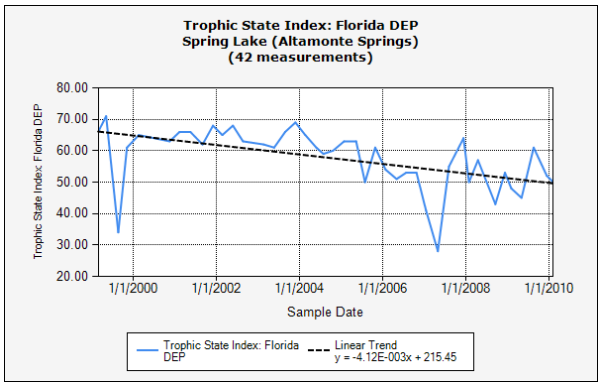
Coping with Eelgrass…The Ups and Downs of Lakeside Living with this Aquatic Plant

Over the course of time, many observable changes are measured within a lake, especially an urbanized one such as Spring Lake. This 84 acre lake, located in the heart of Altamonte Springs, Seminole County, has seen dramatic changes over the years. Not so long ago it was a pea green, highly polluted lake with nutrient Trophic State Index (TSI) scores in the mid-60's and water clarity readings (Secchi disc) of a mere six inches, Spring Lake is now a thriving waterbody, home to many sport fisheries and wildlife since the community adopted a special non-ad valorem assessment specifically for aquatic weed management (hydrilla) via the Municipal Service Benefit Unit (MSBU) Program (which provides funding for lake management services and needs) and became actively involved in the restoration and protection of the lake.



In 2007, this special assessment was implemented with 88% of the community's support whereby Seminole County's Lake Management Program (SCLMP) provides the technical resources to execute the specific lake activities to meet the needs of the established MSBU, lakefront residents and state permitting requirements.

Spring Lake's Aquatic Vegetation History

Prior to 2004, with the poor water quality of Spring Lake, submersed aquatic vegetation (SAV) was not present within the lake. This was due, it part, to water clarity. The clarity of a lake is greatly affected by its nutrient content. The higher the nutrients, such as nitrogen and phosphorous, the higher the algae populations will be within the lake. Algae present within the water-column in dense colonies essentially shades the water color "green", reducing clarity and sunlight from penetrating to the lake bottom. Sunlight is required for aquatic plant growth by a process known as photosynthesis. Spring Lake was bare of SAV, "pea green" in color, and had an organic muck-laden lake bottom due to the accumulation of dead algae cells and sedimentation from the surrounding watershed loading.

So what changed the lake? In 2004, Central Florida had an unprecedented tropical storm season: first Hurricane Charley, then Ivan, Frances, and Jeanne. Mother Nature's fury created a scouring affect for the lake that flushed the system of its organic detrital build up that had accumulated over the years. Spring Lake's sediment shifted from an unconsolidated organic muck layer to a more beneficial sandy bottom.

It is suspected with this great event, the sediment stirring of the lake bottom created the onset for hydrilla (a highly invasive submersed aquatic plant) to grow and several native SAVs to establish and expand within the lake. By June of 2006, 90% of Spring Lake was topped out with hydrilla. In September 2006, an application for an aquatic weed control MSBU was submitted to Seminole County primarily for hydrilla.

In February 2007, SCLMP provided funding for the initial whole lake hydrilla treatment in excess of $24,000.00. The treatment was successful in that no large scale treatments have been required for Spring Lake since then, thanks to an integrated lake management plan, i.e. the use of chemical (herbicides) in conjunction with biological (hydrilla-eating grass carp fish) control methods. Subsequent to these successes, we have observed the vast expansion of eelgrass lake-wide to an approximate depth of eight feet. Eelgrass, being a native plant, has provided the lake with excellent fisheries habitat and nutrient uptake capabilities leading to greatly improved water quality (TSI) and water clarity scores. Once labeled an impaired (or polluted lake), Spring Lake is no longer considered impaired/polluted based upon its nutrient concentrations specified by the state.

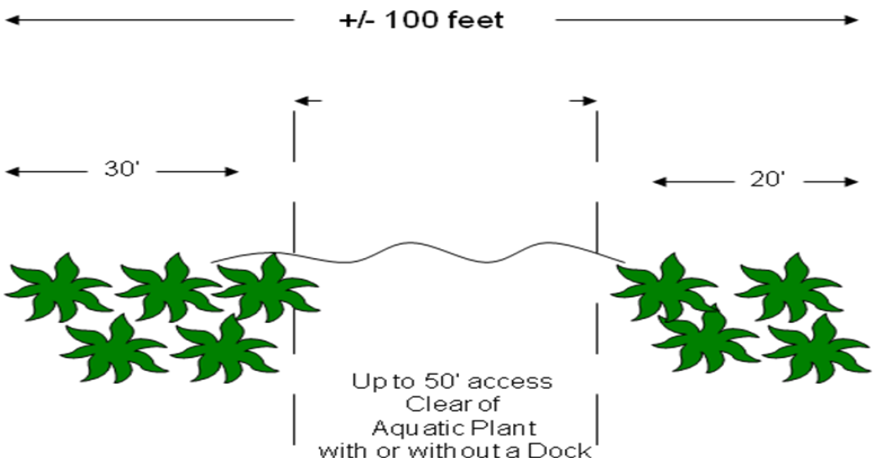
That's Great But Have You Seen My Shoreline?

Undoubtedly, the negative aspects of living with eelgrass are seen on any given day. Piles of leaf blades, and if it's windy enough- uprooted plants, wash ashore to those luckiest; depending which way the wind blows! Unfortunately this is the proverbial "catch 22" with eelgrass. Being a Florida beneficial native aquatic plant, it is protected by the State's aquatic plant management statutes regulated by the Florida Fish and Wildlife Conservation Commission (FWC). Because FWC's mission is to maintain natives for the protection of habitat, as lake managers we are limited in the amount of eelgrass removal/maintenance that can occur within a given lake. Currently, the County's FWC Aquatic Plant Management permit allows for up to two acres of eelgrass to be chemically treated to allow for recreational access only. These access corridor areas (funded by the MSBU) can be noted around the lake that allows for boat passage from end of dock to open water. In order to increase eelgrass treatment areas, FWC would have to grant us approval to do so. Keeping in mind that the cost associated with treating eelgrass is substantial; treating a five-acre block would cost approximately $4,700 to $9,300 per treatment, depending on water depth, just for herbicide product alone. Ongoing quarterly eelgrass treatment costs could range (depending on water depth at time of treatment) from $18,700 to $37,500, not including labor fees to apply the product.

Suggestions for Lakeside Living with Eelgrass…A Balanced Approach

As previously suggested to several lakefront homeowners, what you can do is apply for or amend (if you already have one) your free FWC aquatic plant permit to allow for eelgrass removal for direct lakefront access. You are allowed this access corridor by state statute for swimming/recreation purposes of up to 50 feet or 50% of your lake frontage, whichever is less and in most cases, for Spring Lake, it is limited to 50 feet. Below is an example of a typical 100 foot lakefront parcel illustrating a permitted access corridor for recreation.
By retaining some portion of your shoreline with native aquatic plants and permitted portions that are managed (cleared), this provides a balanced approach for lakeside living.

Please note that the County is neither the permitting agency nor the funding source (via MSBU) for this type of activity. This would have to be individually achieved through your free aquatic plant permit by contacting your FWC regional biologist at 407-858-6170 or by e-mail at amy.giannotti@myfwc.com.



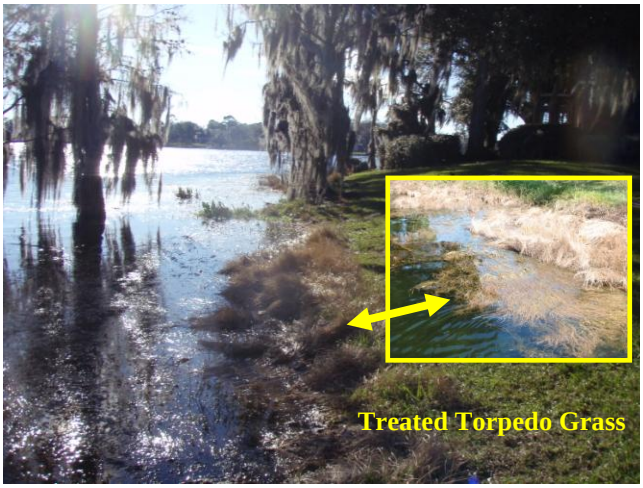
Shoreline Lake Management as a Whole

In 2010, a survey ranking the priority of activities for the MSBU was distributed to lakefront residents. Residents prioritized their concerns and the results were ranked as such:
#1- Eelgrass
#2- Torpedo Grass
#3- Water Quality Issues

Several comments were received specific to Spring Lake's management plan along private shorelines, which suggested that distributing additional information and explanation regarding lake and shoreline management was needed. As the level of nutrients entering a lake are a significant factor to its water quality and plant life, and these nutrients enter from the land abutting the lake, each resident living on property along the lake is viewed as a key influencer on the successes of lake management and water quality.

The ownership and responsibility for Spring Lake belongs primarily (and collectively) to the owners of the property that surrounds the lake. When you became a resident on your lake, you assumed an obligation to share with other lakefront owners the responsibility of good management of your waterbody. You and your neighbors are the lake stewards, not of just your own waterfront, but collectively the lake as a whole.

One concept of the whole lake management plan is to reduce invasive exotic plants (such as torpedo grass) creating a more beneficial shoreline for Spring Lake. Monthly treatments are conducted (via the MSBU) to treat mostly torpedo grass lake-wide; however, homeowners should follow up these treatments with removal of the treated plants in their affected area and replanting with natives or allowing for natives to establish. By removing these invasive plants, you are helping to prevent them from returning, reducing the nutrient loading that invasive plants deposit into the lake (plant biomass), and reducing the overall cost of long term maintenance.



Native aquatic plants are a key factor in reducing nutrients contained in run-off coming from your yard into the lake, preventing erosion of your shoreline, providing habitat for fish and wildlife, and aids in keeping invasive plants (such as torpedo grass and hydrilla) from establishing/re-establishing due to competition for space. The better you keep the invasive plants out of your waterfront, the more your native plants will establish and reduce the time you that you will have to spend managing the site. SCLMP will be glad to schedule a site visit to help you establish your individual management plan needs in conjunction with the MSBU funded efforts.

A shoreline lake management plan should consist of the following step-by-step actions with the designated roles: identifying the target plant- torpedo grass (SCLMP/homeowner), treating the torpedo grass (funding provided through MSBU), removing treated/untreated torpedo grass (homeowner), maintaining the site with monthly herbicide treatment efforts (funding provided through MSBU) and replanting with beneficial native plants if needed (homeowner/SCLMP workshops). Our sponsored weekend workshops have provided residents with guidance in accomplishing these steps resulting in shoreline improvements which have been documented lake-wide. We encourage you to continue to participate and volunteer for these events in the future.
In the case for eelgrass, once properly permitted and within your access corridor, follow the same steps as above and as allowable on your FWC aquatic plant permit by targeting and removing the plant (by mechanical, hand or chemical methods) should you desire a recreational access corridor along your shoreline.

<u>If you have additional questions/concerns please contact the following:</u>

Seminole County Lake Management Program- Gloria Eby 407-665-2439 or geby@seminolecountyfl.gov

Seminole County MSBU Program- Carol Watral 407-665-7164 or cwatral@seminolecountyfl.gov

Florida Fish and Wildlife Conservation Commission- Free Aquatic Plant Permit-
Amy Giannotti 407-858-6170 or amy.giannotti@myfwc.com

Spring Lake Advisory Board Member- Bobbi Vogel at bvogel529@embarqmail.com (for input and suggestions)