

On **23 September 2009**, Gloria Eby (Seminole County [SC] Senior Scientist), Dean G Barber (SC Consultant) and Thomas Calhoun (SC Assistant Scientist) surveyed the aquatic plants in **Bear Lake**. The dominant aquatic plants observed were stonewort (*Nitella spp*) and eelgrass (*Vallisneria americana*), which were most prevalent in the shallower water, with the stonewort extending to 8.5 ft. and the eelgrass to 10.5-12 ft. Also present in this area were muskgrass (*Chara spp.*), southern naiad (*Najas guadalupensis*), and some sago pondweed (*Potamogeton pectinatus*), with the southern naiad extending to 10-12 feet. Stonewort, southern naiad, eelgrass and sago pondweed was observed in depths of 12-14 feet, but not as frequently observed as previously stated in depths of 10 ft or less. In these deeper depths the eelgrass was quite long, sometimes over 8 ft long strands. Hydrilla (*Hydrilla verticillata*) was infrequently observed in shallow water, however, it was a monoculture from the depth of 17-21 ft. One weed hook sample revealed a large dense population from a depth of 20 ft with plant strands that were ~15 ft long. With the previously mentioned native submersed aquatic vegetation (SAV) (stonewort, eelgrass, southern naiad and sago pondweed) also observed were: babytears (*Micranthemum glomeratum*) and parrot feather (*Myriophyllum aquaticum*). All of these SAV are the primary reason hydrilla has not established in the waters less than 15 ft. Without these natives hydrilla would extend throughout the lake to depths to 21 feet and possibly greater. Secchi reading (water clarity) was 9.7ft on 8/20/09 down from 13.9ft taken on 5/5/09.

The dominant emergent aquatic plant was torpedo grass (*Panicum repens*) which was observed adjacent to most waterfronts. This invasive exotic, like hydrilla, will continue to expand into any available habitat. This is also true for water hyacinth (*Eichhornia crassipes*), which is the most prevalent aquatic plant in the canal off of Linneal Beach Drive. It was also observed at multiple locations around the lake, more than ever noted before. The canal also contained two species of the exotic papyrus (*Cyperus papyrus*) and dwarf papyrus (*Cyperus papyrus* or *C. isocladius*), both are expanding within the canal and was observed in the lake.

On May 14, 2009, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Dean G Barber (SC Consultant), Ryan Hamm (FWC Grass Carp Biologist) and Matt Rayl (Aquatic Ecosystems, Inc.), surveyed the aquatic plants in Bear Lake. Although on both the January 27, 2009 and November 18, 2008 surveys hydrilla (*Hydrilla verticillata*) and eelgrass (*Vallisneria americana*) were observed to 12 foot water depth, no hydrilla was found on this survey. Eelgrass was by far the most abundant submersed aquatic vegetation (SAV). Also during the January survey, less hydrilla was observed than during the November survey. Other SAV observed included: southern naiad (*Najas guadalupensis*), baby tears (*Micranthemum glomeratum*), stonewort (*Nitella spp*) and road grass (*Eleocharis baldwinii*). All, except the eelgrass, were reduced from the previous survey, especially the southern naiad, which was significantly reduced. Areas that previously had several acres of southern naiad, either the plant was not present or significantly reduced.

The invasive floating exotic, water hyacinth (*Eichhornia crassipes*) was still present in the canal off of Linneal Beach Drive. Other exotic aquatic plants in the canal include: papyrus (*Cyperus papyrus*) and dwarf papyrus (*Cyperus prolifer*). The most abundant emergent exotic aquatic plant was torpedo grass (*Panicum repens*), which was present on a majority of waterfront resident's shores.

During the survey we observed three people in the water using a submersed pump system to remove SAV, mostly the native plant, eelgrass. They told us they had been hired by the lakefront owner to remove the submersed vegetation associated to his waterfront. This is a violation of the FWC requirements for an aquatic plant control permit. Such a permit is required to be on site at the time any aquatic vegetation removal. Additionally, their activity was causing a significant turbidity violation by not containing the change in water clarity on the work site with a turbidity curtain. We provided FWC Aquatic Plant Permitting Biologist, Amy Giannotti, phone #: 407 275 4004. They agreed to discontinue work and confirm requirements.

Secchi (water clarity) was 13.6 feet at a depth of 21 feet. Previous Seminole County Watershed Atlas secchi reading was 9.3 feet, December 17, 2008 with a historic range of 4.9 feet to 36 feet from 258 reading taken from 6/7/73 to 12/17/2008:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7514&wbodyatlas=lake>