

On May 24, 2009, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Marianne Pluchino (SC Senior Environmental Scientist), & Dean G Barber (SC Consultant), surveyed the aquatic plants and conducted a Lake Vegetation Index (LVI) of Lake Howell. Lake Howell is 391 surface acres with a mean depth of 5 feet, maximum depth of 8 feet, located in the Howell Creek watershed. The Secchi (water quality) was 3.0 ft in a depth of 7 ft. The range of this reading from 1973-2009, 236 samples, has been 0.1 to 24 ft. The Water Quality Index (Trophic State) was 57 (Good) taken 3/11/09. The water quality range for 146 samples taken from 1982 to 2009 has been 36 (Good) to 84 (Poor). All this information is available on the Seminole County Water Atlas <http://www.seminole.wateratlas.usf.edu>.

In aquatic plants, Lake Howell had a fair diversity of shoreline plants (ditch bank and emergent). However, several invasive exotic plants and a tree were observed. Para grass (*Brachiaria mutica*) was present at all the four LVI sites. Torpedo grass (*Panicum repens*) was present at two of the four LVI sites. Other exotics noted included wild taro (*Colocasia esculenta*) which was observed on all 4 LVI sites surveyed. The two major exotic floating aquatic plants, water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratioides*) were seen on 3 LVI sites. On the western LVI site, water hyacinth was the most abundant aquatic plant. The exotic tree noted was Chinese tallow (*Sapium sebiferum*).

However, native aquatic grasses: American cupscale grass (*Sacciolepis striata*) and maidencane grass (*Panicum hemitomom*) were present at several sites. Also native water lilies; spatterdock (*Nuphar spp.*) and fragrant water lily (*Nymphaea odorata*) were present. It is possible that these native grasses and lilies could be used in a more extensive lake revegetation project. No submersed aquatic plants were observed, however, SC has placed two plant enclosures at two lake locations. These each contain eelgrass (*Vallisneria americana*), a native submersed aquatic plant. These enclosed plants are protected from both fish, and turtles, and are doing well.

On February 17, 2009, Dean G Barber (SC Consultant), Carol Watral (SC MSBU coordinator) and myself surveyed the aquatic plants in Lake Howell. Aquatic plants (emergent, floating and submersed) represent less than 2 percent of the lake's surface. The Florida Fish and Wildlife Conservation Commission recommends that lake aquatic plant coverage, especially submersed aquatic vegetation (SAV), covers over 30 percent of the lake bottom for stable fisheries and best management practices for a lake. The most observed aquatic plant was the invasive emergent aquatic grass, torpedo grass (*Panicum repens*) and the lily, spatterdock (*Nuphar luteum*).

The only submersed aquatic plant seen outside of the six plant enclosures installed was baby tears (*Micranthemum glomeratum*). Of the six plastic mesh enclosures placed at the two lake sites, four were planted with eelgrass (*Vallisneria americana*) and two with lemon bacopa (*Bacopa caroliniana*). Within each enclosure, the respective plant was well established and dense. The eelgrass in the four enclosures was so dense that the plant was packed up against the side mesh however no eelgrass was observed growing outside of the enclosure. In fact, when we approached one of the eelgrass enclosure a turtle (3 ½ in. diameter shell) was on the side of cage, apparently trying to get to the eelgrass. The population of bacopa, that had been planted outside of the enclosure, was reduced by 30-50 percent from when it was planted. Less than 0.2 acres of water hyacinth (*Eichhornia crassipes*) was observed on the west side of the lake, most of this

floating exotic was in or adjacent to Cassel Creek (photo attached). Secchi (water clarity) was 1.0 meters (3.4 feet).
Have a great weekend!