

On **23 September 2009**, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), & Dean G Barber (SC Consultant) & Thomas Calhoun (SC Assistant Scientist), surveyed the aquatic plants in **Cub Lake**. Six of the 7 native submersed aquatic vegetation (SAV) noted in the May 2009 survey were observed: eelgrass (*Vallisneria americana*), 2 bladderworts (*Utricularia radiata* and *U. gibba*), water hyssop (*Bacopa caroliniana*), southern naiad (*Najas guadalupensis*), road grass (*Eleocharis baldwinii*) and stonewort (*Nitella* spp.). Muskgrass (*Chara* spp.) noted in the previous survey was not observed in this survey, however another native, coontail (*Ceratophyllum demersum*) was observed on this survey. Stonewort was the dominant aquatic plant observed to a depth of 7 ft. The next most abundance aquatic plant was the native eelgrass, also seen to 7 ft. The invasive aquatic plants included torpedo grass (*Panicum repens*), present on most lakefront residents, wild taro, also called elephant ear (*Colocasia esculenta*) and papyrus grass (*Cyperus papyrus*) also observed in Bear Lake. Two invasive trees; Chinese tallow (*Sapium sebiferum*) and Brazilian pepper (*Schinus terebinthifolius*) were observed. Two grass carp were seen. The secchi reading (water clarity) was 8.6 ft in 11.4 ft water depth. May 2009 reading was 8.9 ft in a depth of 18 ft.

On May 3, 2009, Gloria Eby (Seminole County [SC] Senior Environmental Scientist), Marianne Pluchino (SC Senior Environmental Scientist), & Dean G Barber (SC Consultant), surveyed the aquatic and wetland plants and trees in addition to conducting a Lake Vegetation Index (LVI) of Cub Lake. A LVI identifies all of these species in four of 12 grouped sectors for a waterbody. Cub Lake is 14 surface acres with a mean depth of 7 feet, maximum depth of 17 feet, and is located in the Little Wekiva watershed. The Secchi (water clarity) was 8.9 ft in a depth of 18 ft. The range of this reading from 2/1999 – 2/2009, 70 samples, has been 3 to 15 ft. Water level was higher during this survey than when the bathymetric map was recorded, therefore the maximum depth of 18 feet during the survey. The Water Quality Index (Trophic State) was 21(Good) taken 2/28/2009. The range of these Trophic State readings for 80 samples taken from 2/1999 to 2/2009 has been 19 (Good) to 52 (Good). All this information and much more is available on the Seminole County Water Atlas <http://www.seminole.wateratlas.usf.edu>. Cub Lake had a good diversity of aquatic and wetland plants and trees. The lake had 48 of these species, 34 were aquatic plant species, including 7 submersed aquatic vegetation (SAV), and 4 species of non-native, invasive plants. All the SAV were native plants and included eelgrass (*Vallisneria Americana*), 2 bladderworts (*Utricularia inflata* and *U. gibba*), Muskgrass (*Chara spp.*), water hyssop (*Bacopa caroliniana*), southern naiad (*Najas guadalupensis*), road grass (*Eleocharis baldwinii*) and stonewort (*nitella spp.*). Eelgrass was the dominant plant of these species in 3 of the four surveyed LVI sectors. The invasive aquatic plants included torpedo grass (*Panicum repens*), which was present throughout the lake, and wild taro, also called elephant ear (*Colocasia esculenta*). Two invasive trees; Chinese tallow (*Sapium sebiferum*) and Brazilian pepper (*Schinus terebinthifolius*) were observed. Fortunately, none of the invasive species were the dominant plant in any of the four LVI lake sectors surveyed, however, torpedo grass shared dominance with fragrant water lily (*Nymphaea odorata*) in one sector. Another invasive, air potato (*Dioscorca bulbifera*) was observed in one of the four LVI sectors surveyed.

Cub Lake 12/17/2008

Thanks again for allowing us access to survey Cub Lake, was quite a treat to have a trolling motor!!! Below please find our observations. We would like to work more closely with the

folks around Cub lake, emphasizing on native shoreline plantings and offering workshops (we usually do this on Saturdays). Please let me know if you are interested in gathering your lake community for several Saturday educational workshops. I believe we can have a more functional shoreline within Cub Lake, with the help and determination of the residents.

We do several workshops for various lakes for various needs of which Mirror, Spring, Myrtle and others are a part of. These workshops and educational meetings are successful due largely in part because of the resident-based turn out. These lake communities are very active and work together to protect the habitat and water quality and we do feel that Cub Lake can achieve the same goal!

Observations:

Cub Lake's aquatic plant community was surveyed on December 17, 2008. Cub Lake, in the Little Wekiva watershed, is a 14 acre waterbody with a maximum depth of 17 feet and a mean depth of 7 feet. The average secchi depth, a method of obtaining water clarity, has been 9.4 feet from 1982 to present. The secchi reading during this survey was 12.8 feet. The lake elevation reading was 100.1 feet. This is the height of water above mean sea level.

Cub lake is abundant with aquatic plants, especially native submersed aquatic vegetation (SAV) which included eelgrass (*Vallisneria americana*), southern naiad (*Najas guadalupensis*), bladderwort (*Utricularia sp.*) water hyssop (*bacopa caroliniana*) and *Nitella spp* a macroalgae (photo attached in Cub Lake). Eelgrass and nitella are the most abundant, with the eelgrass generally in the shallower water to a depth of 10 feet and the nitella from depths of 5 feet to 12 feet. Southern naiad was mixed in between eelgrass and nitella, and was observed to be greatly reduced likely from the 2006 carp stocking as intended. No exotic SAV was observed, such as hydrilla, which has previously been observed in Cub Lake.

Several exotic emergent aquatic plants were observed: torpedo grass (*Panicum repens*), papyrus flatsedge (*Cyperus papyrus*), and elephant ear (*Colocasia esculenta*). Torpedo grass was the most abundant emergent aquatic plant. The total aquatic plant community of emergent and SAV make up about 60% of the acreage of the lake.

Additionally, we observed four triploid grass carp fish during our survey.

Please let us know if you are interested in the workshop(s) mentioned above. We can discuss the logistics in detail. Mainly, we can provide plant material and outside volunteers...WAV (Watershed Action Volunteers). All we need from you is coordination in advertising these events, gathering Cub Lake residents together and some elbow grease for these native planting days.