Myrtle 2009-2010

On **13 January 2010**, Gloria Eby (Seminole County [SC] Environmental Scientist), Dean G Barber (SC Consultant) & Thomas Calhoun (SC Assistant Biologist) surveyed Lake Myrtle's south pool, middle marsh and tributaries. In the south pool (restoration area), the wildlife island plantings are doing well and minimal invasives has re-established since our last removal event. The plants on the islands did have some damage from recent freezing temperatures and should recover come springtime. Southern naiad (*Najas quadalupensis*) was the dominant aquatic plant in the south pool and is established to a depth of 3.5 feet covering much of this pool. The plant was at or near the surface, impeding navigation throughout the pool. The only other submersed aquatic vegetation (SAV) found in the south pool was road grass (*Eleocharis baldwinii*), which was seen only adjacent to the shore. Overall, private contractor has done an excellent job in maintaining the restoration zone.

North of the south pool, at the crossroads leading into the large central marsh, hydrilla (*Hydrilla verticillata*) was established from this site throughout the marsh and its tributaries. In the adjacent deep NE pool, hydrilla is established to a depth of 8 feet covering 30% of the pool and is experiencing winter dieback. This total expansion of hydrilla was a significant change for the worst, as hydrilla, an aggressive invasive plant, will continue to expand throughout the lake, becoming the dominant plant, impeding navigation and reducing aquatic plant diversity. Other native submersed aquatic vegetation (SAV) found included: stonewort (*Nitella spp*.), and bladderwort (*Utricularia gibba*). The end of the Highland Drive canal was completely covered with frog's bit (*Limnobium spongia*). This plant looks a lot like water hyacinth (*Eichhornia crassipes*) also a floating plant. Not as invasive as water hyacinth, however, it has expanded significantly over the last several months covering 1/3 of the canal.

Secchi (water clarity) was 3.1 ft in depth of 6 ft in the south pool and 6.8 ft in a depth of 13 ft in the NE deep pool. The water elevation at the time of survey was 45.4 feet.

Recommend:
Treat Frog's Bit
Closely monitor hydrilla and southern naiad with the recent grass carp stockings. May need to spot treat some areas prior Fall 2010 or increase carp stockings.
Continue to expand natives plantings (next county event May 15th).
Work with City of Longwood requesting for maintenance of their parcel.
Utilize community service for invasive removal on main wildlife island (by road) to remove invasive plants along water's edge.

On **18 March 2010**, Seminole County Lake Management Program staff Gloria Eby, Dean G Barber (Consultant), Thomas Calhoun (Assistant Biologist) and lake resident Matt Hobkirk surveyed **Lake Myrtle's** south pool, middle marsh and adjacent tributaries. In the south pool (restoration area) the wildlife island plantings are doing well especially because of the efforts of Matt and other lake residents' maintenance of these sites. With this continued effort, the spring expansion of the islands natives should be significant. Southern naiad continues to be the dominant aquatic plant in the south pool, established to a depth of 3.5 feet covering most of the waterbody. However, it had receded from the surface, from the winter stress and the triploid

grass carp fish. Hopefully, observed native submersed aquatic vegetation (SAV), like babytears, road grass , and bladderwort will expand competing for habitat with the southern naiad.

North of the south pool, at the crossroads leading into the large central marsh, hydrilla has been reported from this site throughout the marsh and its tributaries. During this survey, it was not observed at the crossroads and the populations in both the middle marsh and the adjacent deep NE pool were reduced by winter stress and hopefully the grass carp. In the NE pool, the hydrilla populations was several feet below the surface and reduced to 1/3 of that observed on 13 January 2010. Native SAV found included: babytears, road grass, southern naiad, and two bladderwort (*Utricularia gibba* & *U. inflate*). These species with the emergent aquatic plants and grass carp are key in checking the growth of the hydrilla. The end of the Highland Drive canal contained much less frog's bit after the recent aquatic herbicide treatment.

On **11 May 2010**, Seminole County Lake Management Program staff Gloria Eby, Dean G Barber (Consultant), and Thomas Calhoun (Assistant Biologist) surveyed **Lake Myrtle's** south pool, middle marsh and adjacent tributaries. In the south pool (restoration area) the wildlife island native plants/trees are continuing to expand, very healthy, especially the sand cord-grass, which is established to a height of over 4 feet. The continued resident's maintenance of the islands, helped by the 15 May workday, will keep the island's desirable vegetation expanding. Southern naiad continues to be the dominant aquatic plant in the south pool, observed to a depth of 6 feet, covering most of the south pool. Other observed native submersed aquatic vegetation (SAV), like babytears, road grass, and bladderwort have no expanded enough to compete for habitat with the southern naiad. More drastic measures, like herbicide treatment and increase in triploid grass carp fish must be considered. Cattails and filamentous algae had been recently treated. Regretfully the highly invasive island apple snail's egg clusters were observed in the south pool.
North of the south pool, at the crossroads leading into the large central marsh, hydrilla continues to be observed from this site throughout the marsh and its tributaries. Even though the marsh area is covered with emergent, floating and SAV, hydrilla is establishing throughout it. In the NE pool, the hydrilla has expanded from the 18 March 2010 observation, coming up to near the surface from a depth of 7 feet. Native SAV included: babytears, road grass, bog moss, southern naiad, and two bladderwort (*Utricularia gibba* & *U. inflata*) continue to be present. Bog moss (*Mayaca fluviatilis*), which was previously observed at one locations, was observed at several sites. Hopefully this very desirable SAV will continue to expand. Frogs bit, an invasive native, was still observed in the Highland Drive canal and has expanded into the adjacent waterway. Secchi (water clarity) was 3.9 feet in a depth of 7.1 feet.

On **3 August 2010**, Seminole County Lake Management Program staff Gloria Eby, Dean G Barber, Thomas Calhoun and Kathy Moore (Seminole County MSBU Program) surveyed **Lake Myrtle's** south pool, middle marsh and adjacent tributaries. Throughout the south pool (restoration area) the wildlife islands and shorelines are well established with the native aquatic plants that were planted during the several resident and volunteer work days. The islands need management of invasive species, however, if current contractor would control primrose willow on the islands, it would reduce the additional work/weed eating required. Also suggest controlling elephant grass/napier grass (*Pennisetum purpureum*), which is presently only on the western island. Otherwise, the contractor is doing an excellent job of selective spraying of

invasive species, especially torpedo grass. The submersed native aquatic plant, southern naiad, continues to be the dominant aquatic plant covering the south pool, coming to the surface from a depth of 6 feet. Other native submersed aquatic vegetation (SAV) include; lemon bacopa, road grass, and bladderwort (*Utricularia gibba)*. A few hydrilla fragments were observed for the first time in the south pool. Because of the thick coverage of aquatic plants in the south pool, especially the SAV, it will be difficult for the hydrilla to establish, but this will just slow that progress. Exotic Island apple snail's egg clusters are still observed in the south pool covering the perimeter of this area.

In the large central marsh, hydrilla was more prevalent in the eastern end than the western area. Most of this marsh is covered with both emergent aquatic plants and SAV, primarily stonewort, which is making it difficult for the hydrilla to expand. Bog moss (*Mayaca fluviatilis*) is continuing to establish at new sites and is now present on the eastern end of the marsh. In the deep NE pool, hydrilla is on the surface coming up from a depth of 9 feet, covering the fringe out 25 feet of this deep pool. Also in the NE pool, fragrant water lily is coming to the surface from a depth of 12 feet. Other native SAV within the marsh and surrounding tributaries included: lemon bacopa, road grass, southern naiad, and three bladderwort (*Utricularia gibba, U. purpurea* & *U. inflata*). Because of the grass carp barrier at the entrance to the Highland Drive canal we were unable to survey. The invasive native, frog's bit (*Limnobium spongia*) was not observed.

On **13 October 2010**, Seminole County Lake Management Program staff Marie Lackey, Dean G Barber and Thomas Calhoun surveyed **Lake Myrtle's** south pool, large central marsh and adjacent tributaries. Throughout the south pool (previous plant restoration area) the wildlife islands and shorelines are well established with the native aquatic plants with some invasive plants. The invasive plants, primarily, primrose willow, were recently treated, several needing a re-application. Additionally, one 4 foot exotic Chinese tallow tree needs to be removed from the large center island. The contractor did do an excellent job of selective spraying of invasive species along the shoreline, especially torpedo grass.

The planted emergent native populations are doing outstanding, especially the pickerelweed, duck potato and canna. With the contractors spraying and these natives expanding, they are playing a key role in inhibiting torpedo grass and other invasives from returning and additionally assimilating nutrients, preventing erosion of the shore and providing wildlife habitat.

The submersed native aquatic plant, southern naiad, continues to be the dominant aquatic plant covering the south pool, coming to the surface from a depth of 4 feet, previously 6 feet. Additionally, there is less southern naiad reaching the surface than has been previously observed. Other native submersed aquatic vegetation (SAV) include; lemon bacopa, road grass, large stonewort (Nitella spp.) and two bladderworts (*Utricularia gibba& U. inflata)*. We have been awaiting permit from the state, Florida Fish and Wildlife Conservation Commission (FWC), to treat some of the southern naiad. Once permit is received, we will initiate a treatment and advise you pre-hand of date.

Complete native SAV bottom coverage is key to preventing establishment of the invasive exotic SAV, hydrilla, of which a few hydrilla fragments were observed for the first time in the south pool during the 3 August 2010 survey. None was observed on this survey. No hydrilla was observed in the channel north of the south pool all the way to the large central marsh. Exotic Island apple snail's egg clusters are expanding in the south pool, a significant concern. No egg clusters were observed in the channel north of the south pool barrier.

In the large central marsh, hydrilla continues to be more prevalent in the eastern end than the western area, however, it doesn't seem to be expanding. Most of this marsh is covered with native emergent aquatic plants and SAV, primarily stonewort, which is the dominant aquatic plant, making it difficult for the hydrilla to expand. The native SAV, bog moss (*Mayaca fluviatilis*), is continuing to expand, especially near the eastern end of the marsh. In the deep NE pool, hydrilla is on the surface coming up from a depth of 6 feet, previously 9 feet. Hydrilla is expanding in the waterway adjacent to Canal Pointe Road, such that it is the dominant aquatic plant, established to a depth of 5.5 feet. Other than stonewort, other native SAV observed within the marsh and surrounding tributaries included: lemon bacopa, road grass, southern naiad, and three bladderwort (*Utricularia gibba, U. purpurea* & *U. inflata*). The Highland Drive canal is full of surfaced hydrilla and the invasive native, frog's bit (*Limnobium spongia*).

Secchi (water clarity) reading was 6.6 feet in a depth of 10.9 feet in the deep NE pool. Water elevation was 45.02 feet above sea level.