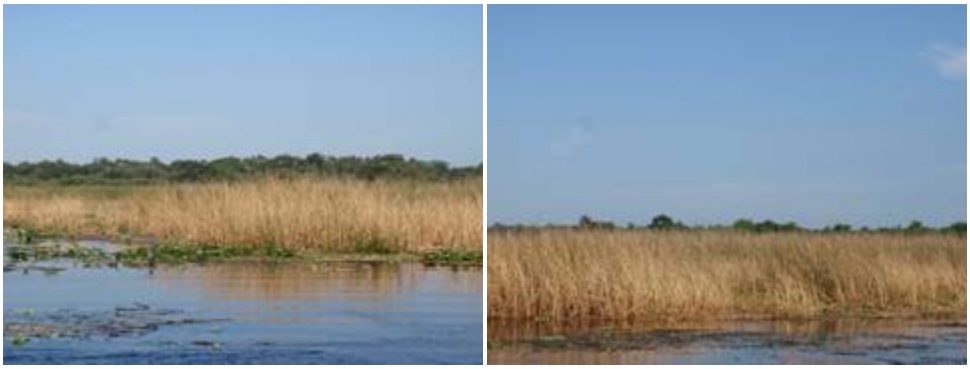
On **1 September 2010,** Seminole County Lake Management Program (SCLMP) personnel Gloria Eby, Dean G Barber and Thomas Calhoun surveyed the aquatic plants in **Lake Monroe.** Only three native SAV were observed: coontail, southern naiad and eelgrass to a depth of 3 feet, and one exotic SAV, hydrilla to a depth of 3 feet. Eelgrass was the dominant SAV throughout the lake. Along the SW shoreline, eelgrass has increase and was observed in dense populations reaching the surface from 3 feet. Hydrilla and eelgrass were present along the southern seawall extending out +1,000 ft, however eelgrass was more prevalent. Along the SE shore to the northeast (almost to the northern boat ramp) little or no SAV was observed. This east-northeast area used to support an extensive population of SAV, which is presently gone. Along the north shore, from the boat ramp west, eelgrass is dominant followed by southern naiad and hydrilla; all to 3 feet. Filamentous algae is the most abundant inshore. The greatest population of SAV is along the western side, with thick populations extending out to the bulrush, with hydrilla being dominant, followed by coontail, then eelgrass. Water hyacinth and water lettuce were recently treated, with less than 5 acres of untreated hyacinth in the lake. There was over 20 acres of untreated water lettuce in the eastern side and 10 acres within the western area. Several acres of primarily lettuce had been treated on the western side within impacted bulrush populations. Although cattails were almost completely removed from the lake during T. S. Fay, they are now returning and expanding, especially on the western and eastern side of the lake.

Photo of impacted bulrush:



On **1 September 2010,** Seminole County Lake Management Program (SCLMP) personnel Gloria Eby, Dean G Barber and Thomas Calhoun surveyed the aquatic plants in a very choppy **Lake Harney**! SAV included: musk grass to a depth of 1.5 feet, road grass, filamentous algae and eelgrass to 2.5 feet. Eelgrass was the dominant SAV, followed by closely by filamentous algae, then musk grass. Eelgrass was the only SAV along the eastern side to a depth of 1.5 feet; a sparse population. Little eelgrass was observed along the north shore. Most of the eelgrass, ~80-90 % of the lake's population, was along the western side of the lake to a depth of 2.5 feet. No eelgrass was observed on the southern shore. Overall the % of SAV in the lake has significantly reduced from previous years. No hydrilla was observed. Emergent aquatic plants populations was also down, however, three square (*Scirpus americanus/pungens)* had increased significantly from previous surveys, being the dominant emergent aquatic plant within the lake.

There were 3 acres of both water hyacinth and water lettuce along the NW side of the lake and about 1 acre of lettuce in the south.

On **8 September 2010,** Seminole County Lake Management Program (SCLMP) personnel Gloria Eby, Dean G Barber and Thomas Calhoun surveyed the aquatic plants in **Lake Jesup**. SAV observed included: coontail to a depth of 1-2 feet, road grass, hydrilla to 1-2 feet, parrot's-feather (*Myriophyllum aquaticum*) few populations in the NE, and eelgrass within FWC enclosures. Coontail was the dominant SAV, established densely in small shallow-water populations, along the northern shore, east and west of the 417 bridge extending out 3 to 5 feet from dominantly phragmites populations. A few plants were observed at the entrance of Howell Creek. Hydrilla was observed adjacent to Overlook Park, a few small populations within the hydrilla treated area east of the 417 Bridge, west of the bridge, and at the South Sanford Avenue boat ramp. Ten acres dominantly water lettuce with some water hyacinth were present in and around the Soldiers Creek entrance. Along the SE shore there were 3 isolated areas of hyacinth. The only torpedo grass seen was at the South Sanford Avenue boat ramp. Cattails that had almost been eliminated during T. S. Fay are starting to come back at locations throughout the lake. FWC-AHRE treated phragmites are showing vibrant new growth throughout the previously treated area.

Overlook Park plantings have sustained a suspicious decline within the restoration area (see before photos at bottom of email string). This significant change has occurred within the last 30 days. In an effort to maintain established native aquatic plants, leftover bareroot material from a previous volunteer planting event was installed at this location**. Please be advised of these plantings to ensure no accidental treatments.**

Photos of plant installed within Jesup AHRES Restoration Sites (north shore):

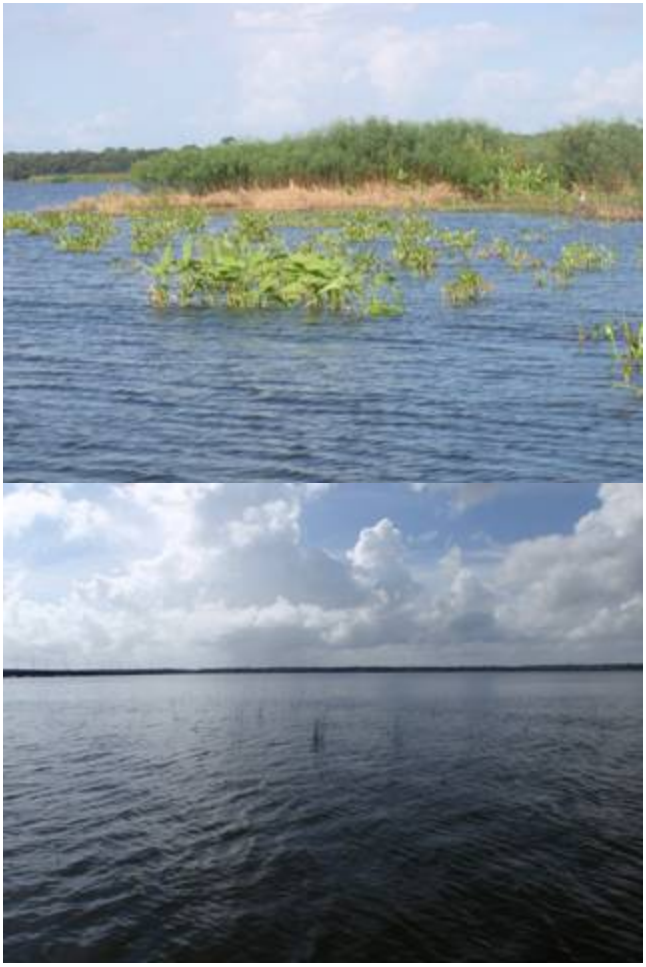
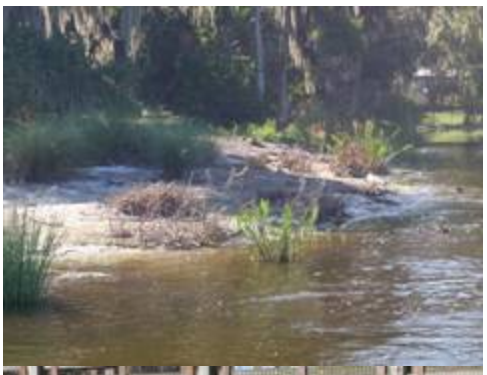


Photo of damaged plants & crew planting at Overlook Park:



On **8 June 2010,** Seminole County Lake Management Program (SCLMP) personnel Gloria Eby, Marianne Pluchino, Dean G Barber, and David Scharr and Kalina Warren of DEP and Kelli Gladding of FWC surveyed the aquatic plants in **Lake Monroe** and conducted a Lake Vegetation Index (LVI). Only three SAV were observed, two natives, coontail and eelgrass, and one an exotic, hydrilla. Both eelgrass and hydrilla were observed to a depth of 2 feet. Overall the percent coverage of both of these species was reduced, but all were most prevalent on the south western and western side of the lake. The southwestern populations were reduced from past surveys. In one sector, hydrilla was co-dominant with phragmites. Although cattails were almost completely removed from the lake during T. S. Fay, they are now starting to come back, especially on the western and eastern side of the lake. Few water hyacinth and water lettuce were observed. Secchi was 2.1 feet in a depth of 5 feet.

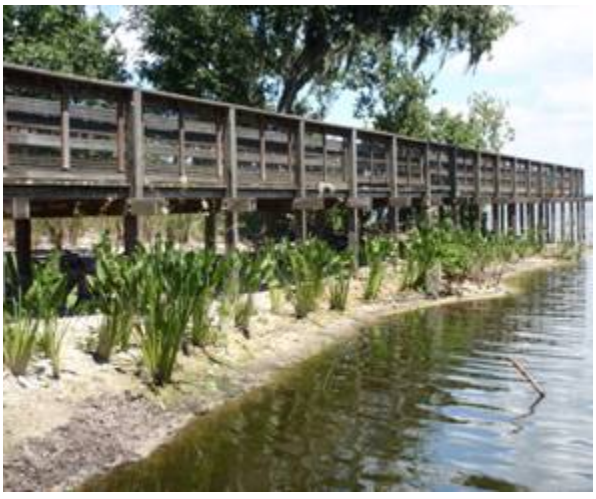
On **9 June 2010,** Seminole County Lake Management Program (SCLMP) personnel Gloria Eby, Marianne Pluchino, Dean G Barber, and David Scharr, Mary Lawrence of DEP and Kelli

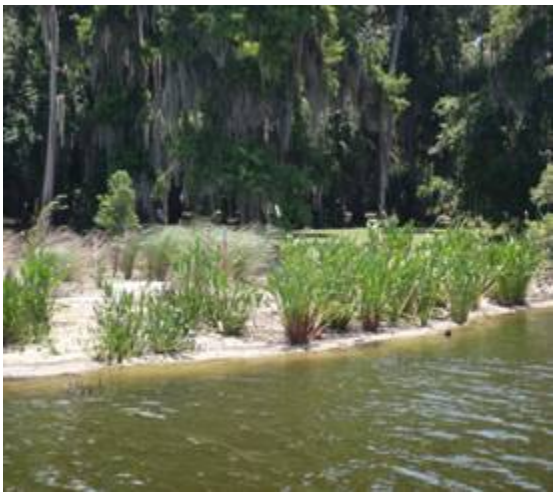
Gladding of FWC surveyed the aquatic plants in **Lake Harney** and conducted a Lake Vegetation Index (LVI). Native submersed aquatic vegetation (SAV) included: road grass, bladderwort (*Utricularia foliosa*) and eelgrass. Eelgrass was dominant in one of the four LVI sectors, however, percent coverage and diversity of SAV was very low, such that most of the bottom was devoid of vegetation. Emergent aquatic plants populations was also minimal, with low percent coverage. Smartweed (*Polygonum hydropiperoides*) and three square (*Scirpus americanus/pungens)* were each dominant in one sector. Invasive exotics included Brazilian pepper, water hyacinth and water lettuce. There was less than an acre each of hyacinth and lettuce. Secchi reading (water clarity) was 1.6 feet in a depth of 2.0 feet, compared to 5.6 feet on 9 February 2010.

On **9 June 2010,** Seminole County Lake Management Program (SCLMP) personnel Gloria Eby, Marianne Pluchino, Dean G Barber, and David Scharr, Mary Lawrence of DEP and Kelli Gladding of FWC surveyed the aquatic plants in **Lake Jesup** and conducted a Lake Vegetation Index (LVI). Hydrilla was observed in three of the four LVI sectors. The previously noted new infestation of hydrilla observed east of the highway 417 bridge is still prevalent in the shallow water to a depth of almost 2 feet. However, coontail is expanding in this same area and was noted at several new locations throughout the lake. The only other native SAV was road grass, located in two of the four LVI sectors. Exotics observed other than hydrilla included: para grass, wild taro or elephant ear, water hyacinth and water lettuce. Less than an acre of both hyacinth and lettuce were present in the lake. However, the northern marsh held several hundred acres. Cattails that had almost been eliminated during T. S. Fay are starting to come back at locations throughout the lake. Secchi was 1.6 feet in a depth of 2.0 feet.

Overlook Park FWC-AHRES and Seminole County Cooperative Restoration Project continues to thrive with natives planted. Duck potato continues to expand, pickerelweed has decreased. This was due partly to the rising waters shortly after planting and manatees observed within the Clifton Springs canal.

Photos of Overlook Park:





Additionally, in July 2007, a baseline vegetation survey was conducted with interagency cooperation (FDEP, FWC, SJRWMD) in efforts to track BMAP projects and in-lake changes response to aquatic vegetation within Lake Jesup. This survey was re-conducted the week of **May 3rd, 2010** for comparative analysis and was presented at the FLMS 2010 Annual Conference. Although numerous types of maps can be generated based upon the GIS database created, attached are several maps illustrating these efforts.

LVI Summary:
Please note the summary for the respective year/lake for SJR tributary lakes.

LAKE	DATE	LVI SCORE	LVI METRIC	AVG TSI
Monroe	6-9-10	41	Healthy	47
Monroe	7-8-09	43	Healthy	62
Monroe	8-12-08	51	Healthy	68
Jesup	6-9-10	54	Healthy	88
Jesup	7-8-09	46	Healthy	77
Jesup	7-23-08	57	Healthy	79
Harney	6-9-10	54	Healthy	48
Harney	8-11-09	58	Healthy	52
Harney	7-23-08	70	Healthy	50

Please find survey results for Lakes Monroe, Jesup and Harney below. Previously observed in Lake Jesup were large stands of beneficial aquatic/wetland plants establishing on the north shore as well as hydrilla infestation. With winter and lower water elevation, this area has been impacted although showing signs of recovery. Unfortunately, cattle are heavily grazing on the newly green leafy natives…pickerelweed (do cattle need an FWC permit? ☺). Photos of this area are attached.

On **9 February 2010** Seminole County (SC) Lake Management program staff Gloria Eby, Dean G Barber and SC WAV Coordinator Natalae Wilson surveyed the aquatic plants in **Lake Harney**. Plant diversity (totaling 16 species) was down significantly, normally over 30 species observed. This in part due to winter reducing biodiversity. As in the previous survey (20 November 2009), no hydrilla was observed with eelgrass being the only native submersed aquatic vegetation (SAV). Historic SAV presence included 6-8 species: coontail, submersed road grass, hydrilla, baby tears, southern naiad, stonewort, several bladderworts and eelgrass. Presently only small new eelgrass plants were sparsely observed on the east and south sides of the lake. Eelgrass, on the western side of the lake, was densely populated from 1-4 feet of depth, making this the dominant SAV in the lake.

Emergent aquatic plants observed were: para grass, knot grass, three square, pickerel weed, bulrush, cattails, cord grass, torpedo grass, common reed, and smartweed. All these plants amounted to less than 100 acres of vegetation; most of these species were impacted by the cold weather. The most abundant was cord grass followed by smartweed.

Invasive floating plants, water hyacinth and water lettuce was also impacted by the weather, but less than an acre of new plants were observed for both species.

Thousands of tilapia and armored catfish that had been dead for over a week were observed at the weed line. Tilapia were primarily between 1/2 to 3 lbs., with armored catfish in all sizes from small up to about 1 ½ lbs. Few other species were observed (highly decayed) and two dead turtles were present. Few dead fish were floating on the water and no new fish kills were present.

Secchi reading (water clarity) was 5.6 feet in a depth of 6.2 feet. Previous reading was 2 feet in 3.3 feet.

On **10 March 2010**, Seminole County Lake Management Gloria Eby, Thomas Calhoun (Assistant Scientist) and Dean G Barber (Consultant) surveyed the aquatic plants in Lake's Monroe & Jesup:

Lake Monroe

As the previous survey, November 18, 2010, most of the hydrilla and eelgrass observed were on southwestern and west side of the lake in 1-4 ft of water. In these populations, both plants were at or near the surface, with density reduced, however, in especially the shallow water (less than 2 ft) both species were coated with filamentous algae. No hydrilla or eelgrass were noted on the north and east side of the lake, where in previous years several hundred acres have been present. The only other SAV present were coontail and southern naiad, however, few plants were observed. Most emergent aquatic plants were significantly stressed from the cold weather, with populations being sparse, brown with little re-growth. The one emergent that has survived the cold conditions has been bulrush. None of these species indicated any cold stress, appearing healthy and green with new shoots. Cattails, which were reduced to less than an acre, are still

stressed, but showing new growth. Water primrose is still stressed with little or new growth. Thirty acres of water hyacinth were observed, mostly on the west side of the lake, with 6 acres of water lettuce, basically all on the west side. Both these exotics were new small budding plants. The AHRE FWC/Seminole County re-vegetation project at Wayside Park is doing well, especially the fenced in cordgrass. Most of the other introduced plants (pickerelweed, canna, duck potato) have not fared as well (mainly due to water elevation) however several are present and showing signs of recovery. Secchi was 3 ft in a depth of 4 ft. Previous reading was 2 ft.

Lake Jesup

The previously noted new infestation of hydrilla observed east of the highway 417 bridge was not as extensive as reported in November 18, 2009. However, this survey was hampered by overcast, windy/rough seas conditions, with pollen and filamentous/planktonic algae on the surface and in the water column, such that SAV could only be observed in inches of water. No other hydrilla was observed within the lake. Although some coontail was observed east of the 417 bridge, several acres were seen in Salt Creek, representing most of the coontail observed. In the AHRE FWC/Seminole County re-vegetation project (Site1), both east and west of the 417 bridge, the treated phragmites and cattails have been significantly impacted, however, both species have re-growth. The treated para grass, although stressed, was not as impacted. Cattails, which were almost eliminated by T.S. Fay and the harsh winter, are starting to come back throughout the lake. Only a trace of both water hyacinth and water lettuce were observed.

The AHRE FWC/Seminole County Overlook Park re-vegetation project is doing well. Like Wayside Park, the cordgrass is in excellent condition and other aquatic species are starting their spring expansion after impact from the winter months and water elevation changes. Secchi was 6 inches compared to the November 2009 reading of 1.4ft.

Prior to survey (January 13, 2010) thousands of tilapia and armored catfish that had been observed dead at the weed line. Tilapia were primarily between 1/2 to 3 lbs., with armored catfish in all sizes from small up to about 1 ½ lbs. Few other species were observed (including skates and shad) and a horseshoe crab found along the shore within the Site1 restoration zone (which was reported to FWRI Crustacean Fisheries Dept.). During this survey, decomposition is still occurring.

Additionally noted was a high amount of discarded angler gear (especially bobbers) along the fringe of the lake. It is recommended for educational signage at the entry points with a monofilament receptacle be considered for installation.

During our survey, we were able to pass (under the 46 bridge between Channel A & B) from Jesup to SJR with the recent leveling of the berm adjacent to SR46.