

Greetings Lake Howell Residents!

Please find the bioassessment report for your lake below. Key highlights of this update include:

- Hydrilla and Other Exotic Submersed Vegetation.
- Native Submersed Aquatic Vegetation
- Emergent Vegetation
- SERV Restoration Event
- Recommendations for You and Your Lake

6/14/2016

On **June 14th, 2016**, Lake Management Program staff, Joey Cordell and Beth Beals, surveyed the aquatic plants in **Lake Howell**.

Hydrilla was again found in areas along the North shore, particularly the Sausalito Shores Park and Lago Vista areas. Hydrilla tubers were also found in the Southeast cove. The hydrilla has not expanded since the previous inspection, though.

Photo: Hydrilla with new growth.



Eelgrass was the only native submersed aquatic vegetation (SAV) observed during the inspection. The maximum depth for the eelgrass was 5.5 feet.

Photo: Eelgrass and freshwater mussels.



Native emergent vegetation observed during the survey included: golden canna, buttonbush, water hemlock, swamp lily, flatsedge, pennywort, sofrush, hempvine, spatterdock, maidencane, smartweed, pickerelweed, duck potato, carolina willow, cordgrass, fire flag, and cattail. The native vegetation is expanding.

Photo: Golden canna.



Invasive emergent species observed included: alligator weed, paragrass, wild taro, umbrella grass, barnyard grass, water hyacinth, primrose willow, parrot feather, torpedograss, creeping oxeye and papyrus.

Photo: Water hyacinth.



On May 14th Seminole County's SERV program held an event to plant native shoreline vegetation. With the help of 67 volunteers, 5320 plants were installed at 8 sites around the lake. Those species planted included: duck potato, pickerelweed, softrush, and fireflag. Having a healthy population of shoreline vegetation filters runoff pollutants, protects against erosion, and provides habitat for the wildlife. Most of the planting sites are in healthy condition, but a few sites had a lower than desired survival rate.

Photo: SERV planting site.



The Secchi measurement (water clarity) was 3.5 feet in a total depth of 10.5 feet. The lake elevation was 52.22 feet above sea level at the time of inspection. No grass carp were observed during the inspection.

7/12/2016

On **July 12th, 2016**, Lake Management Program staff, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in **Lake Howell**.

The water level was high at the time of inspection.

The sport fish were very active.

Hydrilla was found on seven occasions during the inspection, indicating that it is scattered sparsely around the lake. Hydrilla did not exceed a depth of 4 feet.

Photo: Hydrilla growing from tuber.



Native submersed aquatic vegetation (SAV) observed during the inspection included: coontail to a depth of 6 feet, southern naiad to 3 feet, and eelgrass to 6 feet. Eelgrass is the dominant species on the lake and is increasing in area.

Photo: Eelgrass found to a depth of 6 feet.



Native emergent vegetation observed during the survey included: buttonbush, swamp lily, flat sedge, pennywort, spatterdock, pickerelweed, duck potato, carolina willow, bulrush, cordgrass, fire flag, cattail, and creeping aster.

Invasive emergent species observed included: alligator weed, barnyard grass, wild taro, water hyacinth, primrose willow, torpedograss, and creeping oxeye. Three clusters of water hyacinth were found around the lake. The torpedograss and barnyard grass populations are up.

Photo: Native **duck potato** and invasive **barnyard grass**.



On May 14th Seminole County's SERV program held an event to plant native shoreline vegetation. Species planted included: duck potato, pickerelweed, softrush, and fireflag. The plants have begun to establish themselves in the soil. A good percentage of the plants have survived.

Photo: SERV planting site.



The Secchi measurement (water clarity) was 3.6 feet in a total depth of 9.5 feet. The lake elevation was 51.55 feet above sea level at the time of inspection. No grass carp were observed during the inspection.

8/17/2016

On **August 17th, 2016**, Lake Management Program staff, Gloria Eby, Thomas Calhoun, and Joey Cordell, surveyed the aquatic plants in **Lake Howell** and conducted a Lake Vegetation Index (LVI) bioassessment.

The LVI was created by the Florida Department of Environmental Protection as a rapid screening tool (bioassessment) for ecological condition; it determines how closely a lake's flora (aquatic plants) resembles that of an undisturbed lake. Results of the LVI will be once the data has been processed.

Hydrilla was found during the inspection. The maximum depth for hydrilla was 8 feet. This is 4 feet deeper than it was found on the previous inspection.

Photo: Hydrilla on a frotus (rake for collecting submersed vegetation).



Native submersed aquatic vegetation (SAV) observed during the inspection included: smooth water hyssop, red ludwigia, baby's tears, coontail to a depth of 3.5 feet, southern naiad to 3.5 feet, and eelgrass to 4.5 feet.

Native emergent vegetation observed during the survey included: buttonbush, flat sedge, pennywort, hempvine, golden canna, spatterdock, fragrant water lily, pickerelweed, duck potato, carolina willow, lizard's tail, fire flag, and cattail.

Photo: Native duck potato.



Invasive emergent species observed included: alligator weed, wild taro, umbrella sedge, water hyacinth, primrose willow, torpedograss, salvinia, chinese tallow, brazilian pepper tree, barnyard grass, and creeping oxeye.

The Secchi measurement (water clarity) was 4.7 feet in a total depth of 9.8 feet. No grass carp were observed during the inspection.

11/9/2016

On **November 9th, 2016**, Lake Management Program staff, Gloria Eby, Thomas Calhoun, Joey Cordell and The City of Casselberry Natural Resources Officer Marissa Williams surveyed the aquatic plants in **Lake Howell**.

Small amounts of hydrilla were found scattered sparsely throughout the lake. The maximum depth for hydrilla was 6 feet. Hygrophila and parrot feather are two there invasive submersed species found during the inspection. Hygrophila, a species more commonly found in streams and rivers than lakes, was found by the mouth of Cassel Creek. Hygrophila does not have a historic presence in Lake Howell. It will be added to the aquatic vegetation permit to allow herbicidal treatment. A patch of parrot feather was found by the regional stormwater facility.

Photo: Invasive hygrophila.



Native submersed aquatic vegetation (SAV) observed during the inspection included: coontail to a depth of 3 feet, southern naiad to 6 feet, and eelgrass to 6 feet. Eelgrass is still the dominant species on the lake and continues to expand.

Native emergent vegetation observed during the survey included: swamp lily, spatterdock, fragrant water lily, pickerelweed, duck potato, bulrush, cordgrass, fire flag, and cattail.

Photo: Healthy stand of pickerelweed, duck potato, and fireflag.



Invasive emergent species observed included: alligator weed, barnyard grass, wild taro, water hyacinth, primrose willow, torpedograss, chinese tallow, brazilian pepper tree, and creeping oxeye.

On May 14th Seminole County's SERV program held an event to plant native shoreline vegetation. Species planted included: duck potato, pickerelweed, sofrush, and fireflag. Most of

the sites are doing very well and have started expanding. One site in particular (Marbeya) has exceeded expectations.

The Secchi measurement (water clarity) was 3.7 feet in a total depth of 9.6 feet. The lake elevation was 51.34 feet above sea level at the time of inspection. No grass carp were observed during the inspection.

Lake Recommendations:

1. Control of aquatic and wetland plants will also require a Florida Fish and Wildlife Conservation Commission (FWC) aquatic plant control permit. Contact Kristine Campbell at (321) 269-4298 or Kristine.Campbell@myfwc.com for assistance in obtaining the permit and further recommendations.
2. Increase educational outreach programs, i.e. Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs. Reduce personal pollution by: decreasing fertilizer usage, using only phosphorous free fertilizers, keeping a functional shoreline with beneficial native aquatic plants, keeping grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.
3. Help spread the word! Obtain email addresses from neighbors not currently on the distribution list. Valuable information is contained within these assessments