Glen Echo Lake, Charlton, Massachusetts
2018 Year-End Report

Report Date: November 29, 2018

Report Prepared for: Charlton Conservation Commission
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In accordance with the aquatic plant management contract between SŌLitude Lake Management and the Glen Echo Improvement Association (GEIA) for permitting and vegetation surveys in 2018, the following document serves to provide this year's treatment and survey results and management recommendations for next season.

All management activities were consistent with the Order of Conditions (DEP File #128-1073), and the License to Apply Chemicals issued by the MA DEP – Office of Watershed Management (#18059).

Early Season Inspections
A SŌLitude Biologist conducted a vegetation survey on June 11th to assess the relative abundance and distribution of aquatic vegetation, specifically fanwort [*Cabomba caroliniana*] and variable milfoil [*Myriophyllum heterophyllum*]. At the time of this survey, neither of the targeted species were observed, so a subsequent survey was scheduled for July 11th. During the second inspection, both species were observed. Areas of plant growth were documented during this survey to help finalize management strategies for the 2018 season. During the survey, variable milfoil and fanwort growth was present in various small portions of the waterbody. (**Figure 1**)

Initial Herbicide Treatment
Based on conditions observed during the July survey, and following board approval, treatment of Glen Echo Lake was scheduled and performed on August 8th. In accordance with the Order of Conditions for this project, written notification of the scheduled treatment date was sent to the Charlton Conservation Commission. Printed signs warning of the treatment and the associated temporary water-use restrictions were also sent to members of the Association for posting around the lake prior to the application.

The treatment was completed by SŌLitude's state certified applicators, and was conducted in accordance with the product label and permits issued by MA DEP. In areas containing fanwort growth, Sonar (fluridone) herbicide was applied. The granular SonarONE was spread evenly using a spreader mounted to the boat's bow. The placement of pellets directly on the plants and their timed-release of active ingredient over a several week period was utilized to maintain desired fluridone concentrations,

specifically around the small areas of targeted plants. In areas of variable milfoil growth, Tribune (diquat) herbicide was applied. The liquid herbicide was spread evenly using a low-pressure pump system, which sits in the boat and pumps through a hose into the water. At no time during the treatment program were fish mortalities or significant non-target impacts to other aquatic organisms or wildlife either observed or reported.

Booster Treatment

The booster treatment of SonarONE herbicide was conducted for September 18th. Prior to the booster application, the treatment area was surveyed to assess the progress of impacts on the target species. At this time, it was determined best to apply the SonarONE throughout the treatment area in order to boost the concentrations levels surrounding the plants. As only the 2.25-acre plot was treated during this application, a smaller vessel was used. This treatment was performed utilizing a 10-foot johnboat equipped with a gas powered backpack blower to spread the herbicide.

Late Season Inspection

On October 4th, a SŌLitude biologist performed a late season inspection of Glen Echo Lake to evaluate the density and distribution of aquatic vegetation species, both native and non-native. Results from this survey suggest successful treatment events from the 2018 management program. Variable milfoil was not observed within any of the management areas. The fanwort was still present in the water column in some areas, however all remaining stands were chlorotic, which is indicative of the herbicide taking affect on the plants. As Sonar is a slow acting herbicide, full effect on the plant structures can take 60-90 days or more.

Other species observed during the survey are listed in the following table in descending order of abundance:

Common Name	Scientific Name
Small Pondweed	*Potamogeton pusillus*
European Naiad	*Najas minor*
Robbins Pondweed	*Potamogeton robbinsii*
Large-leaf Pondweed	*Potamogeton amplifolius*
Ribbon-leaf Pondweed	*Potamogeton epihydrus*
Bladderwort spp.	*Utricularia* spp.
Southern Naiad	*Najas guadalupensis*
Low Watermilfoil	*Myriophyllum humile*

Please note that European naiad is considered an invasive species and should be monitored and considered for treatment. This species tends to arise later in the season around late July.

Ongoing Management Recommendations

Based on the success of the Sonar and Reward treatments performed, it is recommended to continue the monitoring and treatment approach. Pre-management surveys will continue to give us the most accurate area and acreage for treatment, while the treatments provide a reduction in the target species, decreasing their populations every year. In the past few years, fanwort growth has been sporadic and areas of growth have emerged at different times, so we will continue to conduct surveys on the day of treatment to ensure that all growth is documented. It is also recommended to continue monitoring of the European Naiad and perform treatments as required to help contain the spread of this species. As with any treatment events, we will advise and receive approval from the GEIA prior to proceeding.

FIGURE 1: July Distribution of Invasive Aquatic Vegetation

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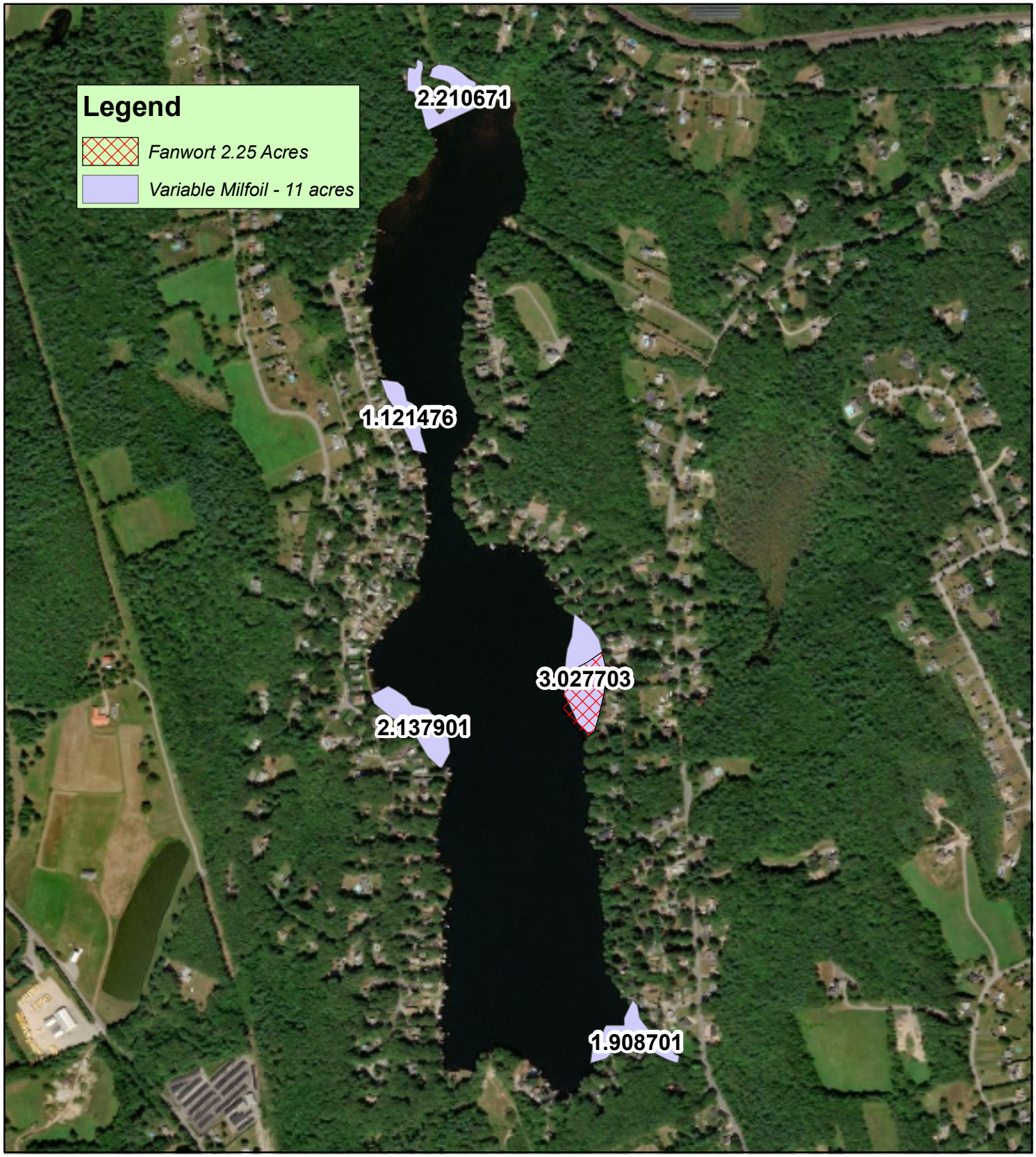

Glen Echo Lake
Charlton, MA

Glen Echo Lake

0 775 1,550 Feet

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1:9,928

Map Date: 7/22/2018
Prepared by: JP
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