

2019 Annual Summary Report Vegetation Evaluation Massapoag Lake Sharon, MA 02067

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Introduction

SOLitude Lake Management was contracted by the Sharon Lake Management Committee in 2019 to conduct an aquatic vegetation management program at Massapoag Lake in Sharon, MA. The purpose of the program was to evaluate the existing aquatic plant growth throughout Lake Massapoag. The survey focused on Fanwort (*Cabomba caroliniana*) and Variable Milfoil (*Myriophyllum heterophyllum*) distribution and relative abundance in the waterbody and adjacent lagoon. An outline of the 2019 program, along with our recommendations for ongoing management follow. No treatments were conducted in 2019.

Site Description

Lake Massapoag is a 385-acre waterbody located in Sharon, MA with a maximum reported depth of 14 meters. The lake bottom is primarily rocky, with two underwater plateaus in the northern center of the lake. The lake is fed primarily through groundwater springs, and streams including periodic high flow from a lagoon adjacent to the southern cove of the waterbody.

Vegetation Survey

A vegetation survey was conducted by a SOLitude Aquatic Specialist at Lake Massapoag and the adjacent lagoon on July 24, 2019. The survey utilized a Jon boat from which visual inspection occurred as well as bottom sampling using a "throw-rake" where water depth or other factors impaired visual inspection. The survey focused on invasive vegetation, specifically fanwort and variable milfoil. Special attention was paid to areas noted to have these invasive species in surveys of previous years. Most of the lake bottom was limited in aquatic vegetation which can be attributed to the rocky substrate.

A patch of variable milfoil was observed in the western cove and was found alongside fanwort within three patches in the southern portion of the pond. Milfoil was found in sparse abundance in the southernmost cove patch and the same abundance, but with unhealthy conditions was observed in the other two patches. Fanwort was found as a single patch on the eastern side of the lagoon in sparse abundance and in a dense patch within the southern cove of the lake. The other two patches along the southeastern side of the pond were observed to have sparse to moderate abundances of fanwort.

In the northeastern and southeastern portions of the lake some native vegetation was observed such as Tapegrass (*Vallisneria americana*), Stonewort (*Nitella*), and Ribbon-leaf Pondweed (*Potamogeton epihydrus*) which was also found in southern cove. A patch of Common Reed (*Phragmites australis*) was found along the eastern shoreline which should be monitored closely as it is invasive and has strong potential to spread quickly. Various lily species including Watershield (*Brasenia schreberi*), Yellow Waterlily (*Nuphar variegata*) and White Waterlily (*Nymphaea odorata*), patches were found in the western and southern coves as well as within the lagoon. There was a dense abundance of lilies found, particularly within the lagoon. A colonial micro-algae bloom was also observed during the survey but was not noted to be dense. A description of the various classes of relative abundance is shown below.

Trace	Few plants on rake
Sparse	Finger full on rake
Moderate	Handful on rake
Dense	Difficult to bring rake onto boat

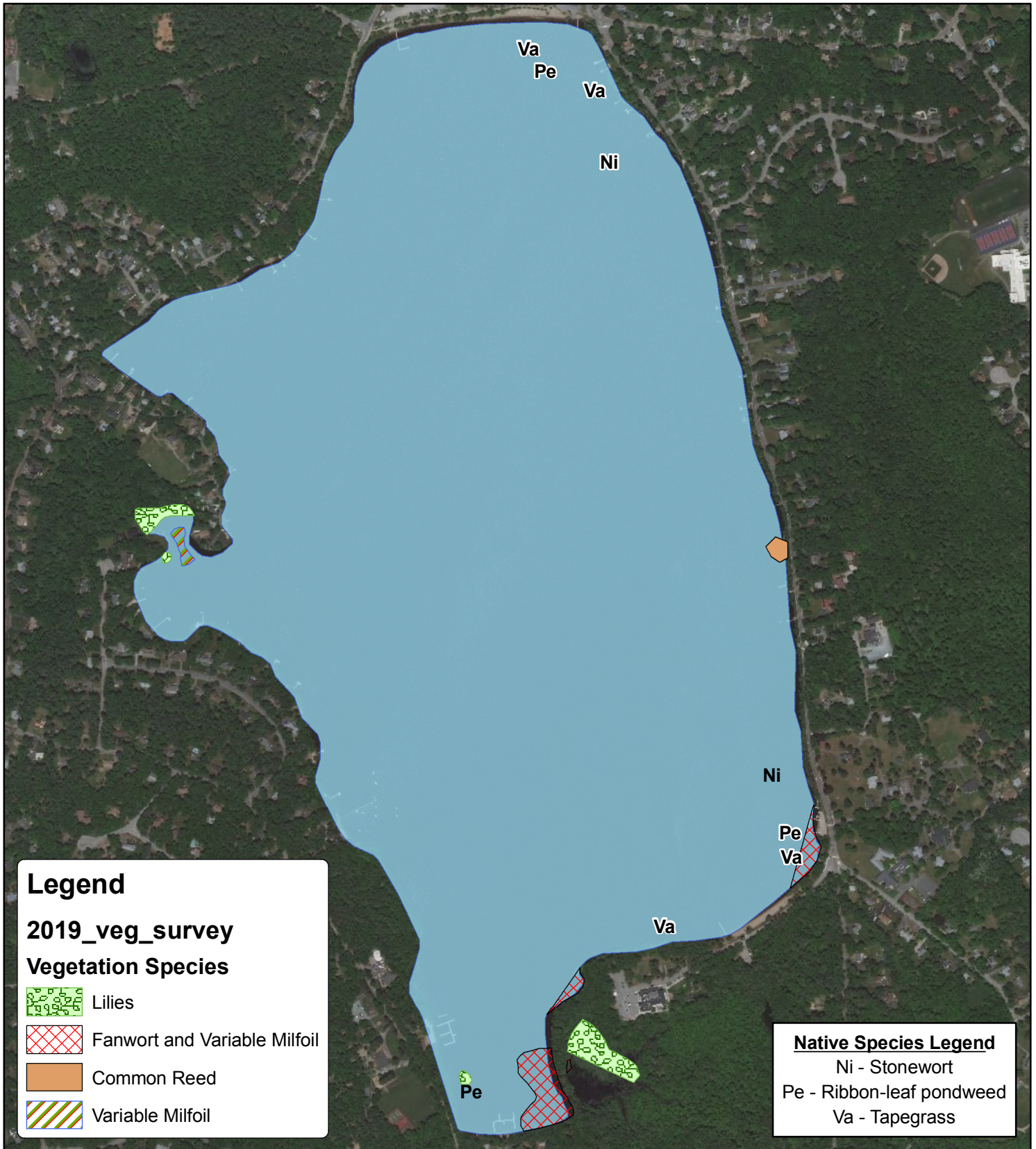
Recommendations for 2020

During the survey, it was noted that most of the vegetation growth within the lake was located in the southern cove and the lagoon (see attached vegetation assemblage map). It should be noted that the survey continued to show a significant reduction of the target species within the lagoon following the treatment in 2018, however, milfoil was found in the western cove of the main lake, and found alongside fanwort (which was of greater abundance) in three areas of the southern portion of the pond. The treatment in 2018 proved to be effective at controlling fanwort in the lagoon but treatment will be essential to maintain control in the lagoon and especially in the southern area of the main lake. We strongly recommend an annual survey in 2020 to determine changes in vegetation distribution and abundance with a focus on invasive species such as milfoil and fanwort. The survey is essential in planning effective treatments, if requested, to maintain control of the target species. We also recommend the addition of the following programs for 2020.

- Expand the current management zone to address a more extensive portion of the lake. Although the treatment of the lagoon in 2018 worked great, we have identified other areas of invasive concern within the main body of the lake.
- Perform Diver Assisted Suction Harvesting (DASH) or hand pulling as a means to control the vegetation which has now been reduced and isolated to select areas.
- Monitor the phragmite population on the eastern shoreline and treat when necessary. Phragmites are a rhizomatous plant and can spread very fast.
- Maintain balanced waterlily growth through the selective application of AquaPro (glyphosate). By treating selected areas of waterlilies every other year, a healthy balance of plants can be achieved. If left unmanaged, waterlilies will encroach on open water habitat further degrading the lake. By treating every other year, we can allow for a healthy distribution of vegetation.

We feel that our recommendations will help continue to enhance the lake’s aesthetic, ecological and recreational value. We truly appreciate your business and look forward to working with you again next season in 2020. If you have any questions regarding our 2019 program or our recommendations for 2020, please do not hesitate to contact our office.

FIGURE 1: 2019 Vegetation Assemblage



Legend

2019_veg_survey

Vegetation Species

-  Lilies
-  Fanwort and Variable Milfoil
-  Common Reed
-  Variable Milfoil

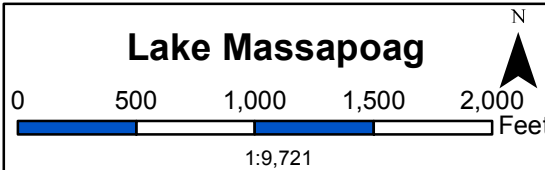
Native Species Legend

- Ni - Stonewort
- Pe - Ribbon-leaf pondweed
- Va - Tapegrass

Lake Massapoag
Sharon, MA
Norfolk County
42.10334°, -71.17713°



Lake Massapoag



Map Date: 07/24/19
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