

**2022 AQUATIC MANAGEMENT PROGRAM
ANNUAL REPORT
Lake Singletary
Millbury and Sutton, MA**

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Please accept the following as our 2022 Year-End Report for the Aquatic Management Program performed at Lake Singletary in Millbury and Sutton. The focus of this year's program was to monitor fanwort (*Cabomba caroliniana*), Eurasian milfoil (*Myriophyllum spicatum*), variable milfoil (*Myriophyllum heterophyllum*) and nuisance native species and to manage the observed growth with spot-treatment using USEPA/MA DEP registered herbicides. Activities completed as part of this project during the 2022 season are presented in the following sections.

All management activities were consistent with the Order of Conditions (DEP #224-0831), and the License to Apply Chemicals issued by the MA DEP – Office of Watershed Management.

INTRODUCTION

Monitoring and management of vegetation in Lake Singletary has been conducted annually since 1997 as part of an ongoing aquatic management program developed to address non-native, invasive fanwort, Eurasian milfoil, and variable milfoil. Annual monitoring helps to track target plant distribution and abundance; monitor changes in the native plant composition, assess effectiveness of invasive plant control efforts, and guide future management goals and actions.

Recent in-lake management has consisted of targeted Reward (diquat) and Clipper (flumioxazin) herbicide treatments in 2014-2021. Half-lake copper sulfate algaecide treatments have been applied periodically to reduce algal cell densities. The following report has been prepared to document the 2022 treatment and the survey work performed by SOLitude Lake Management this past year.



2022 TREATMENT PROGRAM

A chronology of this past year's management and brief description of events follows.

- | | |
|-----------------------------------|------------|
| ● Initial pre-treatment survey | 06/06/2022 |
| ● Pre-treatment vegetation survey | 08/03/2022 |
| ● Submersed vegetation treatment | 08/23/2022 |

PRE-TREATMENT SURVEY

An initial survey was conducted in early June but did not reveal any significant areas of target vegetation. On August 3rd, a SOLitude Lake Management biologist conducted a follow-up shoreline survey of Lake Singletary. The littoral zone was toured by 10 foot boat and observations were made utilizing a throw-rake and underwater camera system to confirm the vegetation assemblage. Native species observed throughout the lake included thin-leaf pondweed (*Potamogeton pusillus*), tapegrass (*Vallisneria americana*), Robbins' pondweed (*Potamogeton robbinsii*), bushy naiad (*Najas flexilis*), clasping-leaf pondweed (*Potamogeton perfoliatus*), snail-seed pondweed (*Potamogeton bicupulatus*), stonewort (*Nitella* sp.), bladderwort (*Utricularia* sp.), and ribbon-leaf pondweed (*Potamogeton epihydrus*).

Sparse growth of fanwort was observed primarily in the southernmost end of the lake. There were also a number of areas which exhibited nuisance growth of pondweeds and filamentous algae. **Figure 1** shows the areas of the lake with fanwort or nuisance native growth that were recommended for treatment.

HERBICIDE TREATMENT SUMMARY

A single herbicide application was completed on August 23rd for fanwort and nuisance pondweed species. Approximately 16.5-acres, coinciding with the presence of these species (shown in **Figure 1**), were selected for treatment with the herbicides Tribune (diquat) and Flumiguard SC (flumioxazin).

Treatments were performed using a 20-foot jon boat with a calibrated spray system. On-board GPS was utilized to provide real-time tracking of the treatment boat and ensure even application of the herbicide throughout the designated treatment areas. Prior to treatment, notification was submitted to both the Millbury and Sutton Conservation Commissions. SOLitude provided the LSWA with hi-visibility posters to put up around the lake detailing the treatment date and water-use restrictions to be imposed following treatments.

POST-TREATMENT SURVEY

Given the late timing of this year's treatment, no formal post-treatment survey was completed.

SUMMARY AND ONGOING MANAGEMENT RECOMMENDATIONS

Once again, the spot-treatment of herbicides provided sustainable management of the target species throughout the 2022 season. Native plant species were maintained in non-nuisance densities throughout the summer months; however, thin-leaf and clasping-leaf pondweed seem to be more frequent in recent years, especially along the eastern cove between Old Country Road and Tuttle Road. We anticipate treating historical areas of fanwort infestation, based upon survey results, and any milfoil growth in 2023. Additionally, we recommend being prepared to perform an algaecide treatment next year, if bloom conditions arise.

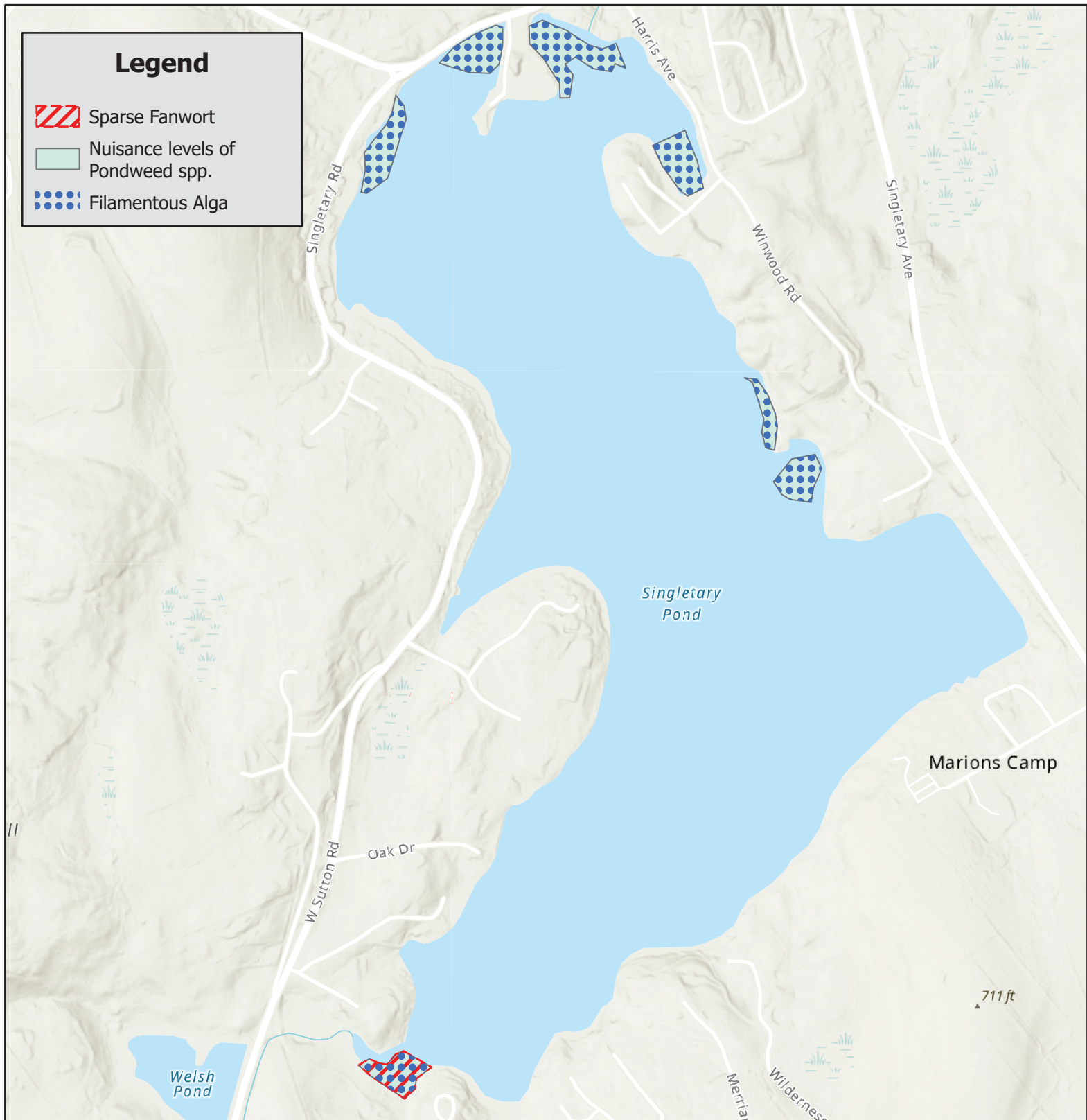


We also recommend conducting a more in-depth, quantitative vegetation survey of the lake in 2023. This type of survey has been conducted periodically in the past, most recently in 2019. We would also welcome the opportunity to meet with the Association to review and discuss the management program

We trust this report provides a concise summary of the 2022 Aquatic Management Program at Lake Singletary. We look forward to assisting the LSWA again in 2023 to manage Lake Singletary through monitoring and herbicide and/or algaecide treatments. As recently discussed, we welcome the opportunity to meet with the Association over the winter to review and discuss the on-going program. Please feel free to contact us if you have any questions or require additional information.

Distribution of Target Species

Figure 1



Singletary Lake
Millbury/Sutton, MA

0 100 200
Feet



Map Date: 08/03/2022
Survey Date: 08/03/2022
Office: Shrewsbury, MA