

**2020 Annual Summary Report
Aquatic Management Program
Nipmuc Pond
Mendon, MA**

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SŌLitude Lake Management was contracted by the Town of Mendon to conduct an aquatic vegetation management program at Nipmuc Pond. The 2020 program focused on the control of invasive Variable watermilfoil (*Myriophyllum heterophyllum*) and nuisance algae. The management program was comprised of an initial herbicide treatment with the USEPA/MA DEP registered aquatic herbicides Reward (active ingredient diquat) and copper sulfate algaecide. An outline of the 2020 program along with our recommendations for ongoing management follow.

2020 PROGRAM TASK CHRONOLOGY

Project Task	Date Performed
File MA DEP pesticide use permit	March 16 th
Perform Pre-Treatment Survey	June 22 nd
Performed pre-treatment survey / conducted herbicide & algaecide treatment	June 22 nd
Perform Post-Treatment Survey	October 16 th

PRE-TREATMENT VEGETATION SURVEY

On June 22nd, a SLM Biologist performed a pre-treatment vegetation survey of Nipmuc Pond. The intent of this visual inspection of the dominant vegetation growth was to document pre-treatment plant growth conditions in order to have a baseline in which to evaluate the efficacy of the herbicide treatment, gauge non-target impacts, if any, and assess future management needs and/or necessary program modifications. This survey was conducted by traveling throughout the pond with a small boat to record visual observations of the plant growth. In addition to the recorded visual observations random vegetation samples were collected throughout the pond to confirm plant species composition and visual surface observations. At the time of survey, the water quality appeared to be poor compared to previous years conditions. A list of the dominant plant species along with a general description of the observed distribution and abundance is provided below.

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Dominant Plants

- Variable milfoil (*Myriophyllum heterophyllum*)
- White waterlily (*Nymphaea odorata*)
- Tapegrass (*Vallesenaria Americana*)
- Pondweeds (*Potamogeton spp.*)

General Description

Common – moderate patches throughout littoral zone
 Common– scattered patches around the shoreline
 Sparse – scattered patches around shoreline
 Common – scattered patches throughout littoral zone

HERBICIDE/ALGAECIDE TREATMENT PROGRAM SUMMARY

Following the receipt of an approved MA DEP permit, the initial herbicide/algaecide treatments were performed on June 22nd to control identified areas of variable milfoil and algae growth using Reward (active ingredient Diquat) and copper sulfate (algaecide). The treatment was conducted by diluting the liquid and crystal herbicide concentrate with lake water on board the treatment vessel. The herbicide dilution was then sprayed over the water surface using a small gasoline pump spraying system. Even application of the herbicide was achieved using GPS and a calibrated chemical pumping system.

In addition to the Reward and copper sulfate herbicide/algaecide treatment, a post-treatment survey was conducted to assess treatment efficacy and impacts on non-target species if any.

Herbicide/Algaecide Applied	Application Date	Application Rate	Acreage Treated
Tribune	June 22 nd	1.5-2.0 gals/acre	~ 10 acres
Copper sulfate	June 22 nd	2-6 lbs/acre ft.	~ 12.5acres

POST-TREATMENT SURVEY AND 2021 MANAGEMENT RECOMMENDATIONS

On October 16th a SLM Biologist revisited Nipmuc Pond for a post-treatment survey. Nearly all of the variable milfoil in treatment areas was gone, except a few scattered plants that looked to be the product of regrowth. Native species remained consistent with pre-treatment conditions. White waterlilies were also present in large portions of the lake. Although the 2020 treatment program worked well to control invasive variable milfoil and problematic algae growth during the summer season, we expect some regrowth in the Spring. Waterlily presence continues to spread. Although not an ecological threat at the moment, they can be treated if they are impeding recreational and aesthetic value.

We feel that these proposed program modifications are necessary for the long-term maintenance of Nipmuc Pond’s recreational and ecological value. We appreciate the Town’s business over the years and look forward to working with you again in 2021. If you have any questions about the 2020 program or our 2021 management recommendations, please do not hesitate to contact our office.