

**Request for guidance on including the use of herbicide, algaecide, and
DASH treatments to manage invasive plant growth in
Lake Matawanakee / Forge Pond**

**DEP nos. 204-0872 and 334-1714
NHESP no. 05-18722**

March 2025

**Littleton Clean Lakes Committee
Westford Healthy Lakes and Ponds Collaborative
Friends of Forge Pond**



Introduction

Management of invasive plants in Lake Matawanakee / Forge Pond in Littleton and Westford, Massachusetts has focused on winter drawdowns, benthic mats, and Eco-Harvesting. Recent proliferation of invasive and nuisance plants in the lake is so severe that additional methods of dealing with it are sought. The Friends of Forge Pond, Littleton Clean Lakes Committee and Westford Healthy Lakes and Ponds Collaborative are seeking to add to the current lake management the use of herbicide, algaecide and suction harvesting as additional methods for mitigating the plant growth.

Guidance is sought on whether the requested changes can be made by amending the existing Order of Conditions or if a new Notice of Intent is required.

Lake management activities allowed by the current OOC

The current Order of Conditions (OOC) for Lake Matawanakee / Forge Pond (hereinafter referred to as Lake Matawanakee) permits the use of winter drawdowns and physical harvesting of plants as methods of controlling invasive and nuisance plant growth in the lake. The original OOC for drawdowns was amended in 2023 to allow the additional use of physical plant harvesting.

The overall goal of these efforts is to preserve the quality of the lake in the face of accelerating eutrophication. Our lakes are treasured natural resources, but when lakes are surrounded by developed communities, they are prone to accelerated eutrophication and deterioration. This has been seen locally at Littleton's Mill Pond, which over just a few decades changed from being a vibrant lake with a 12-foot depth to a degraded pond with a 3-foot depth. Managing the ecology of the lakes is important for preserving their vitality.

Status of lake condition

Lake Matawanakee is infested with several non-native or invasive aquatic plant species. These include Eurasian milfoil (*Myriophyllum spicatum*), variable milfoil (*Myriophyllum heterophyllum*), fanwort (*Cabomba caroliniana*), curly-leaf pondweed (*Potamogeton crispus*) and European naiad (*Najas minor*). These species degrade recreational uses of the lake and degrade the habitat value of the lake's littoral zone (the area of rooted plant growth) by out-competing beneficial native species.

Native aquatic species that have in some cases become abundant in areas where swimming and boating occur include coontail (*Ceratophyllum demersum*), common bladderwort (*Utricularia vulgaris*), wild celery (*Vallisneria spiralis*), lesser duckweed (*Lemna minor*), ribbonleaf pondweed (*Potamogeton amplifolius*), thin-leaf pondweed (*Potamogeton pectinatus*), white water lily (*Nymphaea odorata*), yellow water lily (*Nuphar lutea variegata*), and musk grass (*Chara vulgaris*).

While winter drawdowns have done a reasonable job of controlling the invasive and nuisance plants over much of the past decade, starting in 2023 the growth of plants in the lake has increased significantly, with areas which were previously populated by the plants now exhibiting much higher plant densities than before, and with invasive plant growth in many areas where the plants had not previously been present. Several life-long residents of the lake pointed out that the plant growth in both the summers of 2023 and 2024 was far more abundant than they had ever seen before.

Recent lake management experience

Recent winters have been warmer, significantly reducing the effectiveness of drawdowns. The warmer weather has made it difficult to lower the lake level to the target elevation and has prevented achieving the two-week period of sub-freezing temperature needed to successfully eliminate the exposed invasive plants. As a result, the drawdowns of the winters of 2022-2023 and 2023-2024 didn't seem to materially reduce the plant growth in the lake. The effect of the 2024-2025 drawdown is expected to be better, but this can't be assessed until this summer.

Over the summers of 2023 and 2024, Eco-Harvesting has been used to remove plant material from the lake and dispose of it away from the lake. In both summers, the Eco-Harvesting activities were limited in scale and, because of permitting delays, took place too late in the summer, so the Eco-Harvesting gave us minimal results. We are working to obtain a permit from the Massachusetts Department of Environmental Protection (DEP) for future treatments that will greatly increase the amount of plant material that can be removed. However, the mandated process for securing the permit will result in approval being obtained too late for Eco-Harvesting to be performed in the summer of 2025.

Requested additions to currently approved management activities

To continue efforts to effectively mitigate the growth of invasive plants in Lake Matawanakee, despite the shortcomings discussed above, two additional lake management methods are being requested.

First of these is the use of herbicide and algaecide treatments to manage invasive and nuisance aquatic plants. This approach is recognized as an appropriate and effective method of plant management by the Massachusetts Departments of Environmental Protection and Conservation and Recreation (ref: Eutrophication and Aquatic Plant Management in Massachusetts: Final Generic Environmental Impact Report, section 4.6 [\[https://www.mass.gov/files/documents/2016/08/sd/eutrophication-and-aquatic-plant-management-in-massachusetts-final-generic-environmental-impact-report-mattson.pdf\]](https://www.mass.gov/files/documents/2016/08/sd/eutrophication-and-aquatic-plant-management-in-massachusetts-final-generic-environmental-impact-report-mattson.pdf)). The use of these herbicides and algaecides is closely controlled and must be applied by licensed applicators with proper permits.

Secondly, the use of Suction Harvesting is requested. Suction harvesting is a process of aquatic plant removal using divers to identify the target plants, loosen the plants by their roots and guide them into a suction device. This process is also known as Diver Assisted Suction Harvesting, or DASH. Plants are extracted with their root systems, providing a good chance of eliminating the unwanted vegetation, rather than only slowing growth temporarily. The suctioned material is moved through tubing to a tending boat and deposited into a mesh containment system. The plant material stays in the containment system and de-waters. Any silt on the plants predominantly drains back into the lake. The process is rather expensive and so suitable only for targeted areas, such as plant "hot spots" and along waterfronts and beaches.

The method of suction harvesting is included in the amended OOC for Lake Matawanakee's lake management of July 2023 (DEP nos. 204-0872 (Littleton) and 334-1714 (Westford)). More specifically, that amendment allowed physical harvesting of plant material, as explained in Special Condition #40:

"Physical harvesting techniques allowed include mechanical harvesting with collection (aka eco-harvesting). If the proponent seeks to implement manual hand pulling or suction harvesting, a work plan and maps shall be provided to the Commission for their review and approval at a regularly scheduled meeting. Prior to submitting such request, the proponent shall also receive

approval from “the Division” [i.e., Massachusetts Natural Heritage and Endangered Species Program].”

We are restrained from using suction harvesting in 2025 until the previously mentioned permit is obtained for the removal of larger amounts of plant material. Since suction harvesting is expected to be tried once this permit is obtained, the permission to use suction harvesting is sought at this time, while broadening of the existing lake management permit is already being sought.

Seeking guidance under OOC General Condition #14

The General Conditions of the lake management Order of Conditions for Lake Matawanakee (DEP nos. 204-0872 (Littleton) and 334-1714 (Westford)) include the following:

“(13) The work shall conform to the plans and special conditions contained in this order.

(14) Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.”

As such, we are requesting guidance on whether it is appropriate to make the changes described in the previous section by amending the existing OOC or if a new Notice of Intent is required to request these changes.

The inclusion of physical harvesting of plants as another lake management process, in addition to the previously existing approved winter drawdowns, was made as an amendment to the drawdown OOC. The rationale for this was to have a single Order of Conditions for all the lake management activities on Lake Matawanakee, rather than individual OOC’s for different activities which would need to be tracked, renewed, and managed separately. The same rationale can be seen as applying for the current request.

The lake management OOC amended for the inclusion of physical harvesting of plants explains the following, on page 10b of the Westford amended OOC:

“The Commission finds that the annual drawdown altered the Land Under Waterbody of the entire waterbody through the exposing of lake bottom sediments or the lowering of the water level and the areas of invasive and nuisance vegetation removal are within the same locations permitted by the existing Order of Conditions.”

In the same way, the areas affected by herbicide and algaecide treatments and DASH treatments are also within the same locations permitted by the existing amended Order of Conditions.