

December 8, 2025

Glen Echo Lake Improvement Association, Inc.
Attn: Jackie Nowak
PO Box 578
Charlton, MA 01508
Sent via email: nowak151@verizon.net

Re: Glen Echo Lake, Charlton, MA – 2025 Year End Report

Dear Ms. Nowak and Association Members:

It is our pleasure to present a year end summary report to Glen Echo Lake Improvement Association, Inc. regarding the 2025 aquatic management program at Glen Echo Lake (Figure 1). Glen Echo Lake is approximately 116 acres and is located in Charlton, MA. The lake is primarily surrounded by sparse woodlands with developed properties located on the majority of the shoreline. Access to the Glen Echo Lake is gained from the Association’s boat launch, which is gated off to the public. The boat launch is found off of Glen Echo Shore Road, along the western shoreline. Glen Echo Lake is a popular waterbody for recreational activities such as boating, swimming, fishing, and water skiing.



Figure 1: Glen Echo Lake - Charlton, MA

Historically, Glen Echo Lake has battled invasive species including fanwort (*Cabomba caroliniana*) and variable milfoil (*Myriophyllum heterophyllum*). The goal of the 2025 program was to manage the invasive species while monitoring basic water quality through a proactive monitoring schedule. This would be accomplished by implementing an aquatic management program that focused around performing all applicable tasks, including planning, permitting, surveys, treatments, and reporting.

During each visit to the lake, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Additionally, dissolved oxygen (DO) and temperature readings were collected throughout the season using a calibrated YSI meter with optical sensor. Dissolved oxygen is the amount of oxygen in water that is available to aquatic organisms. DO is necessary to support fish spawning, growth, and activity. Tolerance varies

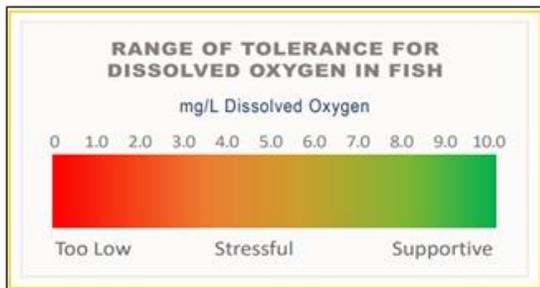


Figure 2: Dissolved oxygen table

by species, please see the figure provided for a general range of fish tolerance (Source: epa.gov). Dissolved oxygen can be affected by many outside factors, such as temperature, time of day, and pollution. Dissolved oxygen levels are typically lowest early in the morning. Healthy water should generally have concentrations of about 6.5-8+ mg/L (illustrated in Figure 2 above). Water clarity was also assessed using a Secchi disk. A Secchi disk is a disk with alternating black and white quadrants. It is lowered into the water of a pond or lake until it can no

longer be seen by the observer. This depth of disappearance, called the Secchi depth, is a measurement of the transparency of the water. All readings are included in the tables throughout this report.

All permitting, treatment, and survey tasks were completed without issue and at the proper times. The table below provides the specific dates of each task. Below the table, each visit/task performed is described in additional detail.

Summary Of 2025 Management Activities

Date	Task/Description
May 29, 2025	A pre-management survey was conducted to gauge baseline conditions of the lake, identify species/densities, and help guide 2025 management
July 23, 2025	A survey was conducted to confirm treatment areas and species presence; An herbicide treatment was performed
September 15, 2025	A post-treatment survey was conducted to evaluate the effectiveness of 2025 management and to help guide recommendations for 2026

May 29, 2025 – Pre-Management Survey

On 5/29/25, Field Biologist, Drew Felter, and Field Biologist, Irini Stefanakos, made a visit to Glen Echo Lake. Upon arrival to the site, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Plants documented during the survey are documented in the table below. (*) denotes an invasive species. Invasive species are non-native to the ecosystem and are likely to cause economic harm, environmental harm, or harm to human health.



Figure 3: Variable milfoil densities observed during May visit

Species Identified	
Common Name	Latin Name
Fanwort*	<i>Cabomba caroliniana</i>
Variable Milfoil*	<i>Myriophyllum heterophyllum</i>
Clasping-leaf Pondweed	<i>Potamogeton perfoliatis</i>
Waterlilies	<i>Nymphaeaceae</i>
Needle-Spikerush, hairgrass	<i>Eleocharis acicularis</i>
Bladderwort	<i>Utricularia sp.</i>
Watershield	<i>Brasenia schreberi</i>
Burreed	<i>Sparganium</i>
Big-leaf Pondweed	<i>Potamogeton amplifolius</i>
Water Starwort	<i>Callitriche</i>
Thin-leaf Pondweed	<i>Potamogeton pusillus</i>

This site visit marked the first site visit of the year to Glen Echo Lake. While on site, we completed a survey as well as basic water quality data collection. Two invasive species were observed during the survey, which included variable milfoil and fanwort. Overall, there

was very scarce plant growth noted for both invasive and native species. The variable milfoil was found in one patch on the north side of the pond. Fanwort was observed in another small patch from the throw

rake sample on the south side cove where the inlet is. The water quality data showed an average range for both DO and water clarity. We observed around a dozen dead fish, but overall, the lake looked very clear as it was still early for fanwort growth to develop. We recommended conducting another survey prior to creating an aquatic management program for the 2025 season.

Temperature & Dissolved Oxygen	
Surface Temp (°C)	Surface DO (mg/L)
17.7	9.34

Secchi Disk Clarity	
Secchi Disk Depth (Feet)	
	7'6"

July 23, 2025 – Survey / Herbicide Treatment

On 7/23/25, Aquatic Field Biologist, Brian Sweeney, and Field Assistant, Nick Cameron, made a visit to Glen Echo Lake. Upon arrival to the site, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Plants documented during the survey are documented in the table below. (*) denotes an invasive species. Invasive species are non-native to the ecosystem and are likely to cause economic harm, environmental harm, or harm to human health.



Figure 4: Variable milfoil densities observed during July visit

Species Identified	
Common Name	Latin Name
Variable Milfoil*	<i>Myriophyllum heterophyllum</i>
Fanwort*	<i>Cabomba caroliniana</i>
Floating-leaf Pondweed	<i>Potamogeton natans</i>
Cattails	<i>Typha</i>
Thin-leaf Pondweed	<i>Potamogeton pusillus</i>
Waterlilies	<i>Nymphaeaceae</i>
Benthic Algae	
Snailseed Pondweed	<i>Potamogeton bicupulatus</i>
Ribbon-leaf Pondweed	<i>Potamogeton epihydrus</i>

This site visit consisted of the collection of basic water quality data, completing a survey and performing an herbicide treatment. The survey was conducted in order

to gauge the species/distribution present, in addition to confirming potential treatment areas. The treatment was conducted to target nuisance densities of pondweeds, as well as invasive species variable milfoil and fanwort, which were observed in scattered densities at the northern end of the pond and along the shorelines. Dense patches of floating-leaf pondweed (and various *Potamogeton sp.*) were present at the northern end of the pond and scattered throughout the littoral zones. Overall, the treatment went well, and excellent coverage was achieved.

As noted, a treatment was conducted for the control of target nuisance/invasive plant growth. The liquid contact herbicide(s) was applied using a treatment boat equipped with a calibrated sub-surface injection

system. This application methodology allows for even coverage within the treatment areas. The treatment was completed without issue. We anticipated plant die-off within just a few days to a few weeks.

Prior to the treatment, the shoreline was posted with neon signage noting the treatment, affiliated water use restrictions, and Water & Wetland contact information. The signs fulfill permit obligations for shoreline posting.

Temperature & Dissolved Oxygen	
Surface Temp (°C)	Surface DO (mg/L)
25.2	7.25

September 15, 2025 - Post-Management Survey

On 9/15/25, Aquatic Field Biologist, Brian Sweeney and Field Biologist, Irini Stefanakos, made a visit to Glen Echo Lake. Upon arrival to the site, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Plants documented during the survey are documented in the table below. (*) denotes an invasive species. Invasive species are non-native to the ecosystem and are likely to cause economic harm, environmental harm, or harm to human health.

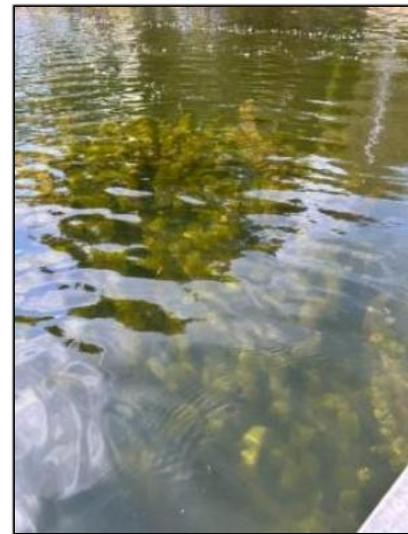


Figure 5: Fanwort densities observed during September visit

Species Identified	
Common Name	Latin Name
Fanwort*	<i>Cabomba caroliniana</i>
Variable Milfoil*	<i>Myriophyllum heterophyllum</i>
Benthic Algae	
Waterlilies	<i>Nymphaeaceae</i>
Watershield	<i>Brasenia schreberi</i>

The visit consisted of a final post-management survey for the season and the collection of basic water

quality data. Scattered areas of fanwort were observed, ranging from scarce to dense, with small patches of variable milfoil also present. The northernmost coves showed significant improvement, containing only limited new growth of fanwort and milfoil. In the middle of the lake - within the eastern and western littoral zones - tall, dense fanwort was observed. While specific sections of the pond continued to show active growth, the previously treated zones displayed substantial improvement. A high number of fanwort fragments were also noted, most of which were chlorotic, exhibiting a pink coloration indicative of decay. Basic water quality data showed excellent water clarity and dissolved oxygen levels at the time of the visit. Weather conditions were ideal, and no issues were encountered. Overall, the treated areas show great improvement, but the new areas of invasive growth may need to be addressed in 2026.

Temperature & Dissolved Oxygen	
Surface Temp (°C)	Surface DO (mg/L)
22.1	6.65

Secchi Disk Clarity	
Secchi Disk Depth (Feet)	7'9"

Summary / 2026 Recommendations

The 2025 management program at Glen Echo Lake continued to follow an approach centered on survey-driven decision making, with a pre-management survey completed in late May, treatment performed in July, and a post-management survey in September. Monitoring confirmed the continued presence of fanwort and variable milfoil, in addition to nuisance densities of native species, though spring conditions showed sparse plant growth overall. By midsummer, both species were present in scattered patches, particularly within the northern end and shoreline littoral zones. A contact herbicide application was completed without issue and resulted in good reduction of growth in treatment areas. The September survey documented improved conditions in zones previously treated, though tall dense fanwort and scattered patches of milfoil remain in portions of the eastern and western littoral zones. Water clarity and dissolved oxygen readings remained within excellent range during all site visits, and no adverse impacts were observed. These results indicate that progress is being made, but management must continue to prevent spread and protect open water habitat.

Looking ahead to 2026, we recommend continuing a similar survey-based program that begins with an early season assessment to identify treatment need, density, and distribution of fanwort and variable milfoil. Based on the strong response to contact herbicides in 2025, continuation of diquat or flumioxazin as a spot-treatment tool is appropriate. As contact herbicides only provide seasonal control, annual management will remain necessary. Given the persistent presence of fanwort and milfoil and the increasing height of late-season fanwort growth, the Association may also wish to consider systemic control options in the future. Whole-pond fluridone remains the most effective long-term strategy for fanwort suppression when budget allows, while ProcettaCOR may be suitable for milfoil control should selective management be desired. Regardless of selected method, treatment in 2026 should again be guided by survey data to ensure timing aligns with plant growth and to avoid unnecessary applications. Water quality should continue to be monitored annually, and maintaining communication between Water & Wetland and the Association throughout the season will remain important for proactive decision making. Algae should be watched closely, with copper-based products kept available should conditions shift during periods of warm temperatures or limited flow.

We have greatly enjoyed working with Glen Echo Lake Improvement Association, Charlton Conservation Commission, and the Charlton Lakes & Ponds Committee throughout the 2025 season. We look forward to continuing our partnership in 2026 as we work to maintain and further improve the health of Glen Echo Lake.

Sincerely,



James Lacasse



Branch Manager

c: 774-276-6098

o: 888-4WETLAN(D)

james@waterandwetland.com

www.waterandwetland.com

Attachments Include

- **2025 WM04 Approval**
- **Pre-Management Survey(s) Maps**
- **Post-Treatment Survey Map**

CC: Charlton Conservation Commission



Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

License No.:

WM04-0002006

LICENSE TO APPLY CHEMICALS FOR CONTROL OF NUISANCE AQUATIC VEGETATION

Applicant: COLIN J GOSSELIN
Name of Waterbody: GLEN ECHO POND
Location of Waterbody: CHARLTON
Project Proponent: TOWN OF CHARLTON

License Effective Date: **6/12/2025**

AUTHORITY FOR ISSUANCE

Pursuant to the authority granted to the Department of Environmental Protection, by Massachusetts G.L.c. 111, s5E, the following license is hereby issued to **COLIN GOSSELIN, Water and Wetland** (hereinafter called the “licensee”), authorizing the application of chemicals for the control of nutrients, algae or aquatic plants to **GLEN ECHO POND, CHARLTON**; such authorization being expressly conditional on compliance by the licensee with all terms and conditions of the license hereinafter set forth. This license shall become effective on the date of the Director’s signature and shall expire on the **12/31/2025**.

Sincerely,

David Wong, Ph.D.
401 Water Quality Cert. Program Manager
Division of Wetlands and Waterways
Massachusetts Department of Environmental Protection



Department of Environmental Protection

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A. Application Condition(s)

Chemical Information

Product Brand Name/Trade Name	Chemical Form (dry/liquid)	Total Weight/Volume Applied	Units of Measurement (lbs/gallons)	Acres Treated	Application Rate	Planned Maximum Concentration (ppm)
Tribune	liquid	75.56	gal	38.28	2 gal/acre	
Captain XTR	liquid	75	gal	25	0.6 gal/acrefoot	
Copper Sulfate	dry	228.68	lbs	38.28	1.2 lbs/acrefoot	
Flumigard SC	liquid	928	oz	29	32 oz/acre	

Treatment Method: The treatment(s) will be conducted via a jon boat equipped with a subsurface injection system. The treatments will be based off survey data collected. Surveys will help determine and guide treatment necessary, timing, and potential treatment areas. No more than 1/3 of the waterbody and 1/2 of the littoral zone will be treated. The Flumigard SC is permitted for up to 1/4 of the waterbody per label. The Copper sulfate and Captain XTR are permitted based on an average depth of 5 feet. It is important to note that although the whole waterbody is highlighted on the "Potential Treatment/Management Map", that it does not indicate that the whole waterbody will be treated, as this will be determined by survey data. This indicates the management area in which treatment may occur. We are permitting for 2-4 applications of Copper sulfate, up to 2-3 applications of Tribune, and up to 1-2 applications of Flumigard SC (as/if necessary).

B. Application Report

By December 31st of the year of this treatment, the licensee shall submit a written report to the Department certifying the treatment date, application rate and the total weight/volume for each chemical used in the treatment, in accordance with requirements of Section I.A. of this license.

Please send the report to the Massachusetts Department of Environmental Protection (David.W.Wong@mass.gov).

C. Modification of Application Conditions

The licensee shall not apply chemicals in a manner contrary to, or inconsistent with, the application conditions set forth in Section I.A. of this license without the prior written approval of the Department.

D. Special Condition(s)

Flumioxazin Special Treatment Conditions:

In addition to label instructions, the MDAR, MADFW and MassDEP have developed special treatment conditions that supersede some label restrictions.

1) The maximum permissible application concentration is 200 ug/L.



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- 2) In order to limit the spatial extent of non-target damage from the toxicity of flumioxazin, no more than $\frac{1}{4}$ of the water body may be treated in any one year.
- 3) Treated areas may not be retreated with flumioxazin or any herbicide with a similar mode of action (i.e., light dependent peroxidizing herbicide) for three consecutive years in order to prevent the development of herbicide resistance in treated plants and allow for the recolonization of mussels and other native biota. The exception to this restriction is repeat targeted treatments in consecutive years in the immediate vicinity around shoreline structures (e.g., boat launches, docks, swimming beaches, dams, water intake pipes) and drainage ditches, ponds entirely internal to golf courses, etc.
- 4) Flumioxazin is excluded from use in State-listed aquatic species habitats, unless otherwise authorized in writing on a case-by-case basis by the MA Division of Fisheries and Wildlife pursuant to the Massachusetts Endangered Species Act, MGL c.131A and its implementing regulations 321 CMR 10.00.

General Conditions

- A. The licensee is hereby notified that chemical treatments to control aquatic nuisances in public or private lakes and ponds of the Commonwealth involve the alteration of wetland resource areas protected under both Massachusetts G.L.c. 131, s40, the Wetlands Protection Act and 310 CMR 10.00, Massachusetts Wetlands Protection Regulations.
- B. The licensee is hereby notified that issuance of this license does not in any way constitute the Department's approval of the chemical treatment as it related to the provisions of the Wetlands Protection Act.
- C. The licensee shall obtain either a final Order of Conditions or a negative Determination of Applicability from the **CHARLTON** Conservation Commission(s) prior to application of chemicals authorized under this license.
- D. Shoreline areas of the lake or pond must be posted with signs warning the general public of any water use restrictions stated on the chemical label minimum for one week. This is especially important at bathing beaches and other areas of common access. These signs shall clearly state that the chemical treatment is being conducted pursuant to a license issued by the Department of Environmental Protection, "DEP". A new sign shall be posted for each treatment event.
- E. The Department may require the licensee to cease application of chemicals to a body of water at any time following the issuance of a license if the Department determines that the chemical treatment will be ineffective, or will result in unreasonable restrictions on current water uses, or will produce unnecessary adverse side effects on nontarget flora or fauna.
- F. Chemical applications shall be performed in accordance with the manufacturer's label directions, existing pesticide use laws, and any conditions imposed by other local or state agencies.
- G. Chemical treatments to water using general use pesticides shall only be performed by an applicator currently licensed



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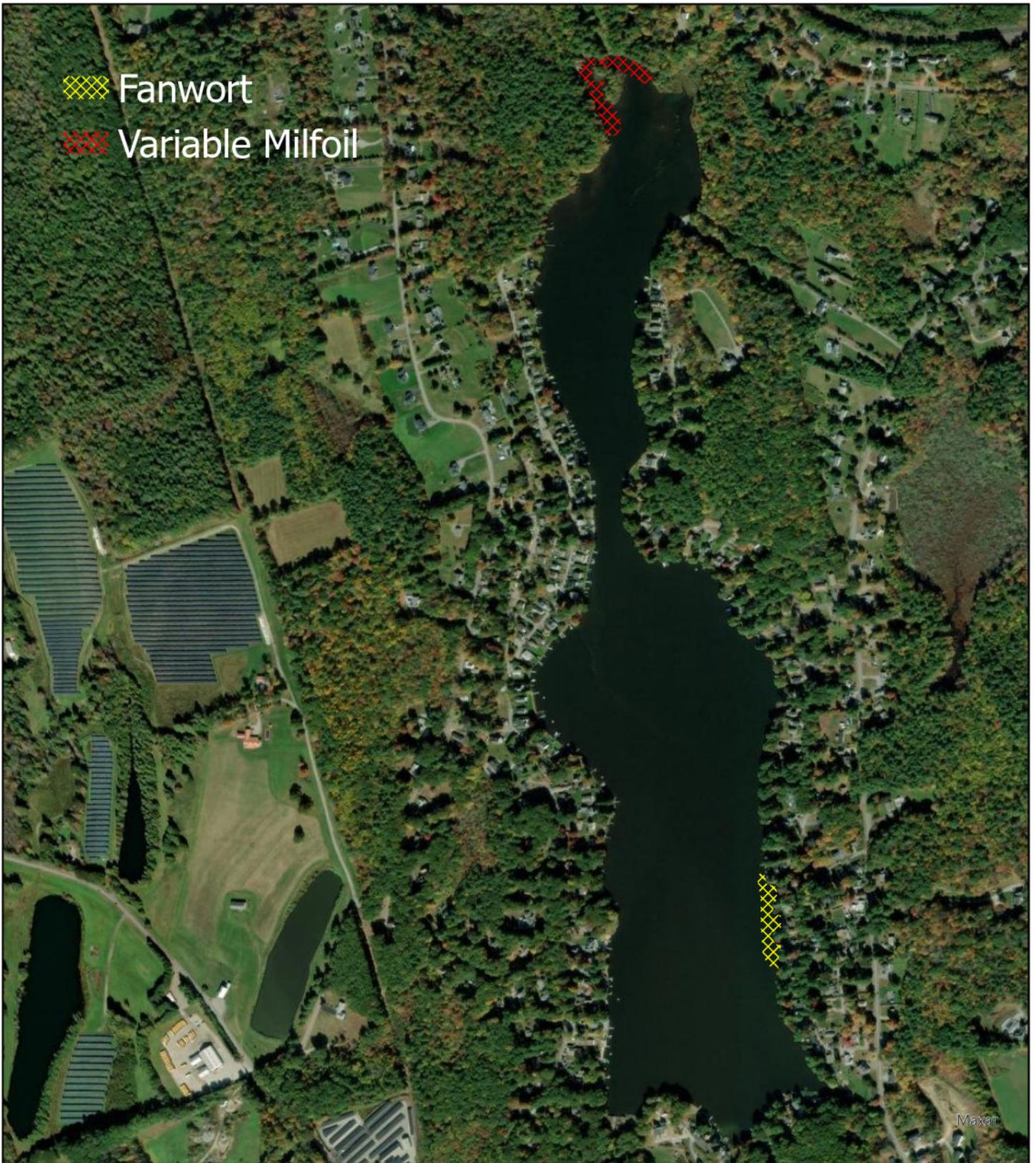
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by the Massachusetts Department of Agricultural Resources Pesticide Program in the aquatics category. Chemical treatments to Bordering Vegetated Wetlands (310 CMR 10.55(2)(a)) and Salt Marsh (310 CMR 10.32(2)) using general use pesticides and techniques that insure chemicals are not applied to water shall only be performed by an applicator currently licensed in Massachusetts Department of Agricultural Resources Pesticide Program. Chemical treatments using restricted use pesticides shall only be performed by an applicator currently certified by the Massachusetts Department of Agricultural Resources Pesticide Program.

- H. Issuance of this license does not release the licensee from liability resulting from the use of chemicals or from negligent or reckless application of chemicals specified in Section I.A of this license.
- I. Electronic notification of treatment must be made to the Massachusetts Division of Fisheries and Wildlife (jason.stolarski@mass.gov, jason.carmignani@mass.gov). Notification that the treatment was performed shall be made within 24 hours of treatment. The notification message should include waterbody, town, license number and chemicals used.
- J. No chemical treatment shall be conducted while a Massachusetts Department of Public Health advisory is in effect.
- K. In general, less than 1/3 of the lake area and less than 1/2 of the littoral zone should be targeted for herbicide treatment when native plants (particularly low growth forms) are dominant.



Glen Echo Lake
Invasive Species Distribution
Charlton, MA

Survey Date:
05/29/2025



