

Ashmere Lake
Hinsdale/Peru, Massachusetts
2023 Year-End Report

Report Prepared By:

SOLitude Lake Management
590 Lake Street
Shrewsbury, MA 01545

Report Prepared For:

Town of Hinsdale Conservation Committee
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Prepared on : November 17, 2023

In accordance with the existing aquatic plant management contract between SOLitude Lake Management and the Town of Hinsdale for Ashmere Lake in Hinsdale and Peru, the following document provides the 2023 survey and treatment results and management recommendations moving forward.

All management activities were consistent with the Order of Conditions (DEP# 181-77 Hinsdale; 260-0014: Peru), and the License to Apply Chemicals issued by the MA DEP – Office of Watershed Management (WM04-0000747).

2023 Management Program Summary:

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|--|------------|
| ● Received approved License to Apply Chemicals | 02/17/2023 |
| ● Early Season Survey | 06/01/2023 |
| ● Herbicide Treatment | 06/12/2023 |
| ● Interim Survey | 07/13/2023 |
| ● Late-Season Survey | 08/24/2023 |

PRE-MANAGEMENT SURVEY

On June 1st, SOLitude Lake Management Biologists conducted a pre-management survey at Ashmere Lake. The littoral zone was systematically toured by boat, and macrophytes were identified to the species level where possible. As with previous years, the purpose of this survey was to document and analyze the distribution of target species within the lake and to provide treatment recommendations, specifically regarding the extent of Eurasian watermilfoil (*Myriophyllum spicatum*), curly-leaf pondweed (*Potamogeton crispus*), and large-leaf



pondweed (*Potamogeton amplifolius*) (please see **Figures 1 & 2**, for invasive species abundance and large-leaf pondweed abundance, respectively).

Eurasian watermilfoil was only observed in a few trace patches during this survey. Curly-leaf pondweed was also only found in a few patches on the north end of the lake. Common reed (*Phragmites australis*) was identified in a couple patches on the eastern shoreline in historical locations.

Consistent with previous years, low-growing pondweeds dominated the vegetation assemblage throughout the littoral zone areas, occurring at trace to moderate densities. All vegetation species observed, as well as their overall density within the Lake, can be found below in **Table 1**.

Table 1: Observations of aquatic vegetation during early-season survey on June 1, 2023.

Common Name	Scientific Name	Overall Density
Arrowhead	<i>Sagittaria spp.</i>	Around shoreline
Bladderwort species	<i>Utricularia spp.</i>	Sparse to moderate around lake
Bur-reed	<i>Sparganium sp.</i>	Around shoreline
Clasping-leaf pondweed	<i>Potamogeton perfoliatus</i>	Sparse to moderate patches around lake
Common reed	<i>Phragmites australis</i>	Historical locations
Common waterweed	<i>Elodea canadensis</i>	Sparse throughout lake
Curly-leaf pondweed	<i>Potamogeton crispus</i>	Few trace to sparse patches
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	Few trace patches
Filamentous algae		Scattered around lake
Large-leaf pondweed	<i>Potamogeton amplifolius</i>	Trace to moderate patches around lake
Ribbon-leaf pondweed	<i>Potamogeton epihydrus</i>	Trace to moderate patches around lake
Spikerush	<i>Eleocharis spp.</i>	Trace in a few areas
Tapegrass	<i>Vallisneria americana</i>	Sparse in few areas
Watershield	<i>Brasenia schreberi</i>	Sparse among lilies in coves and on shoreline
Water starwort	<i>Callitriche sp.</i>	Trace in a few areas



Yellow waterlily	<i>Nuphar variegata</i>	Sparse among watershed in coves and on shoreline
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Red text indicates an invasive species

HERBICIDE APPLICATION SUMMARY

An herbicide treatment for targeted nuisance native and non-native growth was conducted on June 12th. Both the Town and Conservation Commissions as well as the lake management committee were notified. Notices were placed on the Town website.

Prior to treatment, the lake shoreline was posted with signs by the town, warning of the treatment and the subsequent, temporary water-use restrictions. For 24 hours following the treatment, the lake was closed for all activities. Per label instructions, irrigation was restricted for five days and domestic use was restricted for one week.

A total of 13 areas equaling approximately 28 acres corresponding to the areas of invasive and nuisance growth identified in the pre-treatment survey were treated with Tribune (diquat) and/or Aquathol-K (endothall) herbicides (**Figure 3**). Herbicide dosing depended on the type of target vegetation in each area. Treatment was performed using an airboat equipped with a calibrated spray system, which applied a subsurface treatment to avoid aerial drift. GPS was used to provide and document real-time tracking of the treatment boat to ensure that the herbicide was evenly applied throughout the treatment areas.

No fish mortalities or significant non-target impacts to other aquatic organisms were observed or reported.

INTERIM SURVEY

The interim survey was conducted by SŌlitude Biologists on July 13th to assess the treatment results and record the distribution of vegetation around the lake (**Figure 4**). Some patches of common reed were found on the shoreline in historical areas. Curly-leaf pondweed was not found during this survey, indicating a successful treatment and the end of the species' natural life cycle.

The same vegetation assemblage from the previous survey was identified again but coverage, especially in the treated areas, was significantly reduced. The few additions to the previous vegetation list include: southern naiad (*Najas guadalupensis*), slender naiad (*Najas flexilis*), thin-leaf pondweed (*Potamogeton pusillus*), cattails (*Typha spp.*), and muskgrass (*Chara spp.*).

Although some small areas of pondweed growth were observed in the interim survey, most of those areas were no longer at nuisance levels or were located in less-used areas of the lake. A mutual decision was made not to move forward with a follow-up treatment. One significant area of brittle naiad (*Najas minor*) was noted in the upper lake, but was located in an area that is not typically managed in order to provide fish/wildlife habitat.



LATE-SEASON SURVEY

On August 24th, SŌlitude Biologists performed a final, late-season survey to assess the overall management success and document the late-season aquatic vegetation assemblage (see **Figure 5**). Eurasian watermilfoil was not observed in the lake, but brittle naiad was found in the lake throughout an entire cove. The native species composition was again similar to the early-season and interim surveys with some additional species, including rush (*Juncus sp.*), water stargrass (*Zosterella dubia*), Robbins' pondweed (*Potamogeton robbinsii*), and invasive purple loosestrife (*Lythrum salicaria*).

MANAGEMENT RECOMMENDATIONS

Based on the results of the late season survey, the target species, curly-leaf pondweed and Eurasian watermilfoil, were successfully controlled and nuisance areas of pondweed species were desirably reduced. Moving forward, we recommend continuing to schedule the herbicide treatment early in the growing season to reduce the overall amount of biomass to eventually decompose at the bottom of the lake.

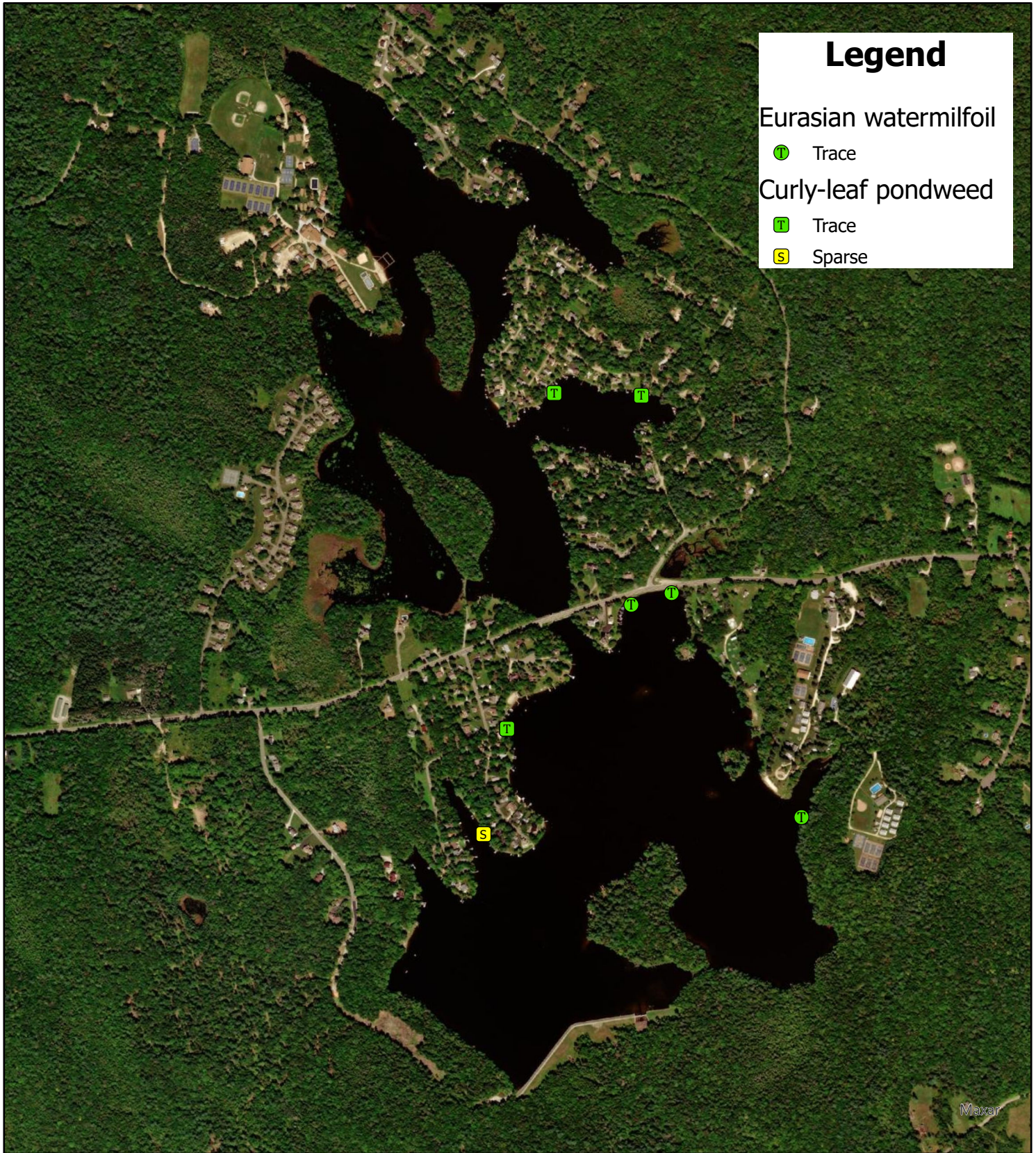
While the initial treatment serves to address invasive species as well as some later-emerging nuisance native species, we continue to recommend an interim survey and possible later season follow-up treatment to be conducted as needed based on conditions. As discussed with the Committee, the later season treatment, if needed, could be scheduled in a manner that would minimize disruption to the camps around the lake.

No treatment of the Phragmites has been conducted in several years so we recommend the Town consider spot-treatment in 2024 to control and prevent further spread of this invasive species.

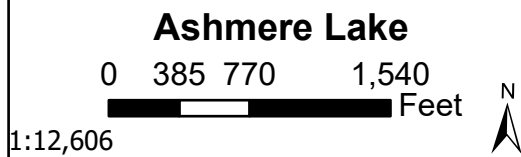
Pre- and post-management surveys should be maintained to document the distribution of nuisance native and non-native aquatic species in addition to native macrophyte assemblages.

Thank you for your continued collaboration, and we look forward to working with you again next season. If you have any questions about this report, please feel free to contact the office.

FIGURE 1: Pre-Management Survey Invasive Vegetation Density and Distribution



Ashmere Lake
Hinsdale/Peru, MA



Survey Date: 06/01/2023
Map Date: 06/05/2023
Prepared by: KV
Office: SHREWSBURY, MA

FIGURE 2: Pre-Management Survey Native Vegetation Density and Distribution - Big-leaf Pondweed

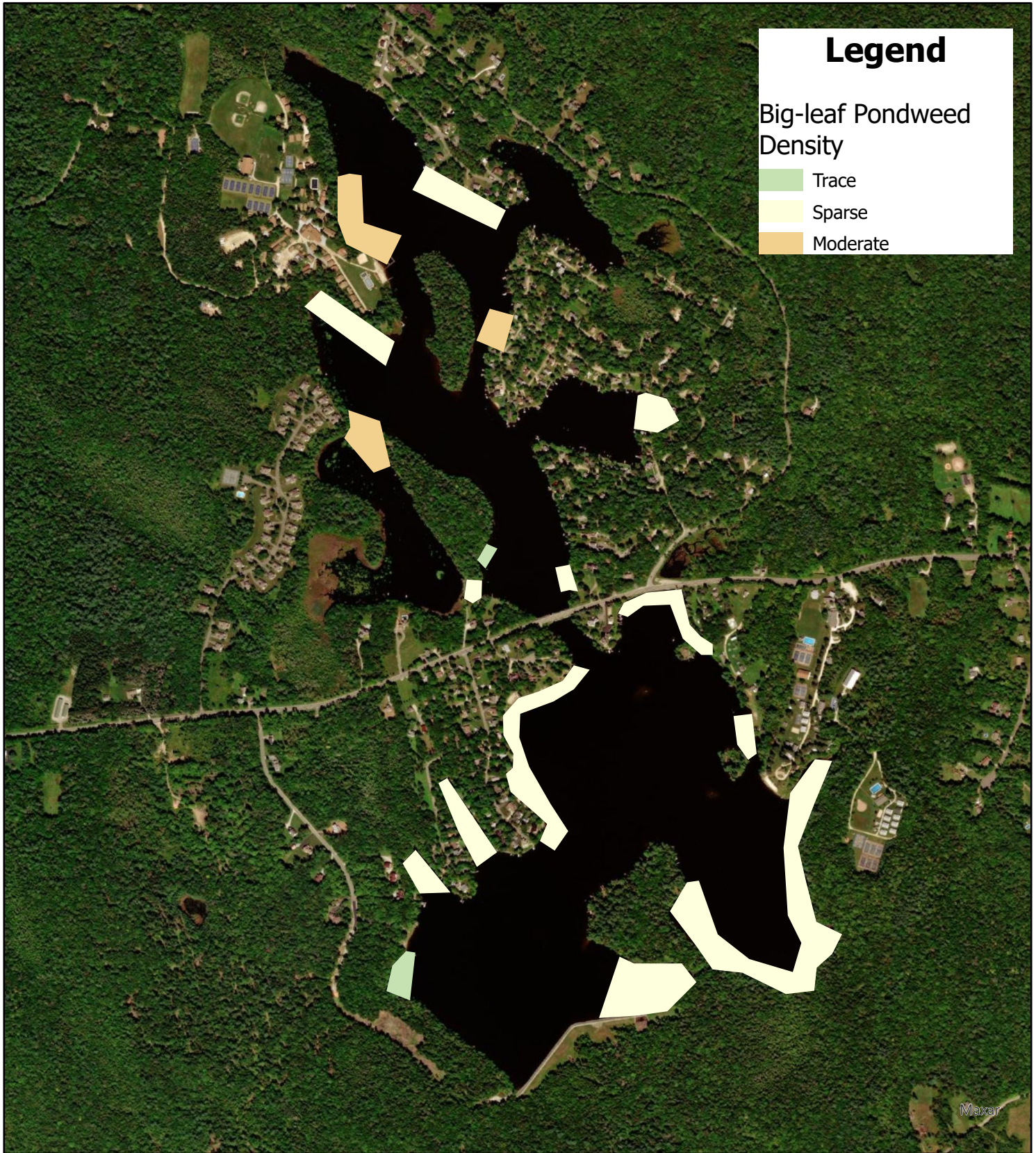
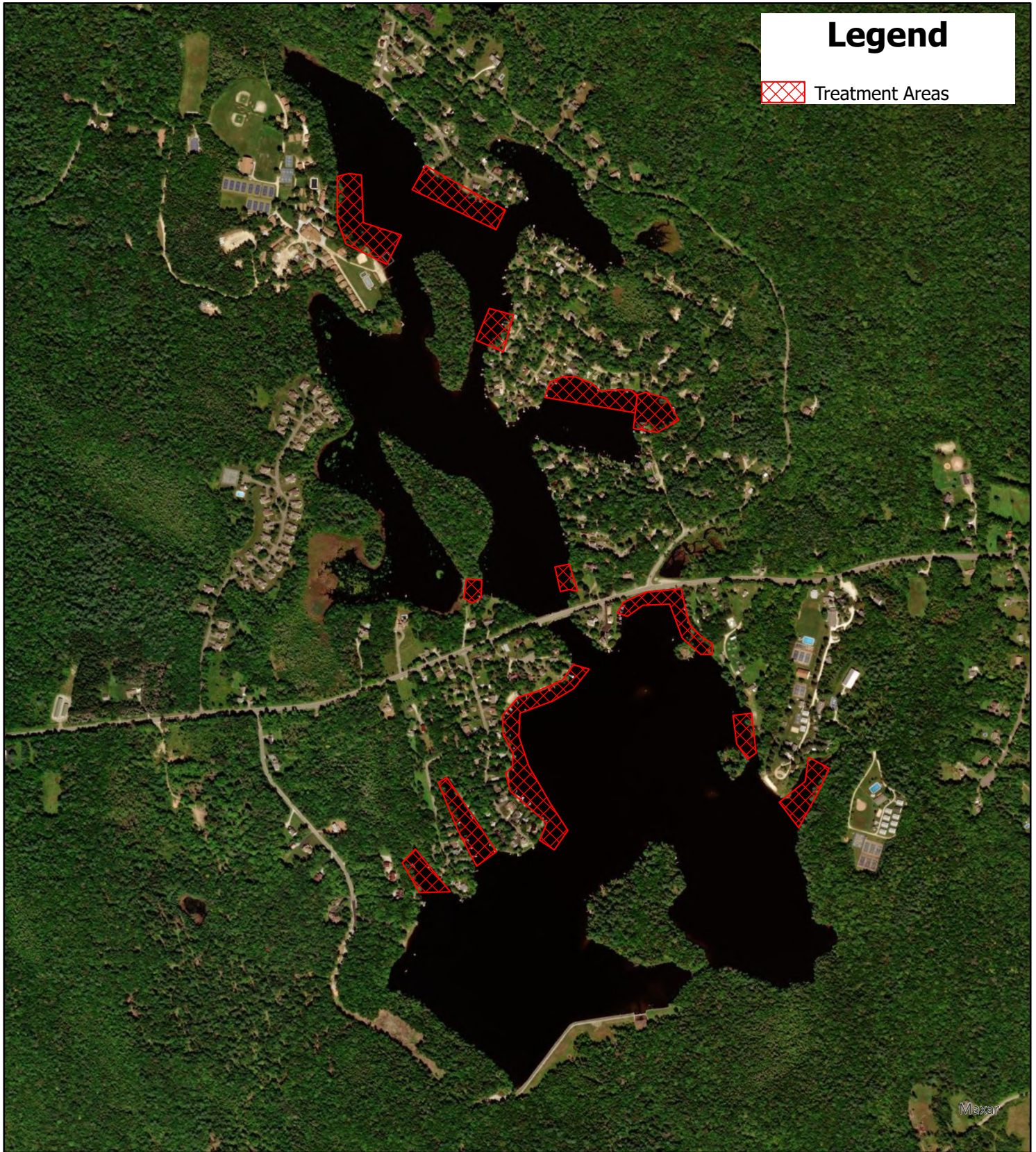
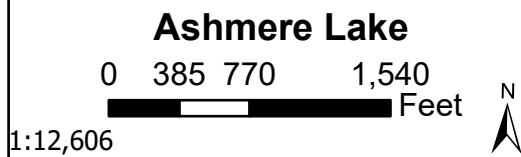


FIGURE 3: Treatment Areas - June 12, 2023

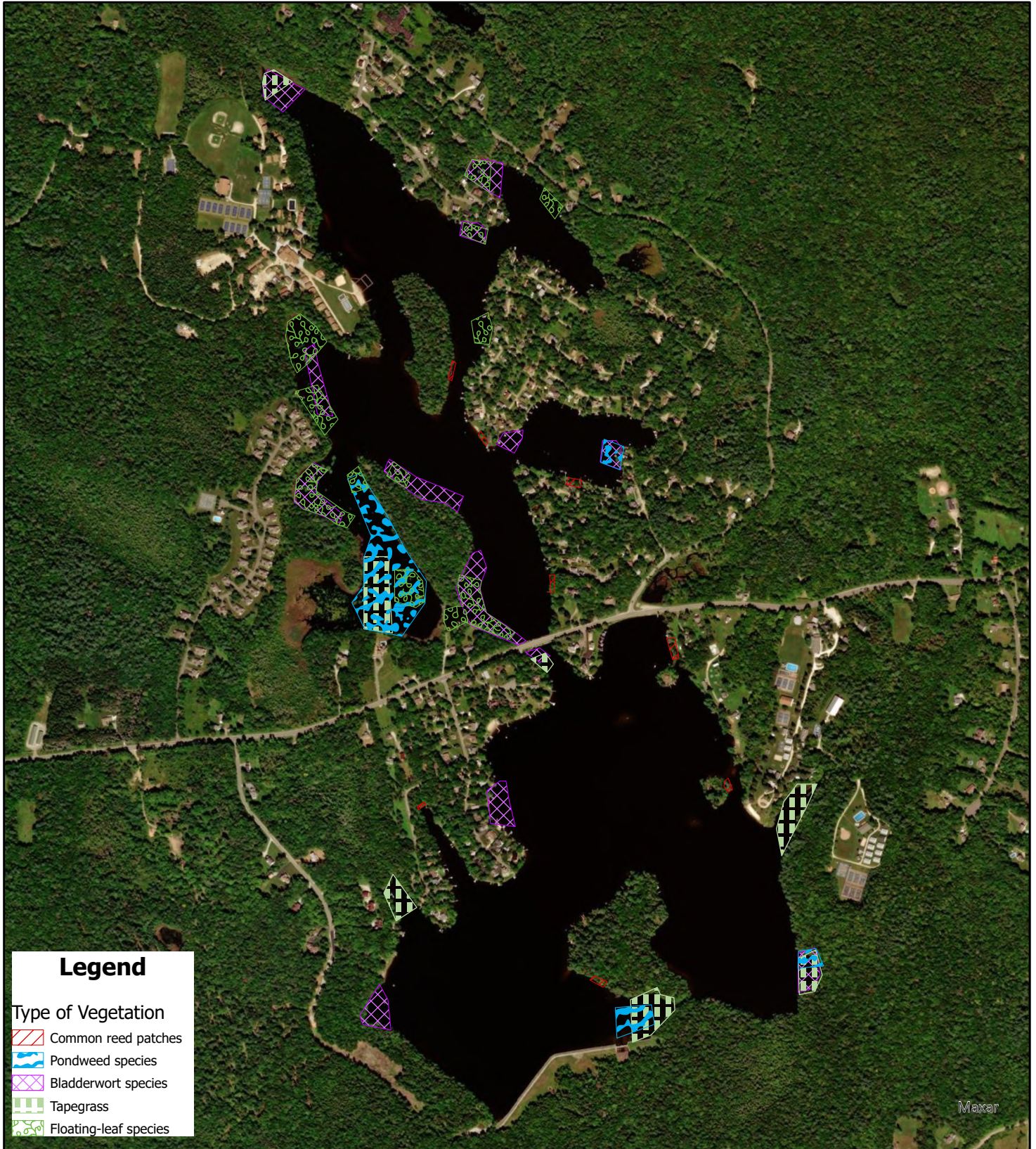


Ashmere Lake
Hinsdale/Peru, MA








Treatment Date: 06/12/2023
Map Date: 07/12/2023
Prepared by: KV
Office: SHREWSBURY, MA

**FIGURE 4: Interim Vegetation
Survey July 13, 2023**




Legend

Type of Vegetation


-  Common reed patches
-  Pondweed species
-  Bladderwort species
-  Tapegrass
-  Floating-leaf species

Ashmere Lake
Peru/Hinsdale, MA

Ashmere Lake

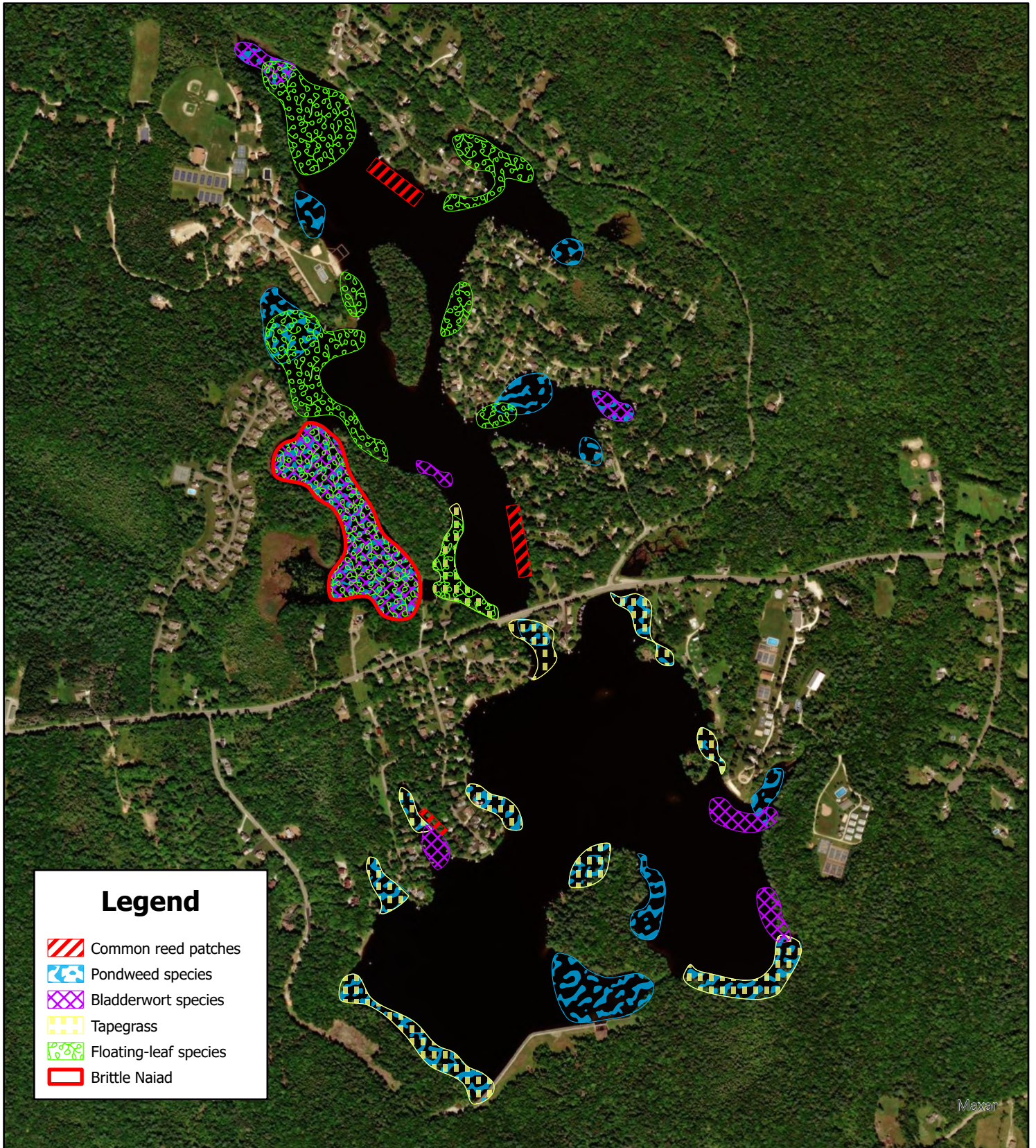
0 320 640 1,280
 Feet

1:12,615

N


Map Date: 7/24/2023
 File: Ashmere23_IntVeg
 Prepared by: KV
 Office: Shrewsbury, MA

FIGURE 5: Post Vegetation Survey August 24, 2023



Legend

- Common reed patches
- Pondweed species
- Bladderwort species
- Tapegrass
- Floating-leaf species
- Brittle Naiad

Ashmere Lake
Peru/Hinsdale, MA

Ashmere Lake

0 690 1,380
Feet

1:12,303

Survey Date: 08/24/2023
Prepared by: SB
Office: SHREWSBURY, MA