

2021 Aquatic Plant Management Report Sunset Lake Ashburnham, Massachusetts

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In accordance with the existing aquatic plant management contract between SOLitude Lake Management (SLM) and the Far Hills Association for Sunset Lake in Ashburnham/Winchendon, MA, the following document serves to provide this year's treatment and survey results and the management recommendations for next season. Management goals for the 2021 season included conducting pre-and post-management surveys, as well as treatments to manage nuisance and invasive species within the water body.

All management activities were consistent with the Order of Conditions DEP# 092-852 (Ashburnham) and DEP# 345-0598 (Winchendon), and the License to Apply Chemicals issued by the MA DEP – Office of Watershed Management (#WM04-0000399).

2021 MANAGEMENT SUMMARY

- Received approved License to Apply Chemicals March 30
- Pre-Treatment Survey June 1
- Herbicide Treatment June 21
- Post-Treatment Survey October 1

EARLY SEASON SURVEY

Consistent with the 2021-2023 contract, a littoral survey is conducted at the beginning of every management season by a freshwater biologist. A jon-boat was used to tour the littoral zone of Sunset Lake. During the littoral zone survey, three submersed species (purple bladderwort, common bladderwort, and aquatic moss) and one macro-alga (stonewort) were observed (listed in Table 1) along with various areas of benthic filamentous algae (refer to **Figure 1** for pre-treatment distribution of aquatic vegetation).



Table 1: Observed species in Sunset Lake

Classification	Common Name	Scientific Name
Submersed	Common bladderwort	<i>Utricularia vulgaris</i>
	Purple bladderwort	<i>Utricularia purpurea</i>
	Aquatic Moss	<i>Fontinalis spp.</i>
Macro-alga	Stonewort	<i>Nitella spp.</i>
	Filamentous algae	Filamentous spp.

HERBICIDE TREATMENT

A single herbicide treatment was conducted on June 21, 2021 for the management of bladderwort, and other nuisance pondweed species (refer to **Figure 2** for June treatment areas). The herbicide application was conducted with an airboat, utilizing the herbicide Tribune (diquat), which was then dispersed evenly throughout the treatment areas from the onboard mixing tank via a pump system and submersed hoses attached to a boom system. As with all treatment events that occur at Sunset Lake, the Far Hills Association, the Ashburnham Conservation Commission and the Winchendon Conservation Commission were notified at least 48 hours prior to the treatment date. Information pertaining to the listed treatment events, including treatment date, product used, and amount used is provided in Table 2 below.

Table 2: Herbicide treatment summary

Treatment Date	Product Used	Amount Used	Acreage Treated	Target Species
June 21st	Tribune	65 gallons	~50 acres	Bladderwort Pondweeds

Printed signs warning of the treatment and the associated temporary water-use restrictions were also posted along the shoreline of the pond. The treatment was completed by SOLitude's state certified applicators, and was conducted in accordance with the product label and permits issued by MA DEP. At no time during the treatment program were fish mortalities or significant non-target impacts to other aquatic organisms or wildlife either observed or reported.

POST-TREATMENT INSPECTION

A post-management vegetation survey was conducted on Sunset Lake on October 1st. A jon-boat was used to tour the littoral zone in depths between two and fifteen feet. A throw-rake and underwater camera were used to assist in gaining view of the entire water column. At the time of the survey, the bladderwort and stonewort were observed at lower densities than the June survey. Variable watermilfoil was not observed at either survey. Please refer to **Figure 3** for post-management survey results.

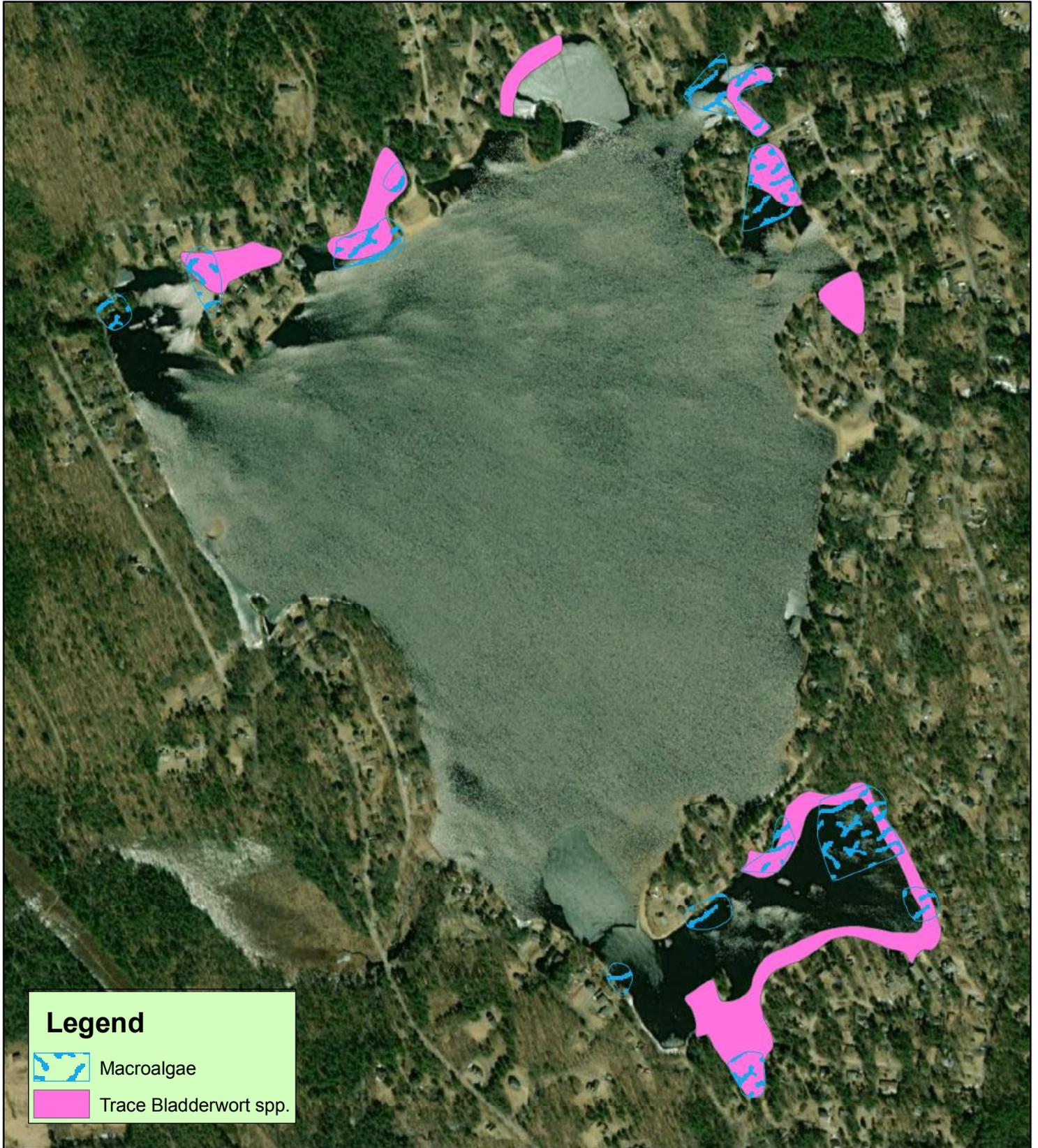
CONCLUSIONS/RECOMMENDATIONS

The 2021 treatment provided effective control of the targeted vegetation within Sunset Lake. Preventative spot-treatments in areas of historic watermilfoil and bladderwort presence will continue to be recommended to combat possible re-growth. Bladderwort is a



hearty plant species, which typically will remain at low-biomass along the bottom of the lake even after herbicide treatment. Treatment is important, however, to prevent the plant from attaining higher, nuisance levels of growth which would be problematic for recreational users of the lake.

Given the longstanding history of milfoil and bladderwort species within the water body, ongoing management will continue to be recommended to control these target species. As such, SLM recommends continuing the aquatic plant management program – both monitoring and herbicide treatments – in 2022. SLM recommends, as in 2021, commencing the herbicide treatments early in the growing season when vegetative biomass is low, allowing less time for reproduction and fragmentation. We look forward to continuing our working relationship with the Far Hills Association in the future.



Legend

-  Macroalgae
-  Trace Bladderwort spp.

Sunset Lake
Ashburnham, MA



Sunset Lake

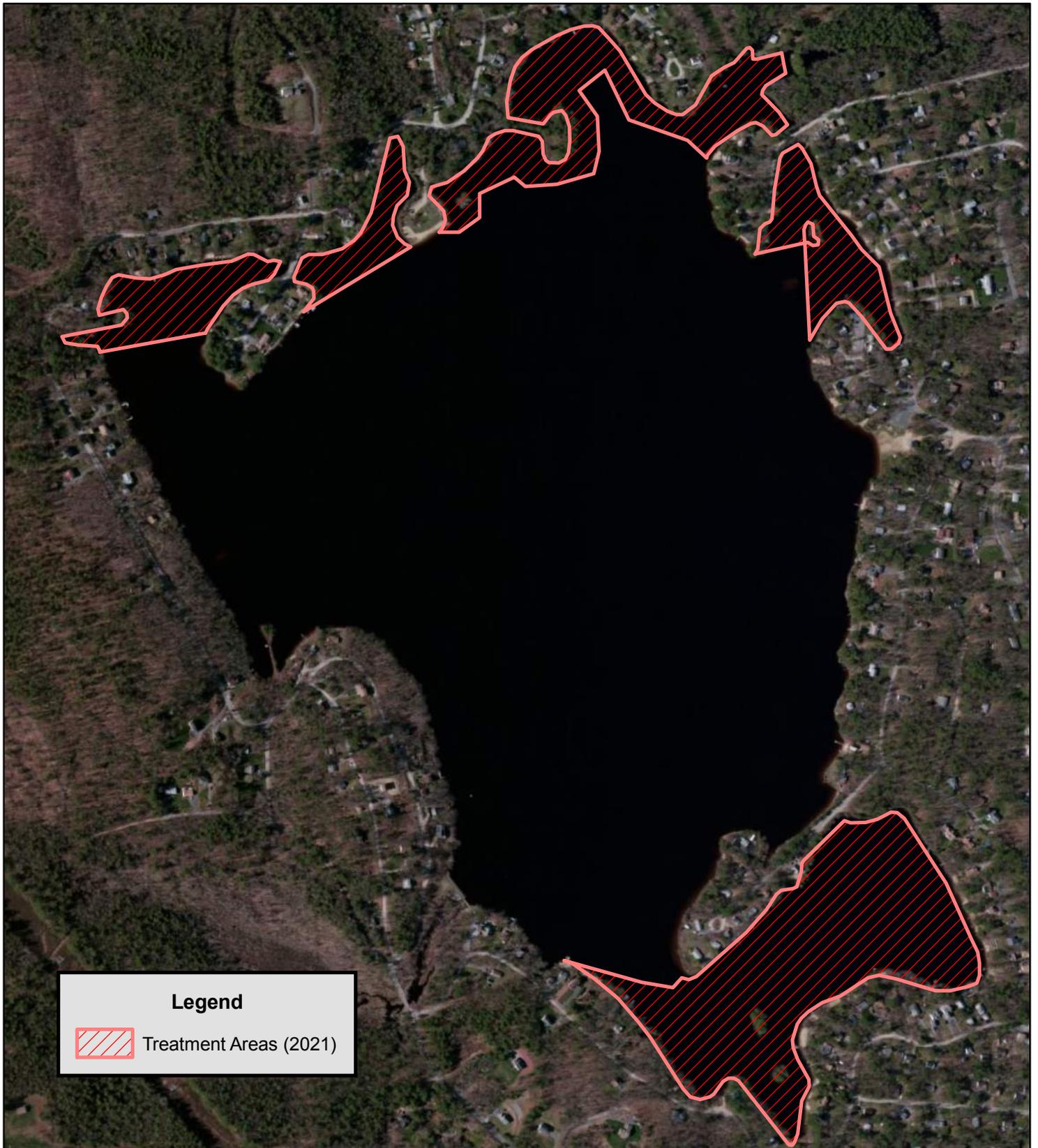
0 680 1,360 Feet

1:8,384



Map Date: 12/06/21
Prepared by: SC
Office: SHREWSBURY, MA

Figure 2: Proposed Treatment Areas



Legend

 Treatment Areas (2021)

Sunset Lake
Ashburnham, MA



Sunset Lake

0 600 1,200

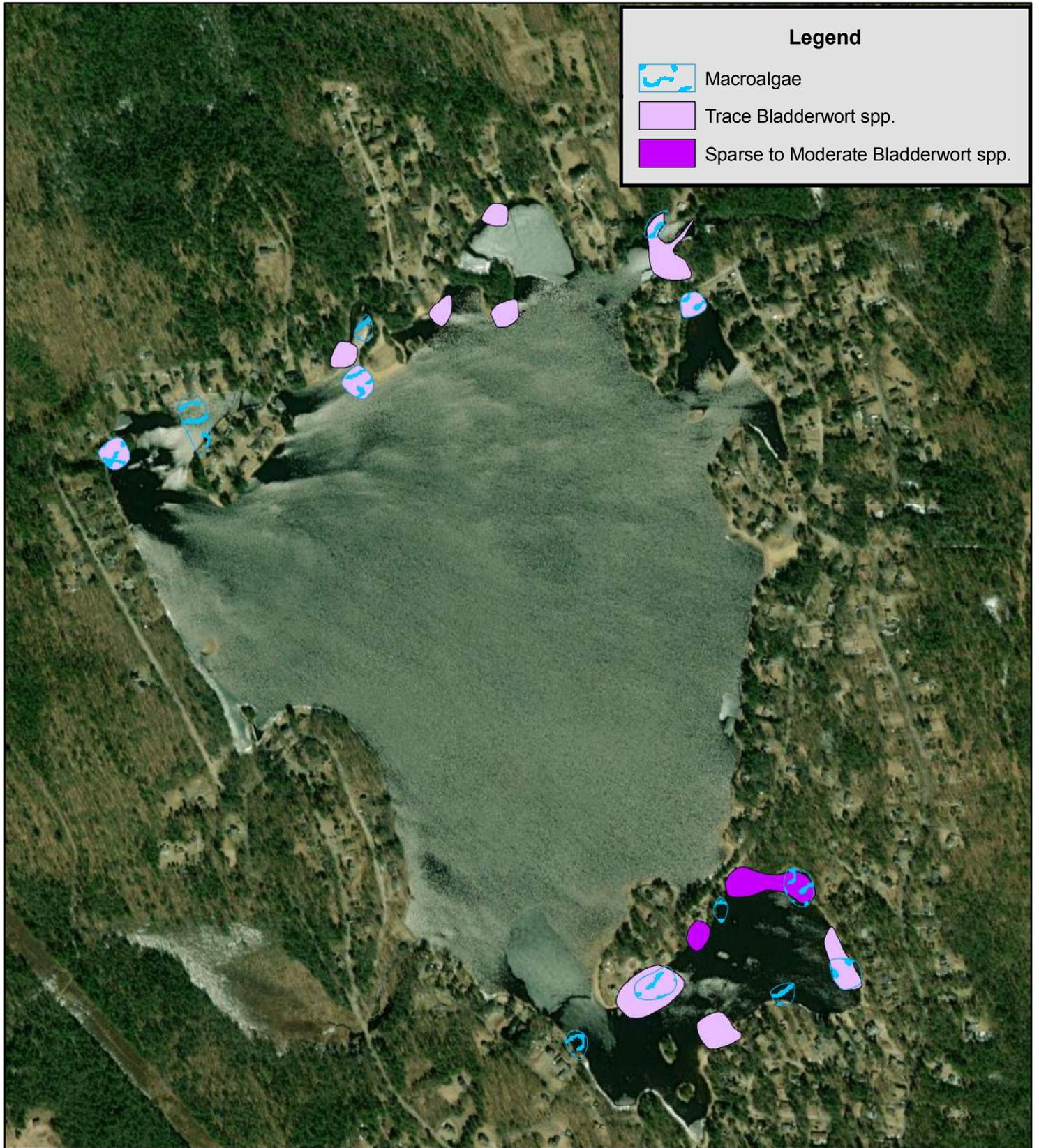


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Map Date: 12/08/2021
Prepared by: KV
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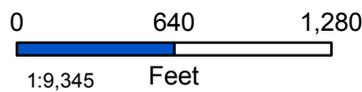
Figure 3: Post-Management Density and Distribution of Aquatic Vegetation



Sunset Lake
Ashburnham, MA



Sunset Lake



Map Date: 12/06/2021
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