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LAKE, POND & WETLAND MANAGEMENT

Staffordville Lake Association
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(860) 684-7556

Re: Staffordville Lake, Stafford, CT – 2022 Year End Report

Dear Association Members:

It is our pleasure to present a year-end summary report to both The Town of Stafford and Staffordville Lake Association members regarding the 2022 aquatic management program at Staffordville Lake. Staffordville Lake is approximately 149 – surface acres and has a reported average depth of 10 feet and a maximum depth of 16 feet. The Lake is primarily surrounded by both residential properties and woodlands. Residential properties tend to be most concentrated on the Southern and western shoreline. There are no public boat launches on the entire lake whereas there is a public beach located to the Southern end of the Lake.

Figure 1 Milfoil in Staffordville Lake prior to treatment

During the Summer of 2021, invasive variable milfoil *(Myriophyllum heterophyllum)* was documented scattered along the shoreline of the Lake. The goal of the 2021 program was to permit and plan for the upcoming management season in 2022. This would be accomplished by performing all applicable planning, permitting, surveys, treatments, and reporting.

All permitting, treatment, and survey tasks were completed in 2022. The table below provides the specific dates of each task. Below the table, each visit/task performed is described in additional detail.

Summary Of 2022 Management Activities

Date	Task/Description
May 26, 2022	Pre-treatment survey conducted to update areas of variable milfoil, and to guide treatment areas and timing
June 27, 2022	Received Final NDDB determination #202200061
June 29, 2022	Filed CT DEEP Aquatic Permit Application
July 28, 2022	Received CT DEEP Aquatic Permit #AQUA-2022-375
August 15, 2022	ProcellaCOR treatment performed to target invasive variable milfoil in all areas documented during the pre-treatment survey
September 28, 2022	Post-treatment survey completed to evaluate the effectiveness of the treatment and to guide future management

Pre-Treatment Survey – May 26, 2022

On May 26th, Aquatic Biologist, James Laccase and Field Assistant Grace Adams visited Staffordville Lake. A pre-management survey was conducted to determine the presence of aquatic plants, paying special attention to aquatic invasive species. Visual observation was paired with the use of a throw-rake to

determine presence and densities. Given the timing of the pre-management survey, many plants were at lower densities and were still actively growing. Observed was variable milfoil scattered along the entire shoreline. The densities of plants had drastically increased from 2021. Also observed throughout the Lake were bladderwort, waterlilies, watershield, and ribbon-leaf pondweed (all native). Water clarity had improved since our previous visits to Staffordville Lake. Minimal outflow was observed. Conditions during the survey were sunny, warm, and calm.

Procellacor Treatment – August 5, 2022

On August 15th, Co-Owner/Senior Aquatic Biologist, Colin Gosselin, and Field Assistant, Grace Adams, completed a site visit to Staffordville Lake. Also joining the visit was, Jon Gosselin, SePro Technical Specialist. SePro is the manufacturer of Procellacor herbicide. The visit consisted of performing a survey, collecting basic water quality data, and conducting a treatment. Conditions during the visit were warm and sunny.

Upon arrival, a survey was conducted using visual observation paired with a handheld GPS/ArcGIS Field Maps, as applicable. In the northern and southern points of the lake, there were dense densities of variable milfoil, while along the shoreline it was noted in trace to sparse densities and roughly 1' from the surface. Also, in both the northern and southern portions, there were dense densities of watershield, with scattered patches of waterlilies mixed in.

While on-site, basic water quality was collected using calibrated meters. The water temperature was consistent with other similar waterbodies we manage in the area, and the dissolved oxygen was sufficient to support fish and wildlife. 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 lake until it can no longer be seen by the observer. This depth of disappearance, called the Secchi depth, is a measure of the transparency of the water. The Secchi reading was 7’11”, which is indicative of great water clarity. Although there was great water clarity, it did have more of a brown hue than past visits.

As planned, and based on the survey, a treatment was conducted for the control of variable milfoil. The liquid herbicide, ProcellaCOR, was applied using a treatment boat equipped with a calibrated sub-surface injection system, which allows for even coverage within the treatment areas. In the treatment areas, we obtained excellent coverage. ProcellaCOR functions as a systemic, as well as a selective herbicide, which is designed for long term control of milfoil species while only having minimal impacts on most native species. Prior to treatment, neon signs noting the treatment, and any affiliated water-use restrictions were posted around the shoreline.

Overall, the treatment went extremely well, and we (including SePro) were extremely confident that excellent control of the milfoil would be achieved. It was a tremendous feat to get through the permitting process, within an area possibly containing a rare plant and we were extremely pleased to have been able to conduct this important treatment for the control of invasive milfoil.

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Post-Treatment Survey – September 28, 2022

Figure 2 Staffordville Lake during post-treatment survey

On September 28th, Co-Owner of Water & Wetland, LLC, Colin Gosselin, visited Staffordville Lake to conduct a post-treatment inspection. The purpose of the post-treatment inspection was to document the efficacy of the ProcellaCOR herbicide treatment performed in August. Additionally, the post-treatment inspection can be used to guide future management. Conditions during the visit were calm and sunny.

Upon arrival, a survey was conducted from a resident's pontoon boat, which included visual observation paired with a throw-rake. Accompanying Colin on the boat was two board members, Jon Gosselin who is a SePro technical specialist, and two employees of a marketing company hired by SePro. During the survey, the marketing company was filming for a future SePro promo video featuring the very successful treatment at Staffordville Lake. Interviews were also conducted and will be incorporated in the video, which is due to be released late in 2022.

Overall, the lake looked great, and the treatment was extremely successful. No variable milfoil (the target of the treatment) was found in any areas of the lake. One of the many benefits of ProcellaCOR herbicide is its selectivity to milfoil. While other native species can be minimally impacted during the season of treatment, most will bounce back quickly while the milfoil should be controlled from a nuisance level for several years. Many native plants were documented during the survey including tapegrass, elodea, waterlilies, and several native pondweed species. Some impacts were documented on waterlilies and watershield, however the pondweeds appeared extremely healthy even within treatment areas. The watercolor was slightly brown; however, visibility was still good.

Summary / 2023 Recommendations

2022 was a massive success at Staffordville Lake, given a challenging situation. Through a close partnership between Water & Wetland, Staffordville Lake Association, SePro, and the Town of Stafford, the treatment was able to be completed. Perhaps more impressive was the team effort to obtain both permission from Connecticut Natural Diversities Database (CT NDDB), and Connecticut Department of Energy and Environmental Protection (CT NDDB), given the presence of rare species.

ProcellaCOR provides multi-year nuisance milfoil control and based on this and the post-treatment survey, we do not anticipate the need for milfoil treatment in 2023. The treatment is also protected by the milfoil control guarantee provided by SePro. Permission from CT DEEP was obtained through 2023, but the permit will need to be renewed. Luckily, this process is fairly easy, and permission is obtained quickly. By having a valid permit in hand for 2023, we will be able to react in the unlikely event that nuisance milfoil regrowth is experienced. The Association is also responsible for the surveys required within the NDDB approval letter. We recommend continuing to work with George Knocklein of Northeast Aquatic Research (NEAR) on these survey and reporting tasks.

The obtained permit includes the use of ProcellaCOR only, but the Association should continue to think about the overall health of the waterbody. This includes educating members and abutters on best management practices specific to beneficial buffers, and best management practices specific to fertilizer use. It is also recommended that surveys specific to milfoil be conducted during the 2023 season, these

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could either be incorporated into NEAR's scope of services or performed by Water & Wetland. Lastly, we recommend some level of water quality sampling and/or algae ID and enumeration. By collecting additional data, more educated decisions to future management can be made.

It has been an absolute pleasure working with both Staffordville Lake Association and the Town of Stafford. We look forward to working with you for many years to come.

Sincerely,

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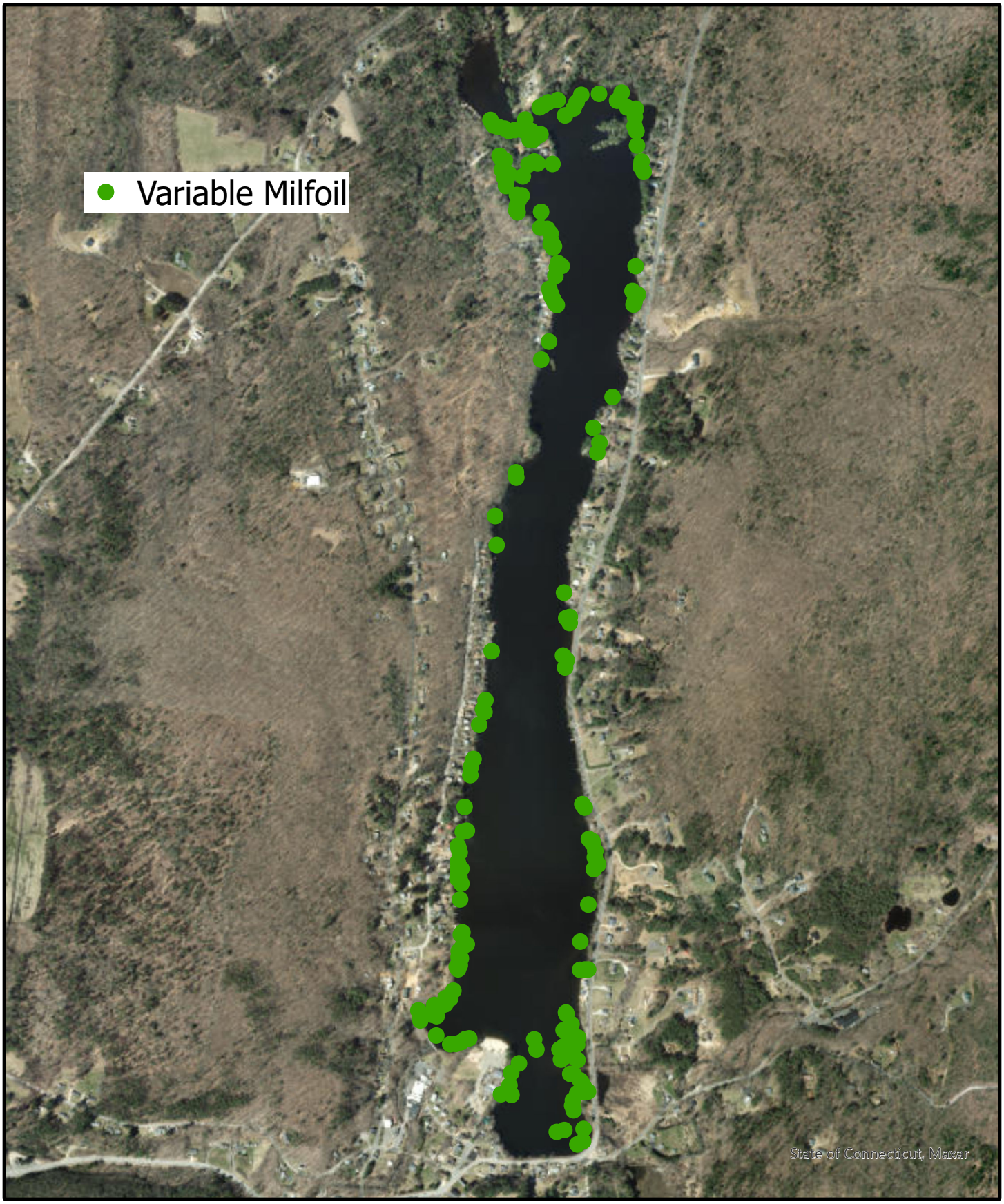
Attachments Include:
Pre-Management Survey Map



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Staffordville Reservoir
Variable Milfoil Distribution
Stafford Springs, CT

Survey Date
5/26/2022

Map Date
5/26/2022

N