

LAKE EDUCATION AND PLANNING SERVICES, LLC

# ECHO LAKE BARRON COUNTY

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2022 MANAGEMENT SUMMARY REPORT  
WDNR WBIC: 2630200

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## INTRODUCTION

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This report discusses lake management activities completed by the Echo Lake Association (ELA) and Lake Education and Planning Services (LEAPS) throughout 2022. The following list of education and management actions were completed in 2022.

- EWM management using ProcellaCor
- EWM and AIS meandering littoral surveys
- Spring Board Meeting
- ELA Annual meeting
- “Day on the Lake” educational event
- EWM fall survey - ERS

Each of these actions will be summarized in the following sections of this report.

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## 2022 EWM SURVEYS AND MANAGEMENT

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Eurasian water-milfoil (EWM) was discovered in Echo Lake in 2004, and the Echo Lake Association (ELA) has been actively managing this invasive exotic species since 2008. During the summer of 2021, the ELA and LEAPS decided to use a SCUBA diver to perform manual removal of all plants volunteers could find on the lake. That survey, conducted on July 16, 2021, located and eliminated approximately 50 plants – most of which occurred on the rock bar just southeast of the boat landing. During the 2021 fall survey conducted by Endangered Resource Services (ERS), approximately 50 more plants were found and removed– most of which were also concentrated on this rock bar (Figure 1).

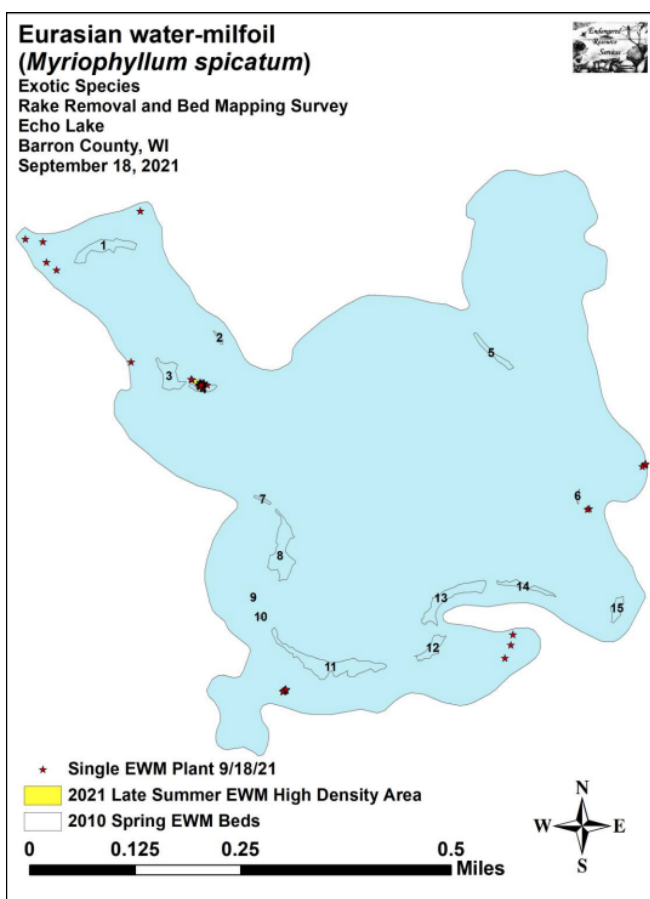
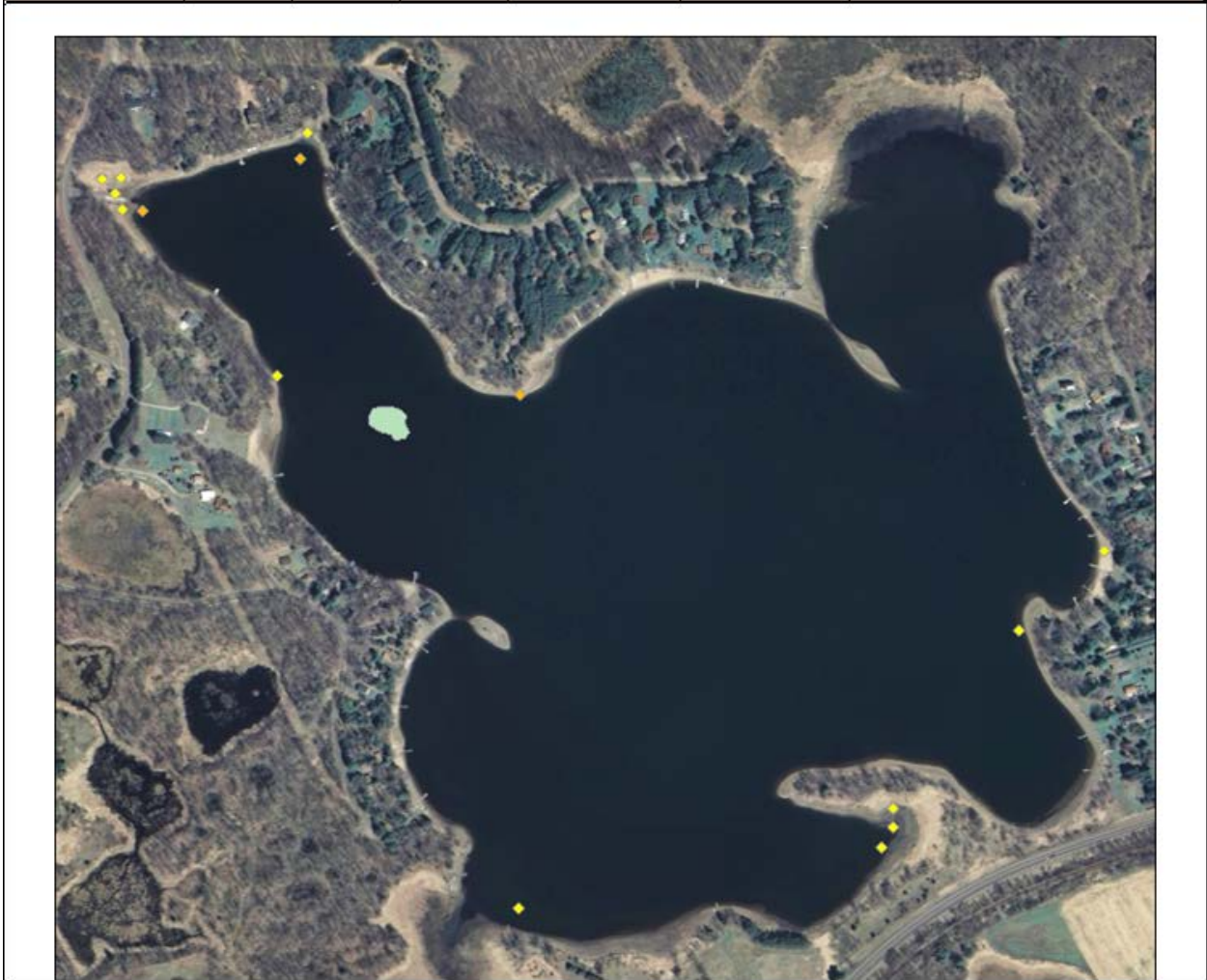


Figure 1: 2021 Fall EWM bed mapping results

Based on these findings, and a conference call with the ELA Board on March 24, 2022, a chemical control action using ProcellaCOR on a 0.34 acre area on top of the rock bar was proposed by the ELA and LEAPS (Figure 2). A WDNR chemical application permit was prepared and submitted on April 11, 2022 to chemically treat this 0.34-acre area (0.2% of the lake's total surface area) and was approved by the WDNR.

2022 Echo Lake Estimated ProcellaCOR Treatment Costs 05/21/2022						
New Name	Acres	Mean Depth (feet)	Acre-feet	Treatment PDU/acft	PDU Application	2022 Treatment Notes
Bed4-22	0.34	7.00	2.38	6.00	14.28	Has not been chemically treated for at least five years!
<b>Total</b>	<b>.34</b>		<b>2.38</b>		<b>14.28</b>	



**Figure 2: 2022 Proposed ProcellaCOR treatment on Echo Lake**

On May 21, 2022, LEAPS completed a pre-treatment readiness survey of the proposed treatment area, finding enough EWM to move forward with the proposed treatment. On May 27, 2022 Northern Aquatic Services (NAS) completed the treatment with ProcellaCor at a rate of 6 pdus/acre ft. The application was completed at 8:00am, air temperature was 65F, and water temperature was 62F. Wind was nearly calm.

Following the treatment, ERS was asked to conduct a late summer meandering littoral zone survey to look for, map, and, if possible, remove any remaining EWM. That survey was conducted on September 11, 2022. These data will be used to determine if and where EWM management might be considered in 2023.

The September survey covered transects totaling 21.4km (13.3miles) and found and cleanly rake removed two total EWM plants. Both of these plants were sub-canopied but had multiple stems (Figure 3). An exhaustive search of the immediate surrounding area and the locations where plants were identified in fall 2021 failed to turn up any additional plants. No plants were found in the 2019 or 2022 treatment areas either. These results were a sharp decline from the 50 plants found in September 2021 and the 19 plants found in August 2020, but similar to the five plants found in October 2019.

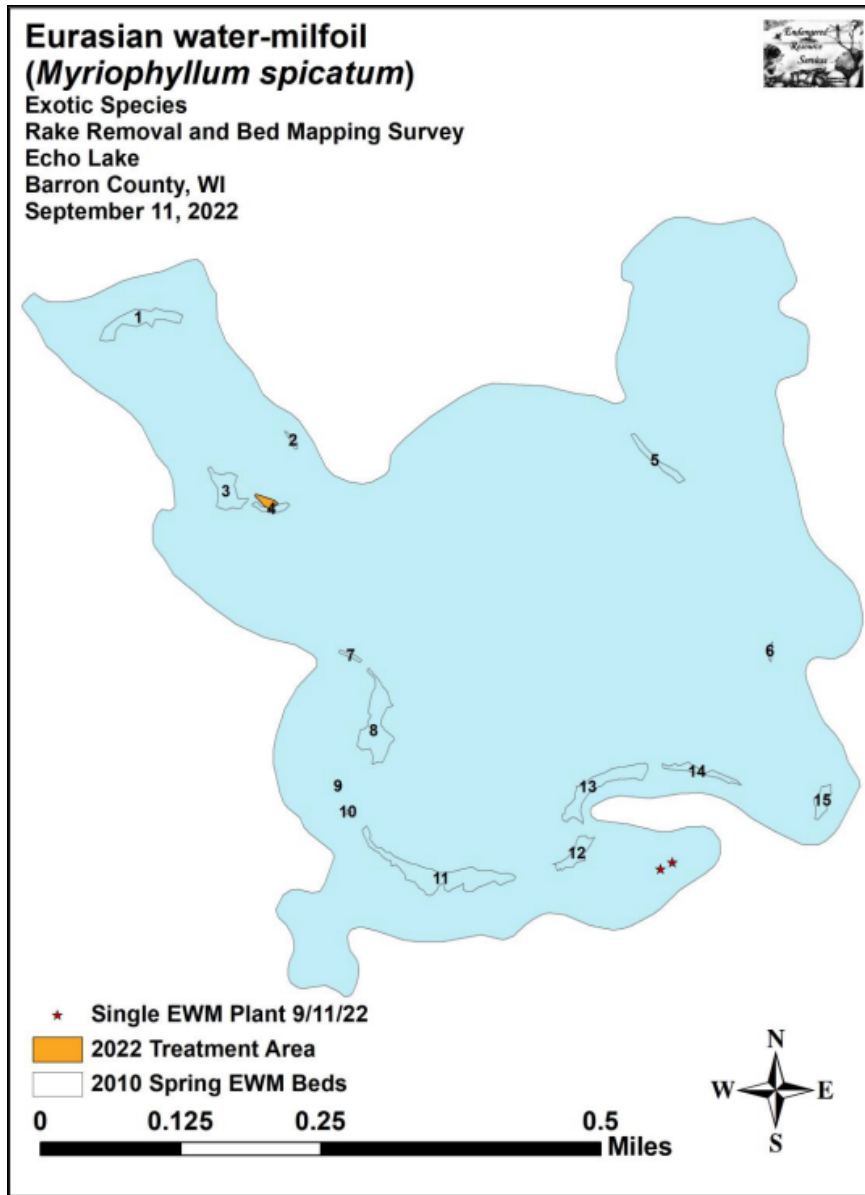


Figure 3: Fall 2022 EWM survey results (red stars represent the only two EWM plants found in the lake during the survey)

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## 2022 BOARD AND ANNUAL MEETINGS

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LEAPS personnel attended an Echo Lake Association (ELA) board meeting on May 14<sup>th</sup>, 2022. At the meeting 2022 chemical treatment plans were again discussed as was watercraft inspection at the Echo Lake public boat landing. A public Day-on-the-Lake was also planned. Notes and plans for the 2022 ELA Annual Meeting to be held on May 29, 2022 were discussed.

The Annual Meeting was held, but due a family celebration, Dave from LEAPS was unable to attend. Instead, he provided some materials to the ELA on water quality, invasive species, lake management, and plans for EWM management for them to share with their constituency.

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### **2022 DAY-ON-THE-LAKE EDUCATION EVENT**

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LEAPS personnel attended the 2022 Day-on-the-Lake event hosted by the ELA on July 9, 2022. LEAPS brought examples of different AIS to show participants before going out on the lake to search for and remove EWM. Several ELA volunteers participated in the event which included about an hour on shore, and then another two hours on a pontoon going around the lake looking for EWM. Only a small handful of plants were found, but enough to show the volunteers what it looked like in the water and how to remove it with a rake.

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### **2022 CLEAN BOATS CLEAN WATERS**

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The Echo Lake Association also participates in Clean Boats, Clean Waters (CBCW). They monitor the public boat landing and educate lake users on AIS and EWM. Watercraft inspection started on May 2022 and ended on September 15, 2022. ELA volunteers spent 29.0 hours at the landing. Paid inspectors spent another 112 hours at the landing for a total of 141 hours in 2022. In that time, only 49 boats were inspected and 102 people reached. Here were many days when volunteer and paid inspectors saw no boats during their time at the landing.

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### **2022 AIS MONITORING**

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Aquatic invasive species (AIS) monitoring has been completed by volunteers on Echo Lake for several years, and no new AIS have been discovered since EWM was detected in 2004. Volunteers are active and engaged in monitoring for EWM and removing any new infestations. Chinese mystery snails are the only other AIS to be reported in the lake. To stay ahead of the EWM infestation, as well as any other future AIS concerns, monitoring and education will continue in the future to prevent new introductions and limit their spread should they occur.

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### **GRANT APPLICATIONS**

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No grants were applied for in 2022 for 2023 and beyond.

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### **2022 CITIZEN LAKE MONITORING**

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Water quality data was collected as part of the Citizen Lake Monitoring Network program in 2022. Volunteers collected Secchi disk data of water clarity on five different dates in 2022. The average summer (July-Aug) secchi disk reading for Echo Lake - Deep Hole was 15 feet. Typically the summer (July-Aug) water was reported as clear and blue. Volunteers collected total phosphorus (TP) samples from the deep hole site on four different dates. Chlorophyll-a samples were collected on three different dates. The TP samples averaged 10.6 ug/L, and the chlorophyll-a samples averaged 2.1 ug/L. Both of these results are better than what they were in 2021, and place the lake in the oligotrophic range, which is generally better than the average results from previous years (Figure 3).

The overall average summer Trophic State Index (TSI) value for TP and chlorophyll was 40, suggesting that Echo Lake - Deep Hole was oligotrophic. This TSI suggests deeper lakes still oligotrophic, but bottom water of some shallower lakes will become oxygen-depleted during the summer. In general, there appears to be a four year trend of improving water quality in Echo Lake.

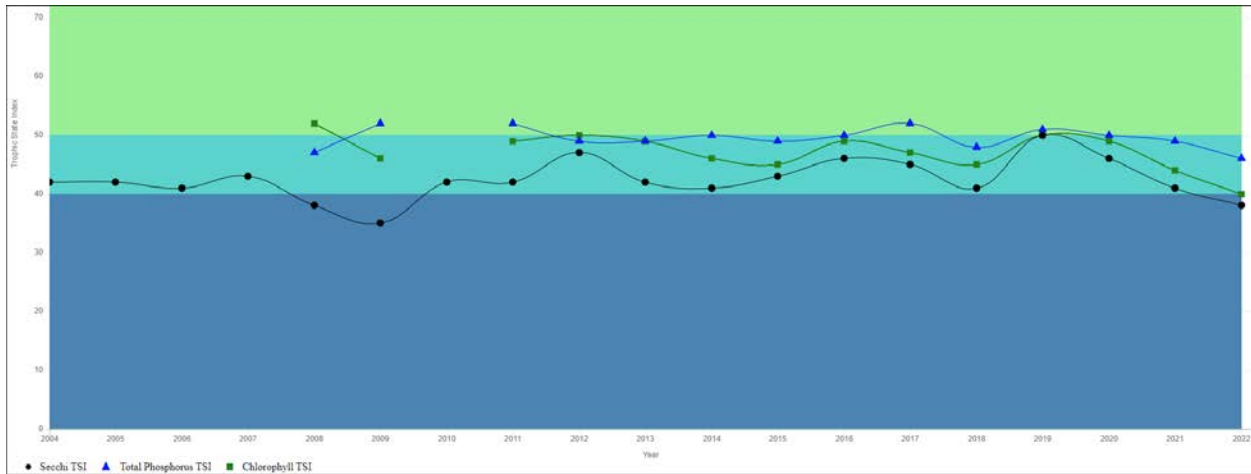


Figure 4: 2004-2022 Echo Lake Summer (July and August) TSI values for chlorophyll-a, TP, and water clarity

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### 2023 EWM PRELIMINARY MANAGEMENT PLANNING

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Based on the results of the ERS fall bed mapping survey, chemical control in 2023 will likely not be implemented. ELA volunteers and resource professionals will continue to survey the lake for EWM, removing what they find if possible. Diver removal will be considered if more than just a few isolated plants are found in 2023.

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### REFERENCES

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Berg, M. (2022). *Eurasian water-milfoil (Myriophyllum spicatum) Manual Rake Removal and Bed Mapping Survey Echo Lake – WBIC: 2630200 Barron County, Wisconsin*. St. Croix Falls, Wisconsin: Endangered Resource Services, LLC.