

LAKE EDUCATION AND PLANNING SERVICES, LLC

# RED LAKE DOUGLAS COUNTY

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2022 MANAGEMENT SUMMARY REPORT  
WBIC: 2492100

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RED LAKE ASSOCIATION  
WASCOTT, WI 54859

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## INTRODUCTION

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The Red Lake Association (RLA) is currently completing EWM management under the guidance of Lake Education and Planning Services (LEAPS) with financial support from a WDNR early detection and rapid response grant. The original grant was awarded in 2020 and was supposed to end December 31, 2021. However in late December 2021, the RLA requested an extension to that grant through the end of 2022. This report discusses lake management activities completed by the RLA and LEAPS throughout 2022. The following list of education and management actions were completed in 2022.

- Eurasian watermilfoil management
- Aquatic plant surveys
- Red Lake Association meetings
- Day-on-the-Lake educational event
- Watercraft inspection
- AIS monitoring
- Water quality
- New AIS control grant
- 2023 EWM management

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

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### 2022 EWM MANAGEMENT AND AQUATIC PLANT SURVEY WORK

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In July 2016, biologists from the Great Lakes Indian Fish & Wildlife Commission (GLIFWC) found a few EWM plants near the public boat landing on the lake's southwest side and near the Red Lake Resort in the northeast bay. A follow-up survey by the WDNR also located plants in these areas, and our lakewide EWM bed mapping survey on October 2, 2016 found ten separate beds totaling 1.18 acres. Since that time, the RLA's WDNR approved Aquatic Plant Management Plan has outlined manual removal by both volunteers and professionals as well as limited herbicide applications to control the infestation; and these small-scale treatments have occurred annually since 2017. Prior to 2020, chemical treatments were completed using 2,4-D based herbicides. ProcellaCOR was used for the first time in 2020. It was used again in 2021 and 2022 but in different areas.

Following a 2021 late summer bed mapping survey completed by Endangered Resource Services (ERS) that identified one bed of EWM along the north shore and multiple locations with individual plants (Figure 1), the RLA and LEAPS decided to treat two beds in 2022 totaling 0.84 acres with ProcellaCOR at 4-5 pdu's per acre-foot (Figure 2). A WDNR chemical application permit was completed and submitted to the WDNR on April 11, 2022, and it was approved.

Due to the small size of the treatments and limited budgets, pre and post-treatment surveys were not conducted; however, a pre-treatment readiness survey was completed by LEAPS on May 20, 2022. This survey identified enough EWM in the proposed treatment areas to move forward with management.

The treatment occurred on May 27th with Northern Aquatic Services (Dale Dressel - Dresser, WI) applying the ProcellaCOR. At the time of treatment, the reported water temperature was 64°F and the air temperature was 70°F. Wind speeds were clocked at 2-3mph out of the west.

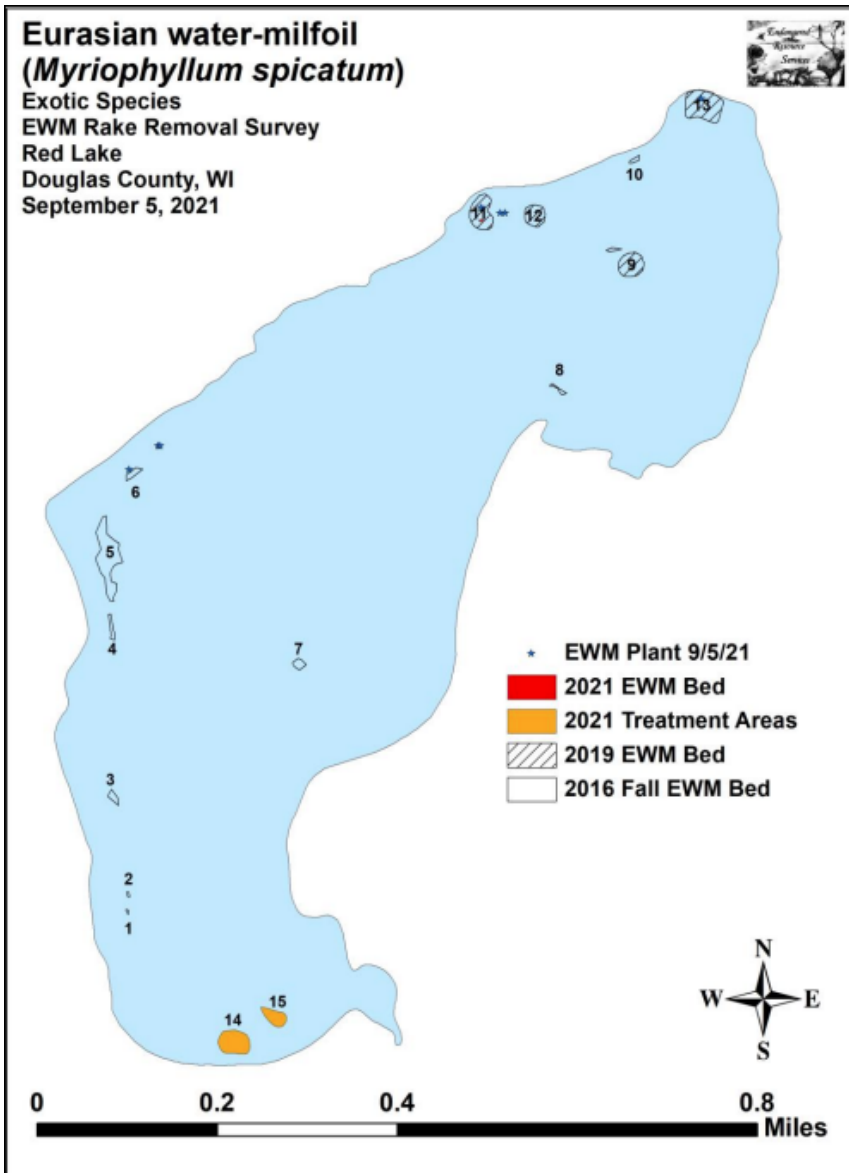


Figure 1: 2021 fall EWM bed mapping and removal

2022 Red Lake, Douglas County Final Spring EWM ProcellaCOR Treatment Proposal-5/20/2022								
Eurasian Watermifoil — ProcellaCOR								
Treatment Location	Acreage	Mean Depth (feet)	Volume (acre-feet)	PDU/Site	*PDU/Acre-Foot	FL OZ (1PDU =3.17 floz)	Gallons (128 fl oz)	NOTES
Bed6-22	0.3	8.5	2.55	12.75	5.0	40.42	0.32	Last chemically treated in 2017.
Bed11-22	0.54	6.75	3.65	14.58	4.0	46.22	0.36	Last chemically treated in 2020.
	0.84		6.20	27.33				
ProcellaCOR - 27.33 PDU @ \$70/PDU = \$1,913.10								
Total Treated Area = 0.84 acres								



**Figure 2: 2022 EWM chemical treatment**

On June 27, 2022, LEAPS completed a meandering survey of the entire lake looking for EWM. Windy conditions made the survey difficult and no EWM was located.

On September 4, 2022 ERS completed a meandering survey of the littoral zone of the lake with survey transects covering 22.9km (14.2 miles) spending extra time in the 2021 and 2022 treatment areas, looking at all areas that previously supported EWM beds, and searching in the northeast bay where fragments from elsewhere would likely be blown by the prevailing winds. Mostly sunny skies and calm winds allowed ERS to see down 7-8ft into the water column – slightly better than normal due to the exceptionally good conditions. No evidence of EWM was found within the 2021 treatment areas, but six individual plants were rake removed from surrounding areas of the south bay. EWM plants were found in each of the 2022 treatment areas. There are likely several reasons for this. One, “reseeding” from downwind beds, and two, regrowth of EWM that was not entirely killed by the ProcellaCOR application in 2022. The 2022 treatment only applied ProcellaCOR at 4-5 pdus/ac-ft. Treatments in 2020 and 2021 applied ProcellaCOR at 6-8 pdus/ac-ft. Significant areas of EWM were also found along the western shoreline of the lake in areas that haven’t seen more than a handful of plants in since 2016 (Figure 3).

In total, eight areas covering 0.45 acre (0.12% of the lake’s surface area) were mapped. The smallest beds that were mapped book-ended the 2022 eastern treatment area. Each was <0.01acre and was little more than a canopied super cluster of plants. The largest bed covered much of the western 2022 treatment area; although technically, this 0.25-acre area wasn’t a true bed as most plants weren’t canopied and the mean density was <1. The presence of so many

new beds was disappointing; however, the total area impacted continues to be relatively small and on the low end of what has been found in past years (Table 1).

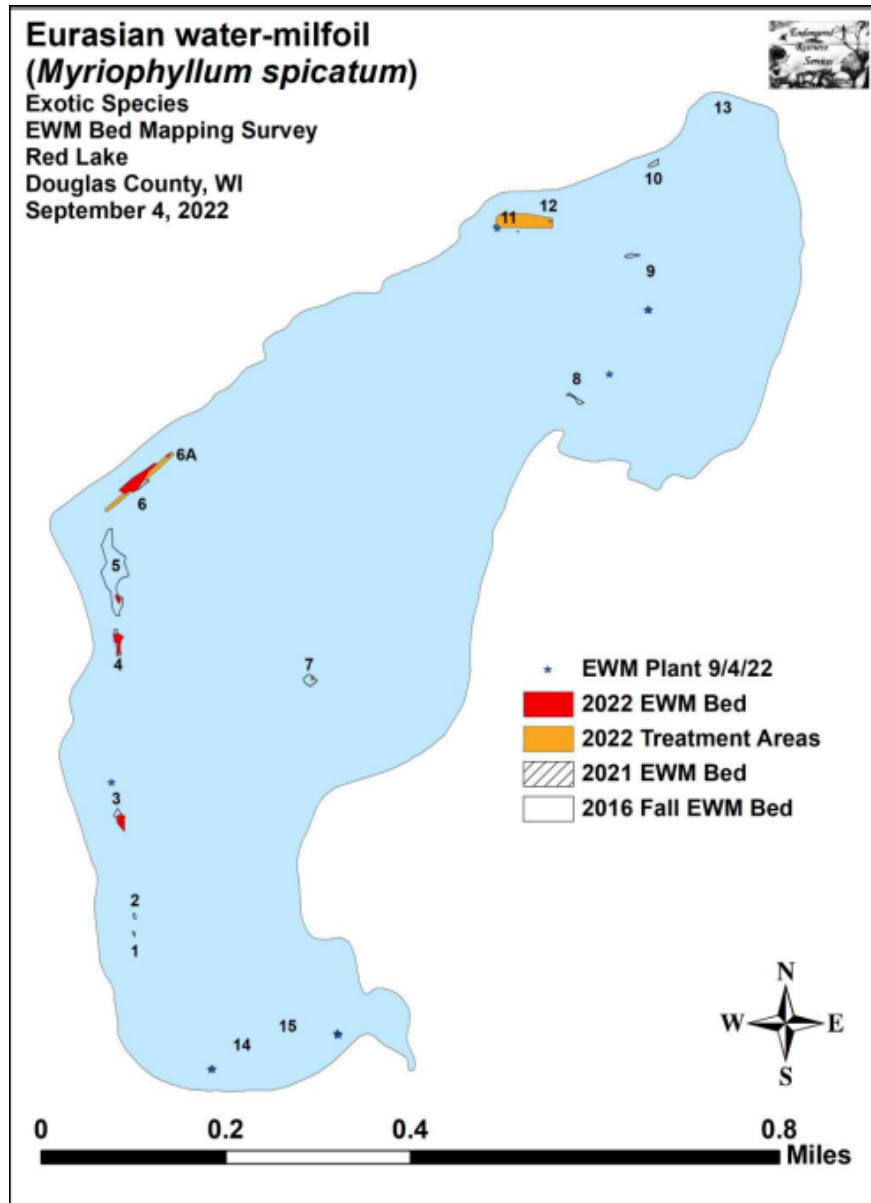


Figure 3: 2022 Fall EWM bed mapping results



Table 1: Historic EWM fall bed mapping results

Bed Number	2022 Area in Acres	2021 Area in Acres	2020 Area in Acres	2019** Area in Acres	2018 Area in Acres	2017 Area in Acres	2016 Area in Acres	2021-22 Change in Acreage
1	0	0	0	0	0	0	<0.01	0.00
2	0	0	0	0	0	0	<0.01	0.00
3	0.07	0	0.03	0	0	0	0.06	0.07
4	0.09	0	<0.01	0	0	0	0.06	0.09
5	0.02	0	0	0	0.01	0.09	0.83	0.02
6	0.25	0	0	0	0	0	0.07	0.25
6A	0.01	0	0	0	0	0	0	0.01
7	0.01	0	0	0	0.04	0	0.07	0.01
8	0	0	0	0	0	0	0.03	0.00
9	0	0	0	0.39	0	0	0.03	0.00
10	0	0	0	0	0	0	0.03	0.00
11	<0.01	0.01	0	0.49	0	0	0	-<0.01
12	<0.01	0	0	0.29	0	0	0	<0.01
13	0	0	0	0.76	0	0	0	0.00
14	0	0	0.49	0	0	0	0	0.00
15	0	0	0.11	0	0	0	0	0.00
<b>Total</b>	<b>0.45</b>	<b>0.01</b>	<b>0.63</b>	<b>1.93</b>	<b>0.05</b>	<b>0.09</b>	<b>1.18</b>	<b>0.44</b>

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### 2022 RLA ANNUAL MEETING

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On May 28, 2022, the RLA hosted its annual association meeting. LEAPS was not able to attend this meeting due to a prior family engagement.

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### 2022 AUGUST DAY ON THE LAKE AIS EDUCATION EVENT

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The RLA hosted a Day on the Lake AIS Education Event on August 20, 2022. Several tables were set up with EWM “look-a-likes” – hybrid watermilfoil, northern watermilfoil, coontail, and water marigold. Participants were given the opportunity to learn to identify the plants. Then, that was put to use on the lake on a pontoon ride that allowed participants to engage with the water and plants using their new knowledge. LEAPS personnel educated constituents on general AIS topics, focusing on EWM, purple loosestrife, and zebra mussels. Topics covered included identification and removal methods. Survey work during the Day-on-the-Lake pontoon ride only located a couple of EWM plants in the area between the docks by the Red Lake Resort.

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### 2022 CITIZEN LAKE MONITORING

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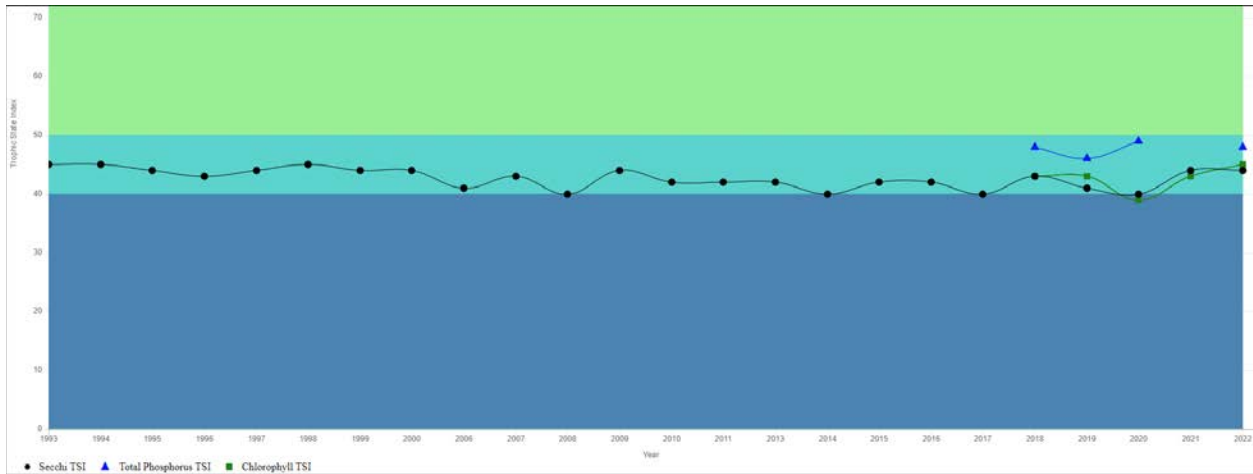
Red Lake - Deep Hole was sampled four different days during the 2022 season. Parameters sampled included water clarity, temperature, total phosphorus, and chlorophyll-a. The average summer (July-Aug) secchi disk reading was 10.25 feet. Typically the summer (July-Aug) water was reported as clear and blue.

Chlorophyll-a samples were collected three times in 2022. The average summer chlorophyll was 3.9µg/l. Total phosphorus was also collected three times in 2022. The summer total phosphorus average was 12.5µg/l. Lakes that have more than 20µg/l of total phosphorus may experience noticeable algae blooms.

The overall Trophic State Index (based on chlorophyll) for Red Lake - Deep Hole was 45. The TSI suggests that Red Lake - Deep Hole was mesotrophic in 2022 (Figure 4). Mesotrophic lakes are characterized by moderately clear

water, but have an increasing chance of low dissolved oxygen in deep water during the summer. These conditions are generally the norm for Red Lake water quality.

LEAPS supports the collection of these data and uses it to inform management decisions and educate RLA members and lake users about the lake.



**Figure 4: 1993-2022 Red Lake Summer (July and August) TSI status**

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## AIS MONITORING AND WATERCRAFT INSPECTION

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No watercraft inspection was completed at the Red Lake boat landing in 2022. After several years of contracted CBCW, the hired inspector requested payment that the RLA was no longer willing to sustain. Aquatic invasive species (AIS) monitoring has been completed by volunteers on Red Lake for several years, and no new AIS have been discovered since EWM was detected in 2016. Survey work was done in June and again in August. Volunteers are active and engaged in monitoring for EWM and removing any new infestations. 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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## 2022 TWO YEAR AIS POPULATION CONTROL GRANT APPLICATION

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In late July 2022, the RLA decided to apply for AIS population control grant funding to help support a new ProcellaCOR treatment in 2023; and to update the Aquatic Plant Management Plan for Red Lake. On September 15, 2022 a pre-grant application was submitted to the WDNR. On November 15, 2022, a final grant application was submitted. Whether this grant will be awarded or not is still up in the air, with notice not expected before at least February 1, 2023.

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## 2023 EWM PRELIMINARY MANAGEMENT PLANNING

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Eurasian water-milfoil continues to occupy only a small percentage of the lake’s surface area, but it is widely-established making eradication an unrealistic expectation. With this in mind, continuing to work to control its spread in the most cost effective manner possible, while simultaneously minimizing its impact on the lake’s aquatic ecosystem will likely continue to be important goals for the lake association moving forward.



Based on the results of the ERS fall bed mapping survey, the RLA is proposing a small chemical treatment in 2023 using ProcellaCOR at a higher application rate. As mentioned, a small-scale population control grant application has been submitted to the WDNR to support a 2023 treatment that at the moment includes 1 bed totaling 0.54 acres on the west shore. In addition to chemical control in 2023, physical removal using rake and/or scuba diver will be implemented. RLA volunteers and resource professionals will also complete several search and rake-remove surveys.

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## REFERENCES

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Berg, M. (2022). Eurasian water-milfoil (*Myriophyllum spicatum*) Late Summer Bed Mapping Survey Red Lake (WBIC: 2492100) Douglas County, Wisconsin