



Native Aquatic Plants Surfacing in Clearwater Lake on June 29, 2023

***DRAFT***

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## **Curlyleaf Pondweed and Eurasian Watermilfoil Delineation and Assessment for Clearwater Lake, Wright County, 2023**

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	<b>Delineation</b>	<b>Treatment</b>	<b>Assessment</b>
CLP	May 11, 2023	No treatment	June 29, 2023
EWM	June 29, 2023	No treatment	Pending

**Prepared for:**  
**Clearwater Lake Property  
Owners Association,  
Annandale, Minnesota**



**Prepared by:**  
**Steve McComas  
Blue Water Science  
St. Paul, MN 55116**

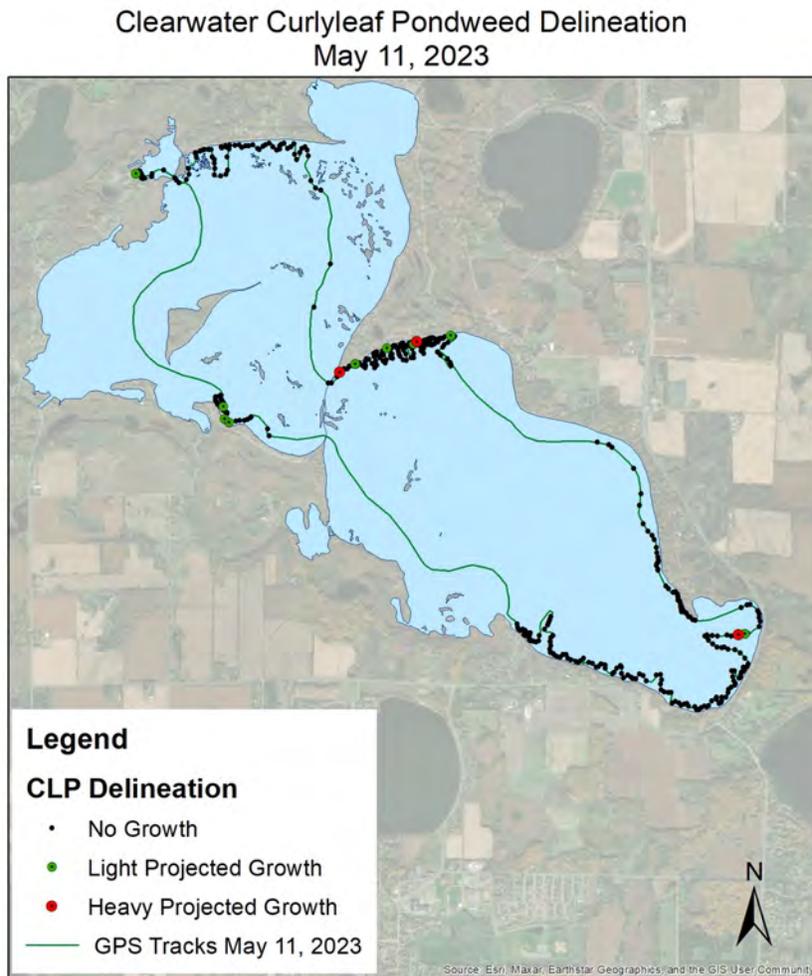
**July 13, 2023**

# Curlyleaf Pondweed and Eurasian Watermilfoil Delineation and Assessment for Clearwater Lake, Wright County, 2023

## Summary

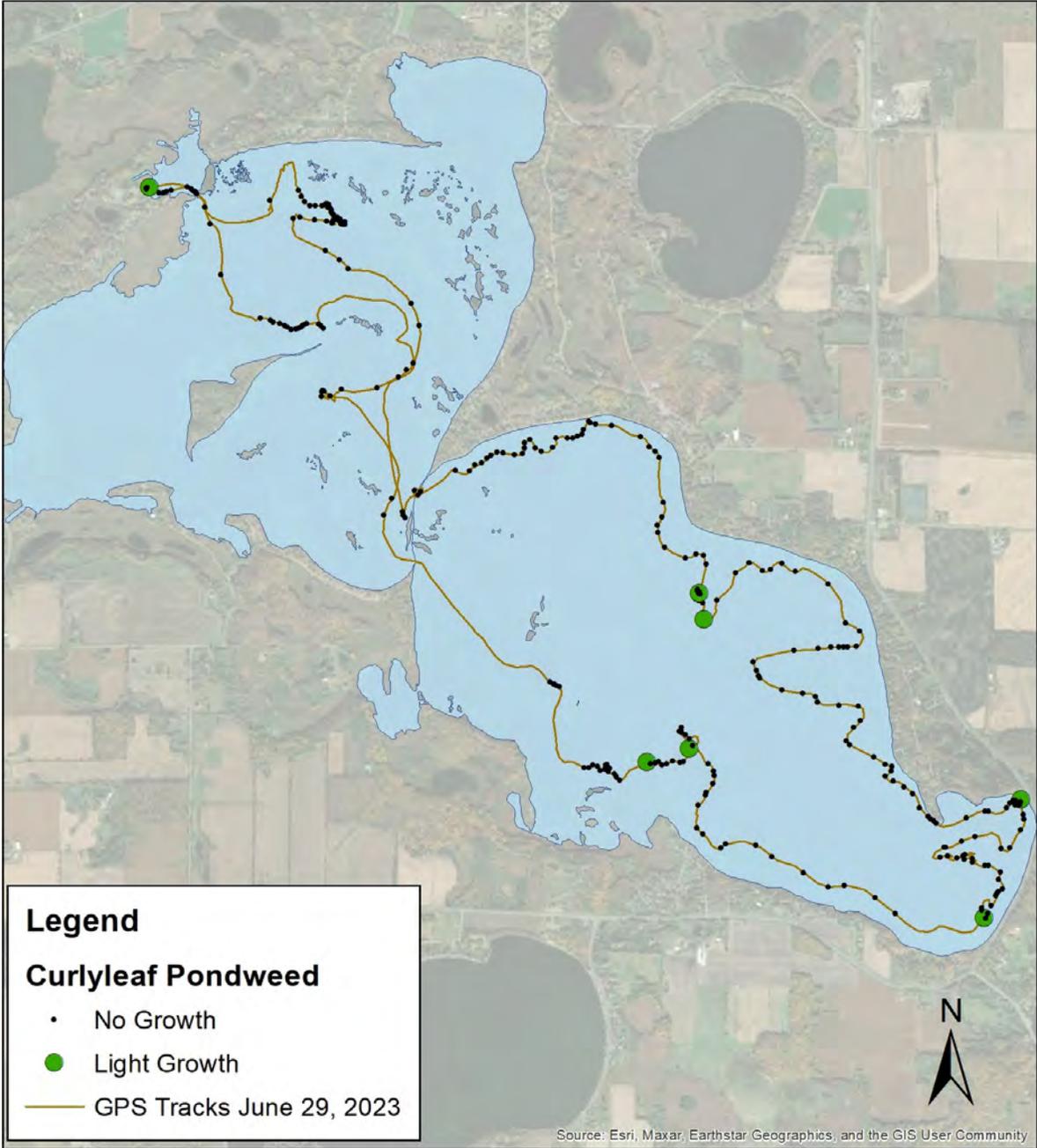
**Curlyleaf Pondweed (CLP) Delineation and Assessment:** Clearwater Lake (MnDNR ID#86-025200) is a 3,189 acre lake in Wright County, Minnesota. Early season CLP distribution and abundance were evaluated May 11, 2023 (Figure 1). Curlyleaf pondweed was found at 12 locations with growth densities of light to heavy. Based on the moderately light CLP growth no treatment was recommended for 2023.

A CLP assessment was conducted on June 29, 2023 which would be peak CLP abundance timeframe. The June CLP assessment found CLP in 7 areas with light growth. No heavy or moderate CLP growth was observed in 2023 (Figure 2).



**Figure 1. DELINEATION:** Map of curlyleaf pondweed distribution from the May 11, 2023 survey. No treatment was recommended for 2023. Key: green dots = light growth, red dots = heavy growth, and black dots = no curlyleaf growth.

# Clearwater Curlyleaf Pondweed Growth June 29, 2023



Data Collected June 29, 2023

0 475 950 1,900 Meters

UTM NAD 1983  
Blue Water Science

Figure 2. ASSESSMENT: Map of curlyleaf pondweed assessment sites for June 27, 2022. Key: green dots = light growth, red dots = heavy growth, and black dots = no curlyleaf growth.

**Curlyleaf Pondweed Plant Conditions, June 29, 2023**



**Eurasian Watermilfoil (EWM) Delineation:** EWM distribution and abundance were evaluated June 29, 2023 (Figure 3). Several root crowns of Eurasian watermilfoil were sampled at 2 sites (red dots in Figure 3). Growth was light to moderate at three other sites. Areas with EWM were generally less than 400 sq ft (0.01 acres) and often embedded within native plants. Even if EWM was selectively eliminated, native plants would still be abundant and there would not be much notable difference in the plant density. EWM does not present a recreational nor ecological problem at this time. Based on results of the delineation, no treatment was recommended for 2023.

### Clearwater Eurasian Watermilfoil Delineation June 29, 2023

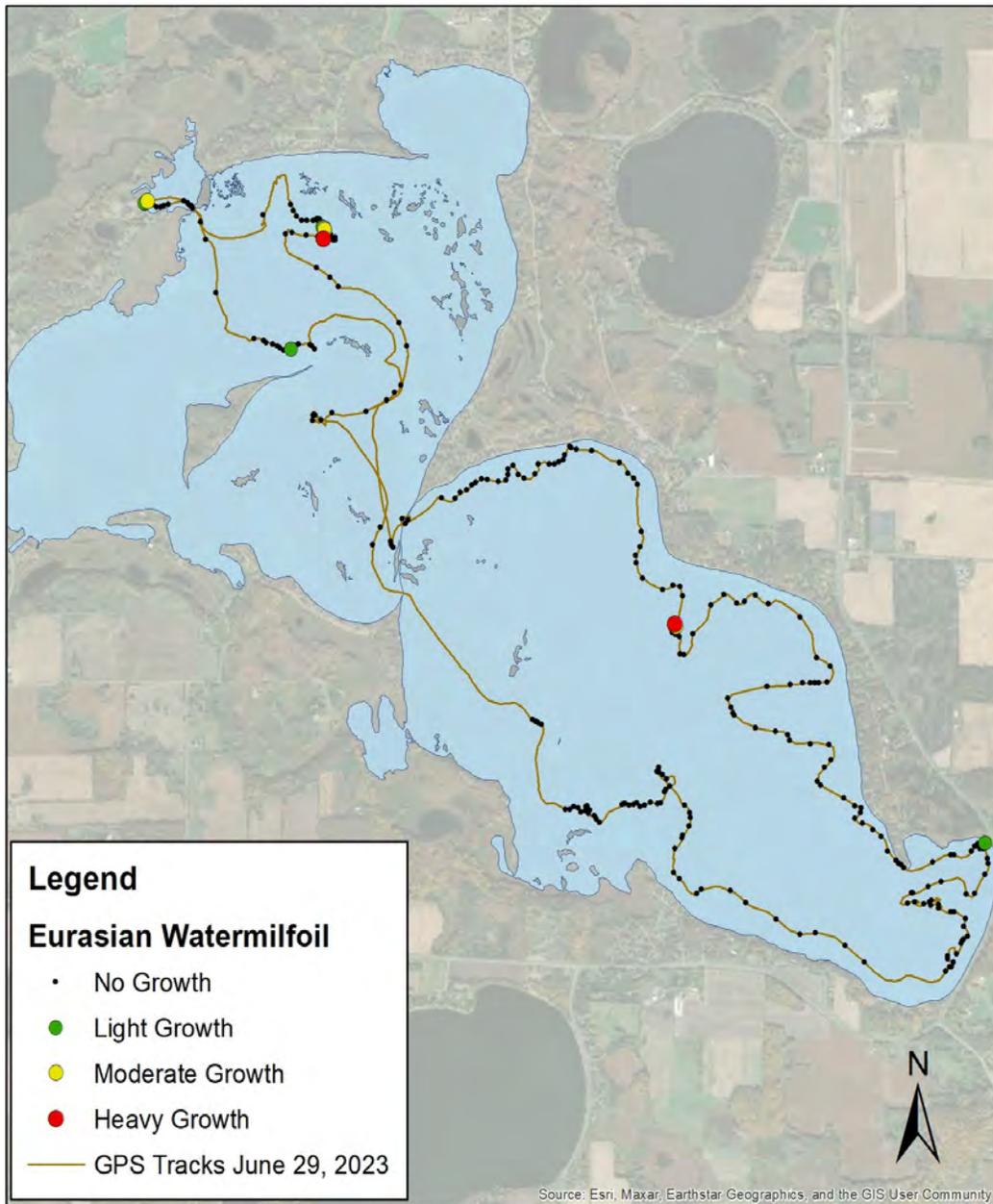
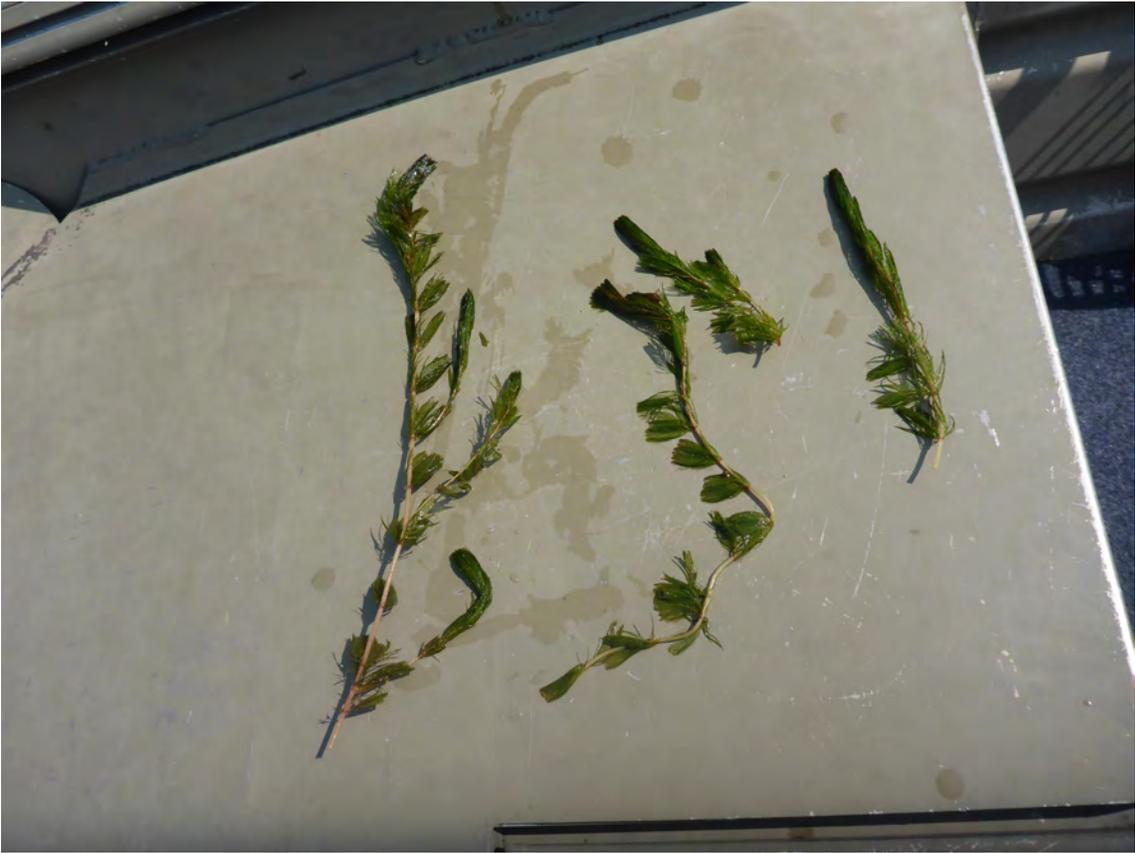


Figure 3. DELINEATION: Map of EWM distribution from the June 29, 2023 survey. No treatment was recommended for 2023. Key: green dots = light growth, yellow dots = moderate growth, red dots = heavy growth, and black dots = no curlyleaf growth.

**Eurasian Watermilfoil Plant Conditions, June 29, 2023**



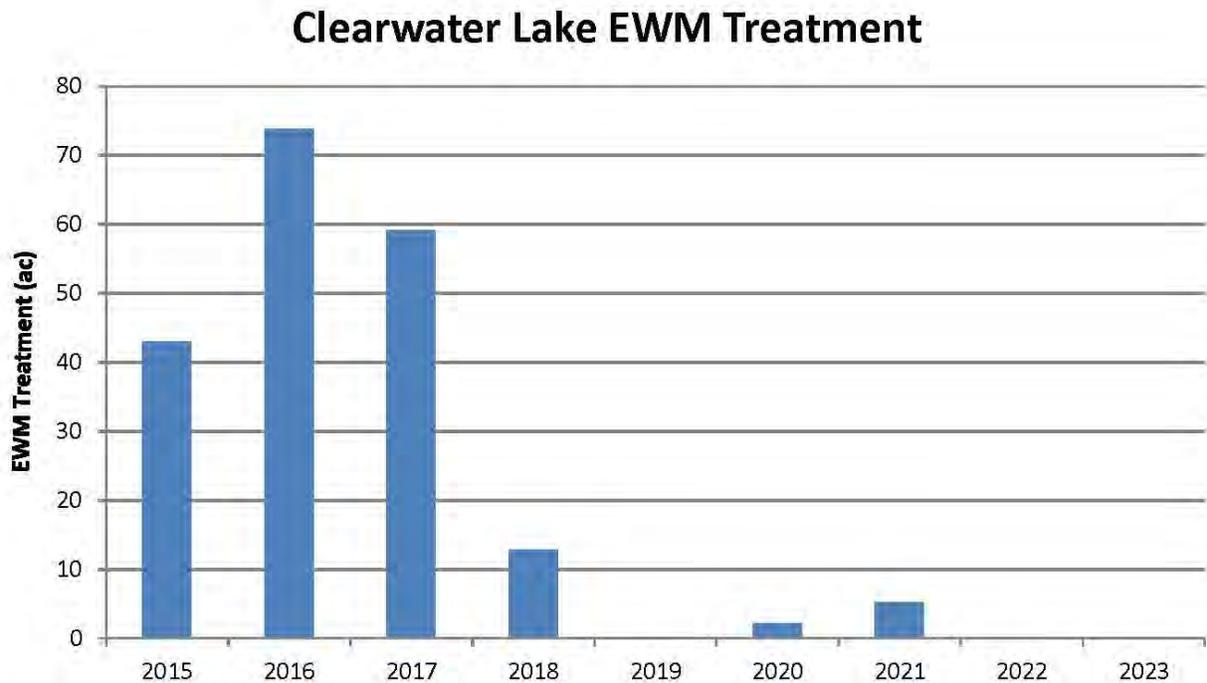
**Summary of CLP and EWM Treatments from 2015-2023:** Historically two non-native submerged aquatic plants have been treated with herbicides, however in 2023 neither curlyleaf pondweed nor Eurasian watermilfoil were treated (Table 1).

In 2021, 23.35 ac of CLP were delineated for treatment. No CLP treatment occurred in 2022 or in 2023.

Eurasian watermilfoil was discovered in Clearwater Lake in 1989. From 2015 through 2023, EWM treatments have ranged from 2.24 acres to 73.8 acres (Table 1). The greatest number of acres treated were in 2016 (Figure 4). No EWM treatment has occurred in 2022 or in 2023.

**Table 1. Acres of non-native plants treated from 2015 through 2023.**

	CLP (acres)	EWM (acres)
2015		43
2016		73.8
2017		59.2
2018		12.9
2019		
2020		2.24
2021	23.35	5.27
2022		
2023		



**Figure 4. EWM treatments from 2015 through 2023.**

**Native Aquatic Plant Assessment:** A number of areas in Clearwater Lake had abundant native plant growth (Figure 5). Clear water has promoted robust plant growth in some areas in Clearwater Lake. Some sites will have native plants reaching the lake surface. No non-native plants such as EWM are growing this heavy at this time.

### Clearwater Stringy and Narrowleaf Pondweed Growth June 29, 2023

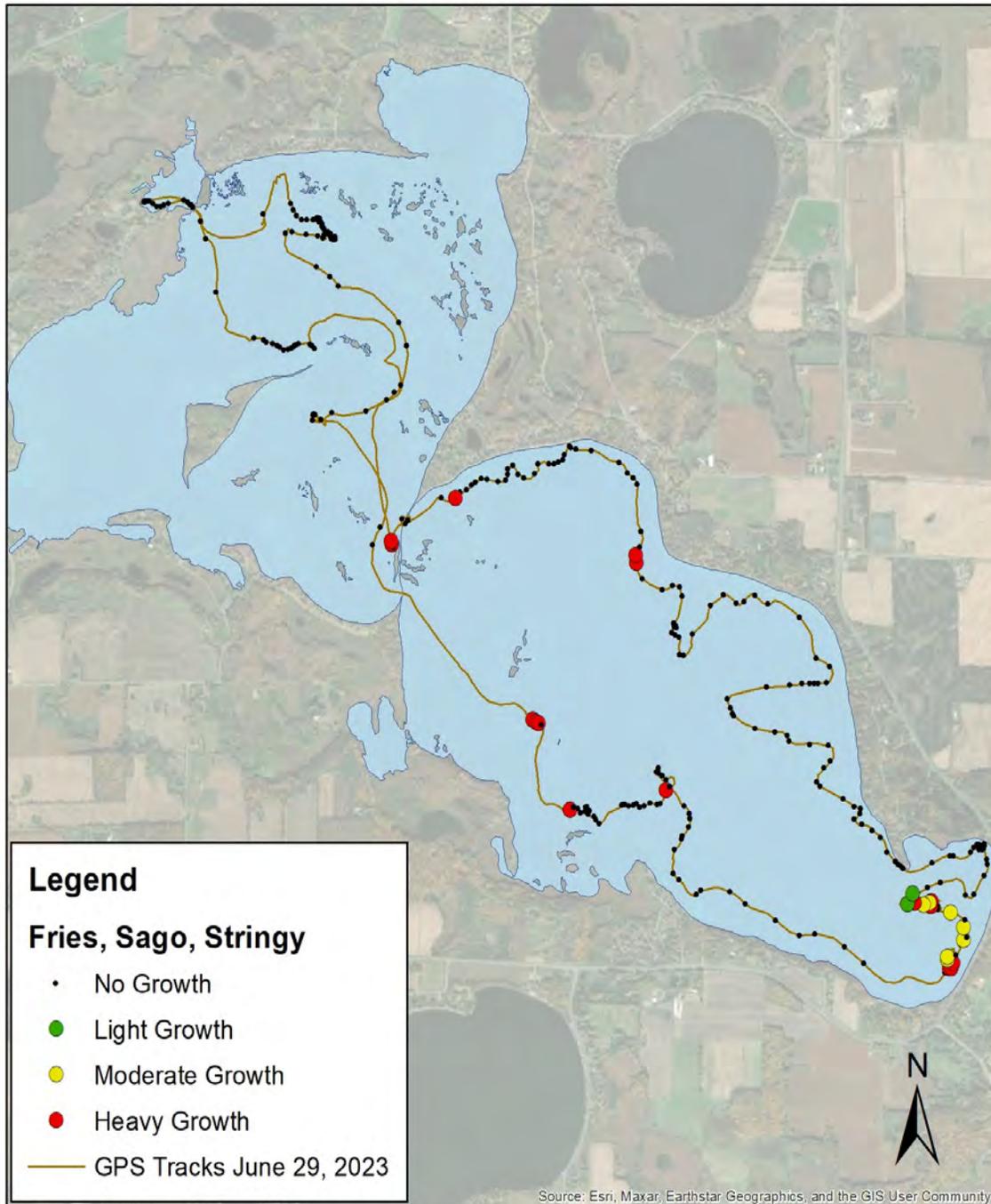


Figure 5. Native aquatic plants, stringy pondweed and narrowleaf pondweed, had some heavy growth in multiple areas in Clearwater Lake on June 29, 2023.

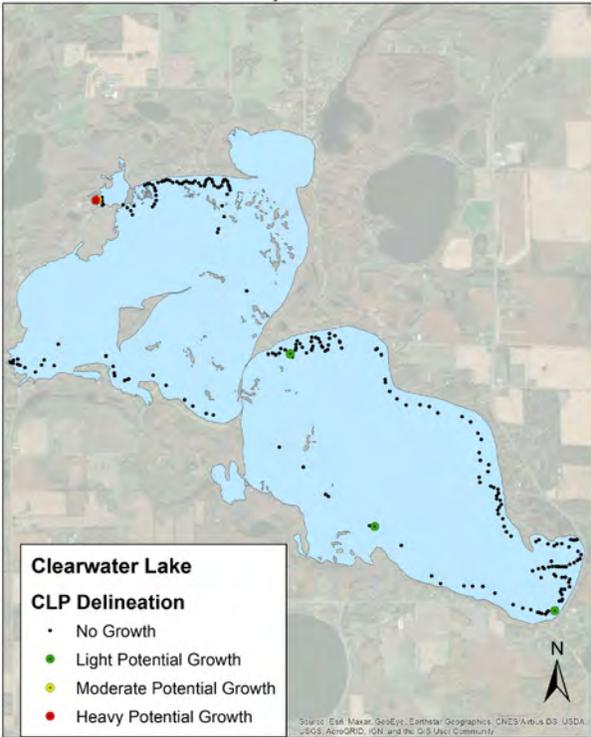
**Native Plant Conditions, June 29, 2023**



# ADDITIONAL INFORMATION

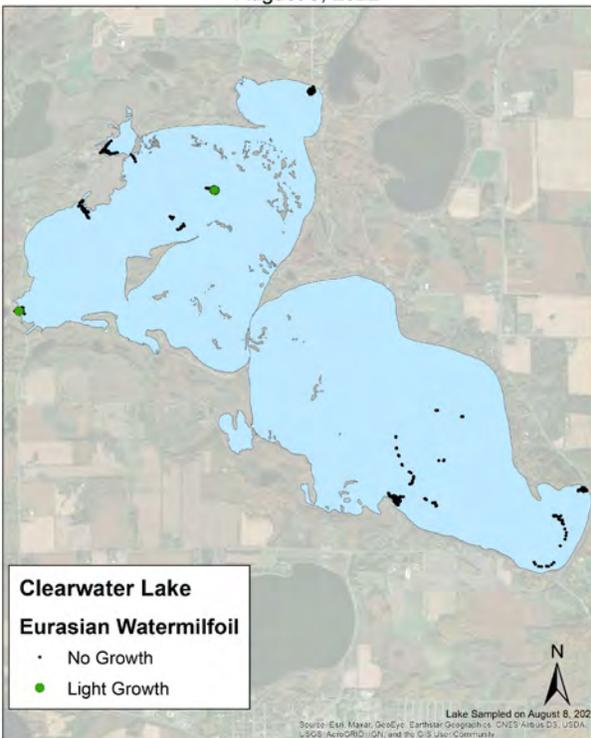
## Historical Curlyleaf Pondweed Delineation Map - May 2022

Clearwater Lake CLP Delineation  
May 16, 2022



## Historical Eurasian Watermilfoil Map - August 2022

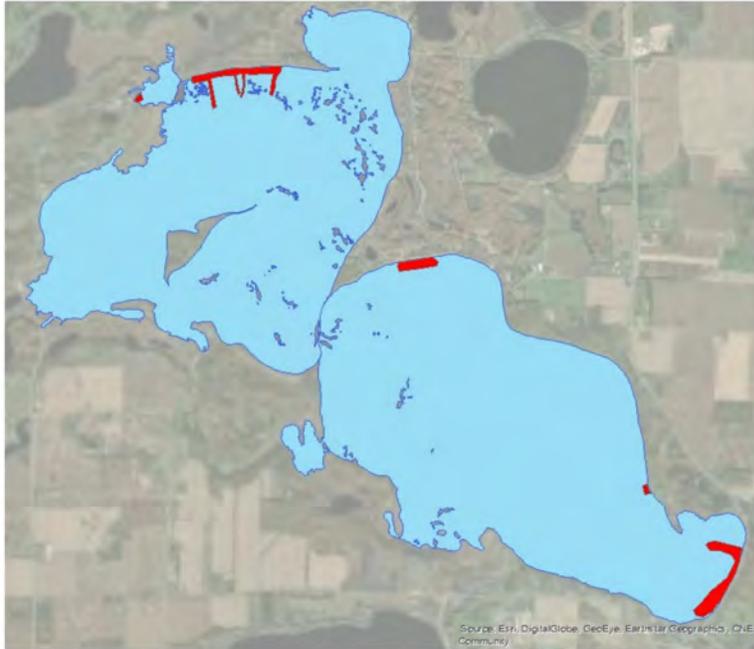
Clearwater Lake Eurasian Watermilfoil Growth  
August 8, 2022



# Historical Curlyleaf Pondweed Delineation Maps - 2021



Figure 1. Clearwater Lake 2021 CLP Search Areas



# Historical Eurasian Watermilfoil Delineation Maps - 2021



Figure 4. Clearwater Lake 2021 EWM Areas (5.27 acres)



# Historical Eurasian Watermilfoil Delineation Maps - 2020



Figure 2. EWM distribution Clearwater Lake west basin from July 29, 2020

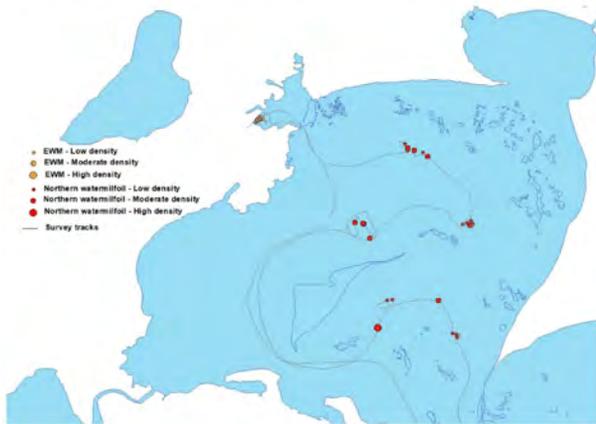
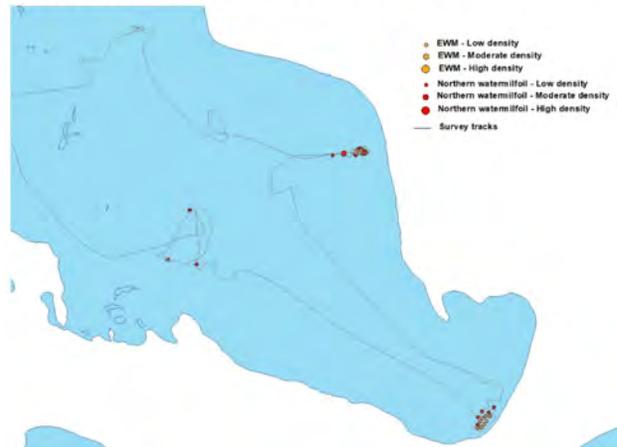
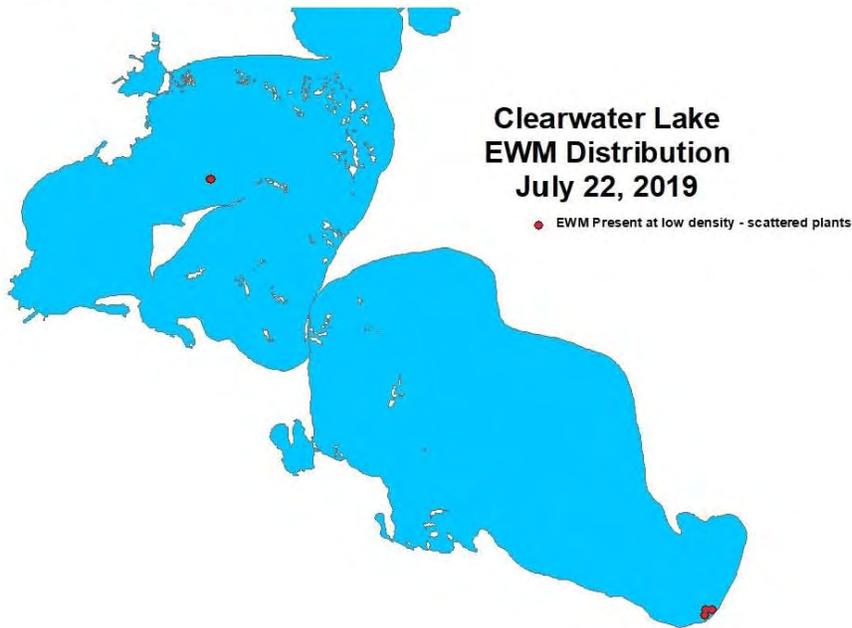


Figure 3. EWM distribution Clearwater Lake east basin from July 29, 2020



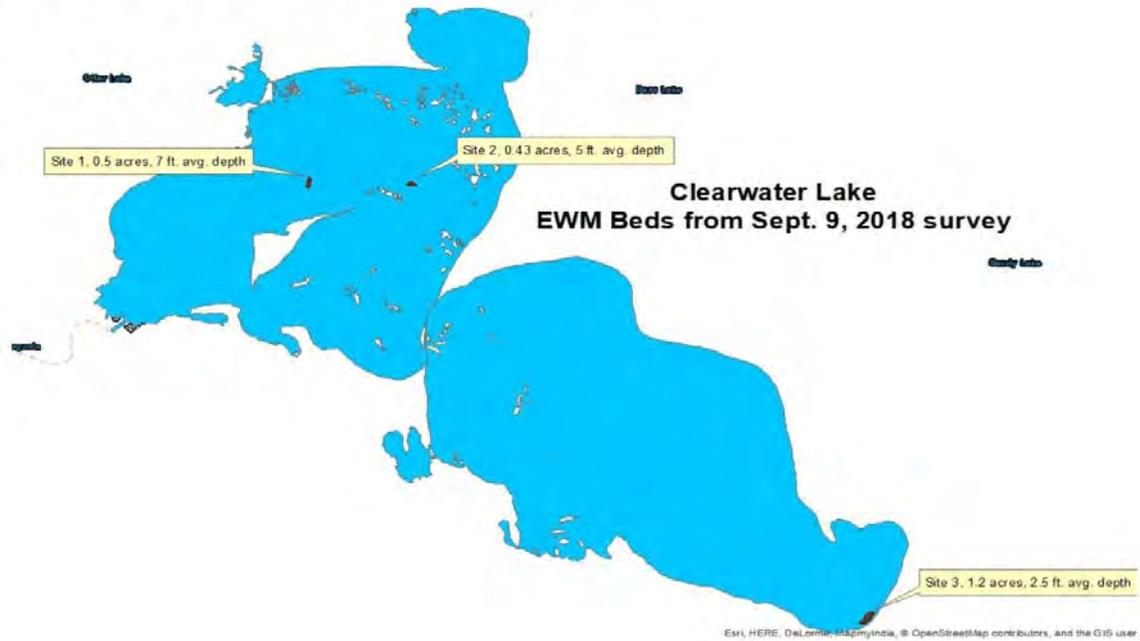
# Historical Eurasian Watermilfoil Delineation Maps - 2019

Figure 3. EWM distribution from July 22, 2019 survey



# Historical Eurasian Watermilfoil Delineation Maps - 2018

Figure 6. EWM Beds observed from 9/9/18 survey



# Historical Eurasian Watermilfoil Delineation Maps - 2017

## Clearwater Lake EWM Post Treatment Survey September 2017



### Clearwater Lake EWM Post Treatment Survey 2016

