



Pearl Lake, Waushara County WBIC #195400 Eurasian Watermilfoil (EWM) Survey August 21, 2024

Pearl Lake Protection & Rehabilitation District,

Golden Sands Resource Conservation & Development Council, Inc (RC&D) completed an Eurasian watermilfoil (EWM) survey and mapping on Pearl Lake on August 21, 2024. The survey was completed by Golden Sands RC&D staff members Andrew Senderhauf and Mara Lince. The purpose of the survey was to monitor the effectiveness of the spring 2023 EWM treatment one year post-treatment and identify distribution and acreage of any remaining EWM throughout Pearl Lake. This survey was also completed for the purpose of guiding future potential management options.

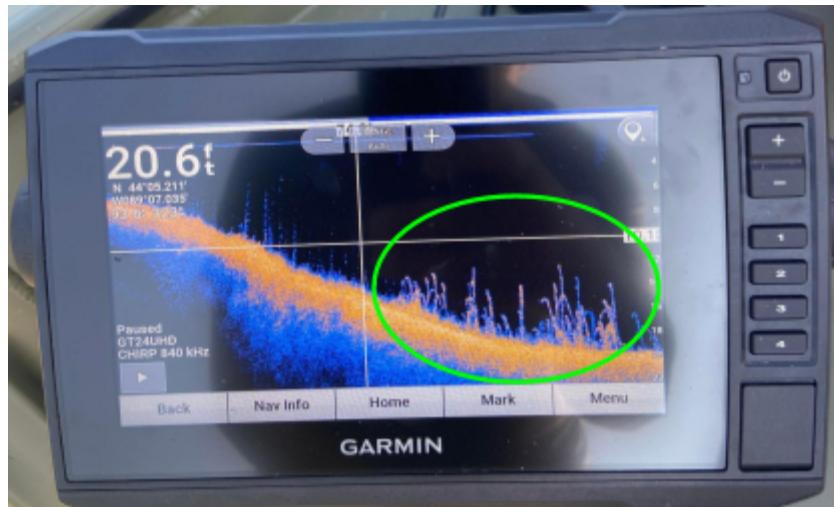
Native plants

During any type of management, unintended damage may occur to other non-targeted species. It is important to know what those species are when determining management options. A full list of Pearl Lake's plant community, as observed during the 2022 point intercept (PI) survey, can be found in the 2022 PI data and the PI summary report. WDNR and Pearl Lake District have those documents. The most common native aquatic plants observed while mapping the EWM were: southern naiad (*Najas guadalupensis*), variable pondweed (*Potamogeton gramineus*), sago pondweed (*Stuckenia pectinata*), floating-leaf pondweed (*Potamogeton natans*), flat-stem pondweed (*Potamogeton zosteriformis*), large-leaf pondweed (*Potamogeton amplifolius*), and muskgrass (*Chara species*). The native plant community appeared to be very healthy during this survey.

EWM Densities and Locations

EWM densities and locations were mapped by boat using a meander survey. Visual observations, rake drops, and a Garmin plotter graph were used to determine locations and edges of EWM beds. The crew had perfect conditions on the day of the survey, with calm winds and blue-bird skies that made it easy to see plants down to 15 feet and greatly aided in visually identifying EWM locations. While EWM was located in depths of approximately 20 ft in 2023; these colonies were not located in 2024. The crew noted the presence of plants around the 20 foot depth on the Garmin graph, but lacked the "candy-cane" shape that EWM plants can sometimes have (Image 1). Numerous rake drops were conducted on these areas and only flat-stem pondweed was observed at these locations. The crew meandered out to 25 feet around the entire lake using the Garmin graph to check for these deep growing colonies that cannot be seen during the visual part of this survey.

Image 1: Graph image of EWM in 2023. Return signal shows an orange/dense object with distinct hooks or "candy cane" appearance at a depth of approximately 20 feet deep.



On map 1, the blue dots indicate a single plant or only a few plants. The green dots indicate clumps of EWM (5-20 plants total). These areas had more than a few plants but occupied an area smaller in diameter than the 16 foot survey boat and did meet the criteria to map as a polygon. Single plants and clumps of EWM were observed in water as shallow as 1 foot and as deep as 12 feet.

The green polygons (colonies) indicate an area of scattered EWM. In these areas, EWM is typically spread evenly throughout but is not the most dominant plant present. All scattered colonies mapped (0.95 acres total) were found in an average water depth of 5-6 feet. Some of these areas were spread out over long stretches of shoreline, but were thin in diameter and located right before the lake bottom dropped off steeply.

The orange polygon indicates a colony of abundant EWM. Here, EWM is the dominant species but a small number of native plants are still present (Image 2). A small (0.05 acres) area of abundant EWM was mapped on the east end of the lake and was located in water that was an average of 8 ft deep. In total, approximately one acre of colonized EWM was mapped in Pearl Lake.

Image 2: Example of Abundant EWM in Pearl Lake in 2023.



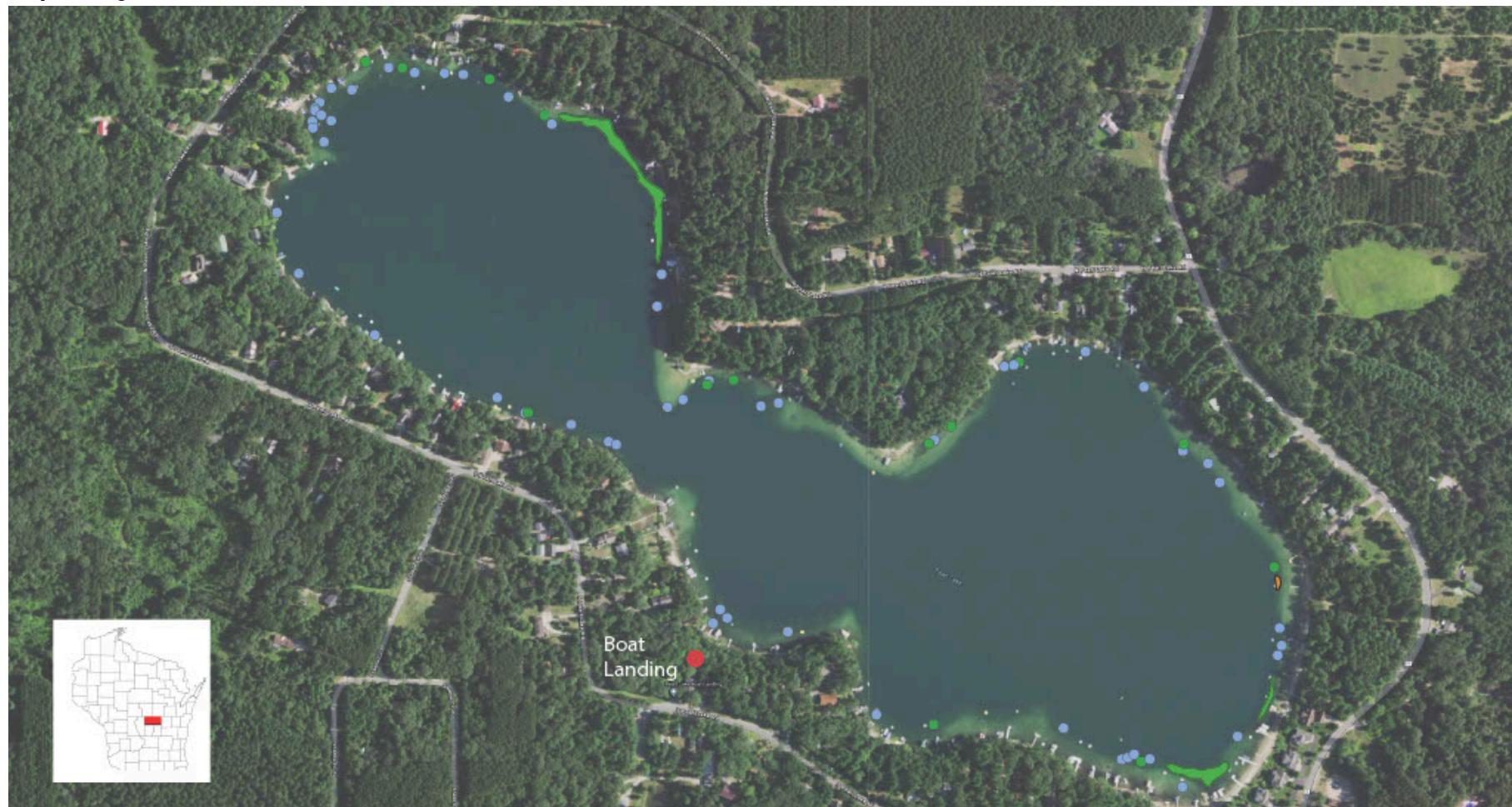
Much of the milfoil observed during the survey was EWM, however the crew did note seeing floating fragments of northern watermilfoil (NWM), a native species. NWM and EWM have the ability to cross-breed and create an invasive hybrid watermilfoil (HWM). HWM has been confirmed in Pearl Lake and should be considered in future management decisions for the lake.

If there are any questions regarding the EWM survey or maps please contact Golden Sands RC&D, Andrew Senderhauf, andrew.senderhauf@goldensandsrcd.org (715) 343-6215

Image 3: Perfect survey conditions on Pearl Lake



Map 1: August 2024 EWM locations for Pearl Lake



Pearl Lake Eurasian
Watermilfoil Survey

Waushara County, WI

August 21, 2024

Legend

EWM Points	EWM Colonies
● Clump	■ Abundant
● Single	■ Scattered



Golden Sands
Resource Conservation
& Development Council, Inc.
Conservation That Works!