
Hagerman Lake (Iron County, Michigan) Aquatic Invasive Species Monitoring Report

This is a product of biannual monitoring conducted on behalf of:

Hagerman Lake Property Owners' Association

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INTRODUCTION

White Water Associates, Inc. (hereafter referred to as White Water) has been retained by the Hagerman Lake Property Owners' Association to conduct biannual Aquatic Invasive Species (AIS) monitoring in Hagerman Lake (Iron County, Michigan). White Water professional staff has had significant experience with the Hagerman Lake ecosystem having developed the 2018 Aquatic Plant Management Plan and Adaptive Lake Management Plan for Hagerman Lake and conducting AIS monitoring (even years) and water quality monitoring (odd years) since 2015.

METHODS

For this survey, we conducted a thorough search of likely habitats for aquatic invasive species (AIS) around the entire Hagerman Lake shoreline with special focus on the boat landings and other points of most likely introduction or colonization. Earlier in the 2024 season, a lake user reported seeing Eurasian watermilfoil in Hagerman Lake. Although the report was unconfirmed (no photo, no specimen, no authoritative identification), our main focus in the 2024 AIS survey was to verify if Eurasian watermilfoil was present and (if present) determine the distribution and abundance of this invasive species in Hagerman Lake. The field work was conducted on August 21, 2024 by White Water aquatic biologist Carole Gabbard, field technician Forrest Revello and boat driver Faryn Rice.

The search was conducted from a White Water boat and began at the public boat landing. Using the boat, we meander-searched around the entire lake and stopped at four target search sites and snorkeled and waded with viewing bucket to look for AIS in the water and near shore. As part of the survey, an Ponar dredge was used to collect sediment at the deep hole to monitor for spiny water fleas. The survey ended by wading at the boat landing area looking for AIS. The shoreline in the vicinity of the boat landing was also walked looking for anything out of the ordinary (Map 1).





Map 1. Hagerman Lake target search site (HG2024-#), dredge (DR2024) locations.



SURVEY RESULTS

Four aquatic invasive species (three plant species and one animal species) were observed during this monitoring bout, including yellow iris (*Iris pseudacorus*), aquatic forget-me-not (*Myosotis scorpioides*), pink water lily, and zebra mussel (*Dreissena polymorpha*).

1. **Yellow iris.** At the time of the 2024 survey, the yellow iris plant was not in flower, but plants observed along the shore of the lake were likely of this species (Photo 1). An early season survey could be beneficial to focus on locating the invasive species. We recommend that to dug up yellow iris and replace them with the native blue flag iris (*Iris versicolor*). These would be available from nurseries.



Photo 1. Yellow iris in Hagerman Lake shoreline (Photo taken August 2024).



2. *Aquatic forget-me-not*. This invasive species can quickly crowd plant species and is able to form large monocultures (Photo 2). This, in turn, affects community compositions by reducing the number of native herbs (WIDNR, 2024). Aquatic forget-me-not is difficult to control due to its mechanisms for spreading (WIDNR, 2024).



Photo 2. Aquatic forget-me-not in Hagerman Lake shoreline (Photo taken August 2024).



3. ***Pink water lily***. The plant is still present at the location (46.05385, -88.78725) and did not seem to have spread (Photo 3).



Photo 3. Pink water lily in Hagerman Lake shoreline (Photo taken August 2024).



4. *Zebra mussel* (Photo 4). Live and dead specimen of zebra mussels were found in low density at one of the target search sites and at the boat landing (Table 1).



Photo 4. Live zebra mussel specimen found in Hagerman Lake (Photo taken August 2024).

5. *Spiny water fleas* (*Bythotrephes longimanus*) are an aquatic invasive zooplankton that is found in a few lakes in Wisconsin. One way to determine if they are present in a lake is to conduct a vertical zooplankton tow at various locations in the lake and look at the sample to see if the tiny spiny water fleas are present (this kind of sampling is suggested for September and October). A second kind of sampling is to collect bottom sediment (using a Ponar sampler or Ekman dredge) and examine this material for spiny water flea body parts using a microscope. The dredge location is usually the deepest area of the lake. In 2024, the dredge location was 45 feet deep and the coordinates were (46.05445, -88.77921). The sample was examined under magnification in the lab and there was no spiny water flea in the samples collected.



6. ***Eurasian watermilfoil*** (*myriophyllum spicatum*). After careful search under favorable survey conditions, no Eurasian watermilfoil plants were found during the meander search. We documented the water marigold (*Bidens beckii*) on Hagerman Lake. This native species could be mistaken for Eurasian watermilfoil (Photo 5). We greatly encourage lake users to keep an eye open for suspect invasive species. If a questionable species is observed, take photos, record general location or GPS coordinates and provide to White Water. This is important information that could help validate or refute the presence of a new invasive species in the lake. Early detection of non-native invasives increases the likelihood of successful control.



Photo 5. Eurasian watermilfoil (left photo from DEQ 2018 document) and water marigold found in Hagerman Lake (right photo taken August 2024).



Table 1. Target search site GPS coordinates and their findings.

Target search site	Latitude	Longitude	Findings
HG2024-01	46.05866	-88.77138	No AIS Present
HG2024-02	46.06685	-88.77807	Aquatic forget-me-not and yellow iris
HG2024-03	46.05782	-88.78432	No AIS Present
HG2024-04	46.04791	-88.78117	One live and one dead specimen of zebra mussel
Boat Landing	46.04778	-88.7821	Five dead specimen of zebra mussel
DR2024	46.05438	-88.7793	No AIS Present

We appreciate the opportunity to serve the Hagerman Lake Property Owners' Association. If there are any questions about this report or special need of services, please contact us at your convenience.

Literature cited

DEQ, 2018. Eurasian Watermilfoil. <https://www.michigan.gov/-/media/Project/Websites/invasives/Documents/StatusStrategy/EWM.pdf?rev=de18752d421f42cc9cf427913d13a153>

Sea Grant, 2023. [MAPMS AIS \(17.25 × 11.25 in\)](#)

WDNR, 2024. [Aquatic Forget-me-not | \(Myosotis scorpioides\) | Wisconsin DNR](#)

