

Summary of Monitoring at Boat Landings and Water Inlets for Eurasian Water-milfoil (*Myriophyllum spicatum*) and Other AIS on Wood (Big Wood) Lake (WBIC: 2649800) Burnett County, WI



Galerucella beetle



Purple loosestrife in bloom

Project Initiated by:

The Big Wood Lake Association and the Wisconsin Department of Natural Resources



Eurasian water-milfoil (Berg 2007)



Coontail – an EWM look-alike that is common in Wood Lake

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INTRODUCTION:

Wood Lake (WBIC 2649800) is a 521-acre eutrophic stratified drainage lake located in south-central Burnett County, Wisconsin in the Town of Wood River (T38N R18W S26-28 and 33/34) (Figure 1). The lake reaches a maximum depth of 35ft in the central basin and has an average depth of approximately 16ft. The bottom is predominately muck, although areas of gravel and sand are located throughout the lake; especially around the many exposed and sunken islands (Bush et al. 1967). Secchi readings over the last ten years have averaged 5.3ft (WDNR 2024). This poor to very poor clarity produced a littoral zone that reached approximately 10ft in 2024.

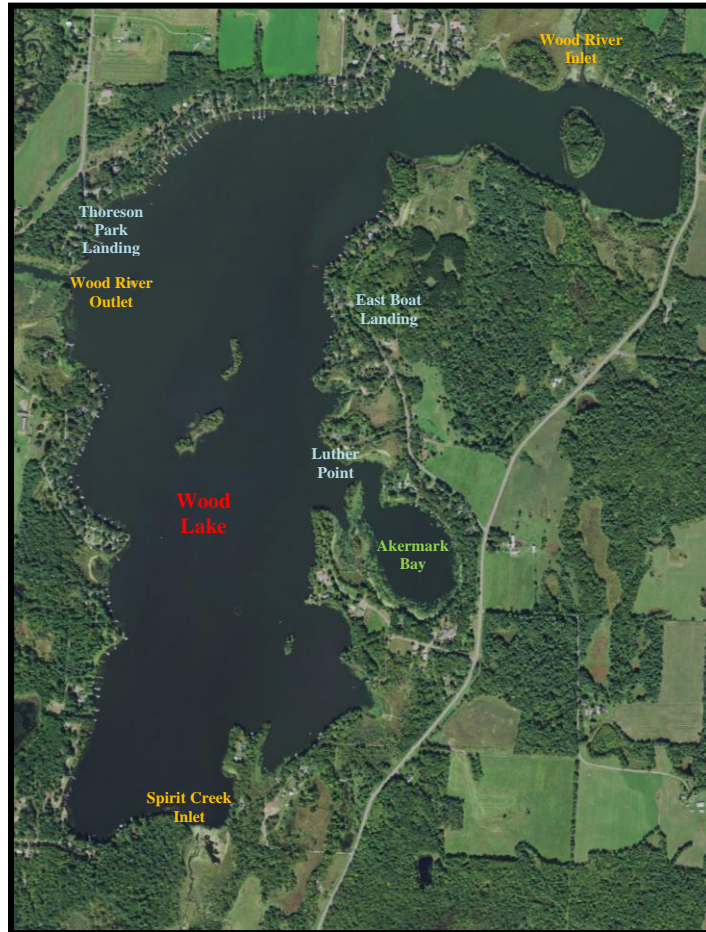


Figure 1: Wood Lake Aerial Photo

BACKGROUND AND STUDY RATIONALE:

During the summers of 2006, 2013, and 2020, intensive point-intercept plant surveys found no evidence of Eurasian water-milfoil (*Myriophyllum spicatum*) (EWM) in Wood Lake. As part of the lake's last Aquatic Plant Management Plan (APMP), the Wood Lake Association and Harmony Environmental decided that monthly transect surveys at the lake's boat landings and water inlets would be a prudent measure considering the increasing number of neighboring lakes with EWM infestations (Round Lake, Long Trade, Big Trade, and Little Trade Lakes).

METHODS:

During the 2024 aquatic macrophyte growing season (June-October), we conducted five landing inspections at the Thoreson Park and east side boat landings, and at the Wood River and Spirit Creek Inlets (Figure 2). Using three 100-150m parallel transects approximately 15, 30 and 45m from shore; we motored at idle speed looking for any evidence of EWM's characteristic red growth top. Once we had finished the three transects, we returned to our starting point using a stitch pattern that crossed back and forth over all three lines to look for any plants we may have missed between the transects. We also conducted a monthly boat survey along the shoreline of the entire lake to look for EWM in the zone of growth it would most likely be found in (Figure 2). We especially focused on the north and east shores as these are places that floating fragments would likely get blown to by the prevailing southwest winds before settling to the lake bottom.

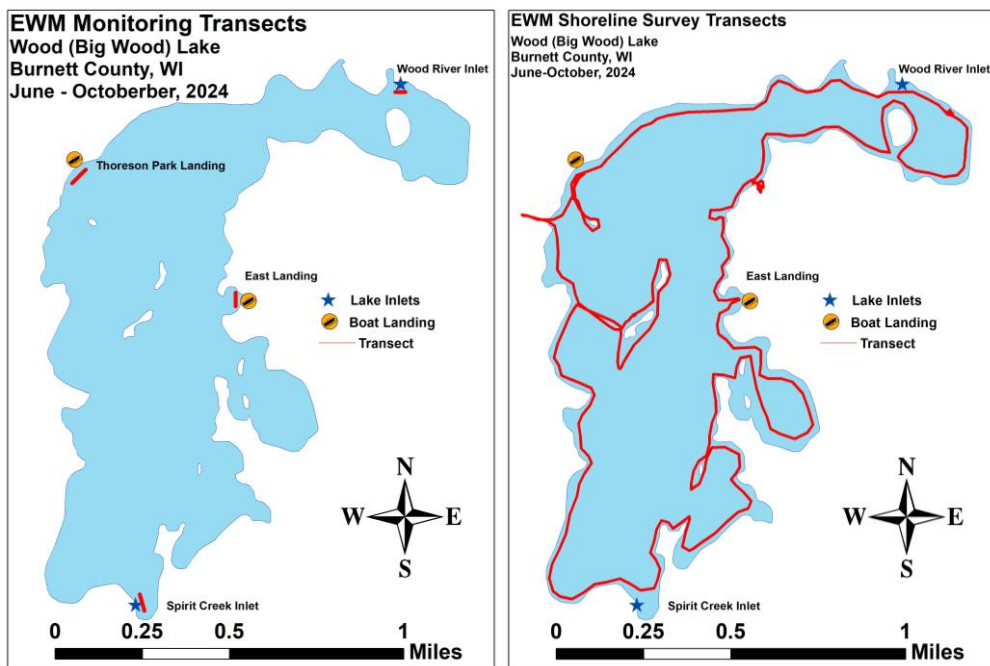


Figure 2: Boat Landing, Inlet, and Shoreline AIS Survey Transects

RESULTS AND DISCUSSION:

Eurasian Water-milfoil:

We completed landing transect and shoreline surveys on June 1st, July 3rd, July 30th, September 1st, and October 6th. **We did NOT find any evidence of Eurasian Water-milfoil anywhere in Big Wood Lake during any survey.** However, the lake again supported a moderately high population of the similar looking native species Northern water-milfoil (*Myriophyllum sibiricum*). NWM is widely distributed throughout Big Wood in all habitats, but it does best over sandy and organic muck. Despite its superficial resemblance to EWM, Northern water-milfoil can be told apart by its leaflets numbering <24 whereas EWM normally has >26 (Figure 3). EWM also tends to have a bright red growth tip on the top of the plant whereas NWM has a bright lime green growth tip. In the fall, NWM forms winter buds on the tips of shoots whereas EWM has none (Figure 4). These were evident on all NWM plants during the October survey.



Eurasian water-milfoil



Northern water-milfoil

Figure 3: EWM and Northern Water-milfoil Identification (Berg 2007)



Figure 4: Overwintering Turions on Dying Northern Water-milfoil
(Berg 2016)

Coontail (*Ceratophyllum demersum*), another EWM lookalike that prompted several concerned residents to contact us this summer, is abundant on lake. It can be told from EWM by having leaflets that fork and have minute teeth (Figure 5)

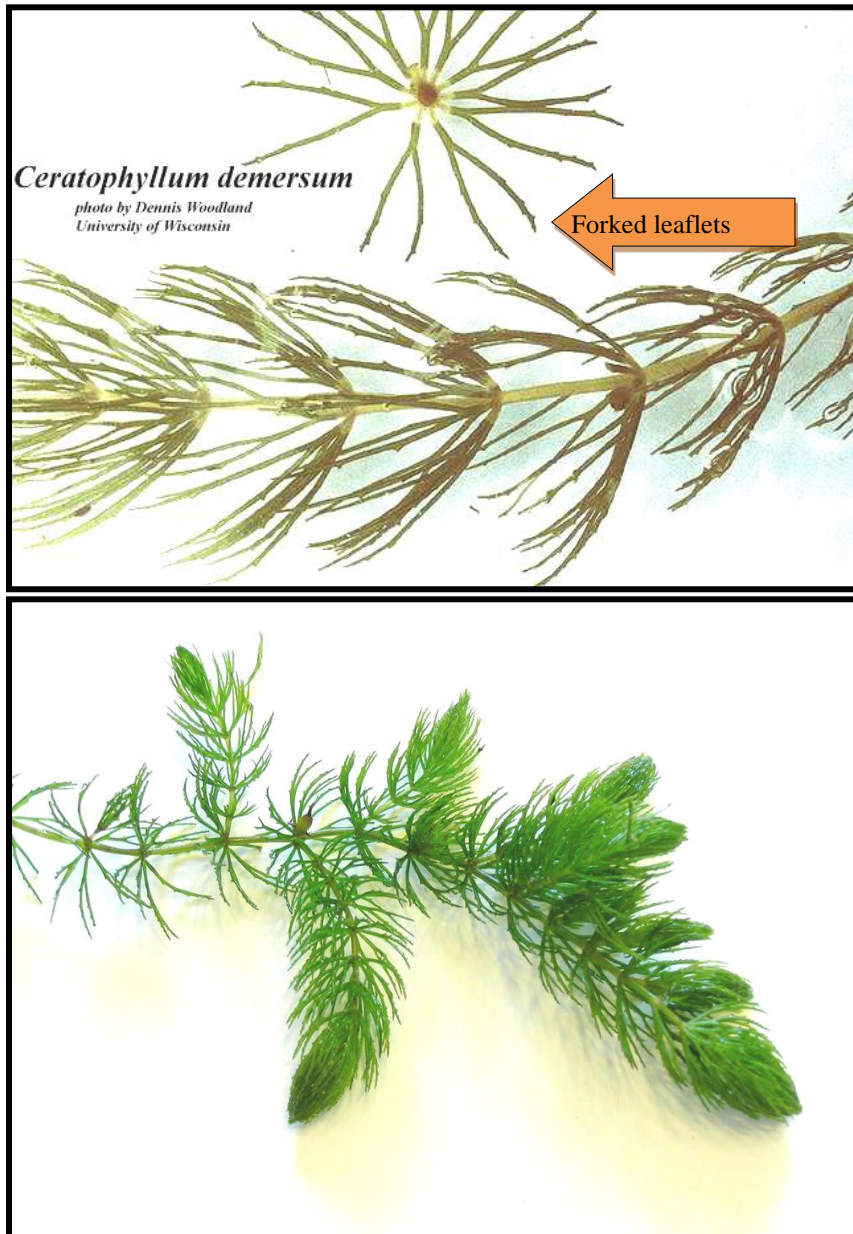


Figure 5: Coontail Identification

Purple Loosestrife:

Purple loosestrife (*Lythrum salicaria*) (PL), another exotic invasive plant, was again present in the wetlands adjacent to and along the immediate shoreline of the lake. This species prefers mucky soils and is increasing among the Cattails (*Typha* spp.) and Northern wild rice (*Zizania palustris*) near the Spirit Creek Inlet and just south of the Wood River Outlet. Unfortunately, these areas are difficult to impossible to safely reach for manual removal. Both of the central islands also have a number of plants including a monotypic stand on the south end of the north wooded island. In 2015, Galerucella beetles (an imported insect species that specializes in eating PL) were raised and released by Grantsburg High School students at this location. Although beetles were visible on plants throughout the summers of 2016 and 2017, until 2018, they showed little effect on the island's PL population. However, since then, the beetles have caused moderate to extensive herbivory, and we found a single flower that made it to bloom on the islands in 2021 and none in 2022, 2023, or 2024 (Figure 6). Although the beetles won't kill the roots, this prevents the majority of plants from flowering and spreading. Another positive development was the natural dispersal of these micro-herbivores as we again located at least some live beetles on all loosestrife plants growing on the islands as well as on plants near the Spirit Creek Inlet. **This suggests no more beetles need to be released on the lake at this time.**



Figure 6: Plants on Central Island Showing Limited Herbivory on 10/6/16 (left), Moderate Herbivory on 7/25/20 (middle), and Extensive Herbivory on 8/1/21 (right)

Purple loosestrife was formerly widespread along the western shoreline of the lake south of the Wood River Outlet. In 2018, students from GHS performed manual removal of all plants along this shoreline that were safely accessible/not in a wetland (see 2018 annual report). This removal has proven to be very effective as we did not find any surviving plants along these residential shorelines during any of our 2019-2024 surveys. Despite this, residents are encouraged to continue to look for and remove any PL plants they find on their property in August/September when the bright fuchsia candle-shaped flower spikes are easily seen and before they can set seed (Figure 7). Plants should be dug out with a shovel, bagged, and disposed of well away from any wetland. Also, because the plants have an extensive root system, care should be taken to remove the entire plant as even small root fragments can survive and produce new plants the following year.

Concern about Purple loosestrife also prompted several calls from lake residents in 2024. Each plant of concern turned out to be a somewhat similar looking native species – Pickerelweed (*Pontederia cordata*) (Figure 8) – which is scattered around the Big Wood shoreline.



Figure 7: Purple Loosestrife Identification/Plants on a Nearby Lake

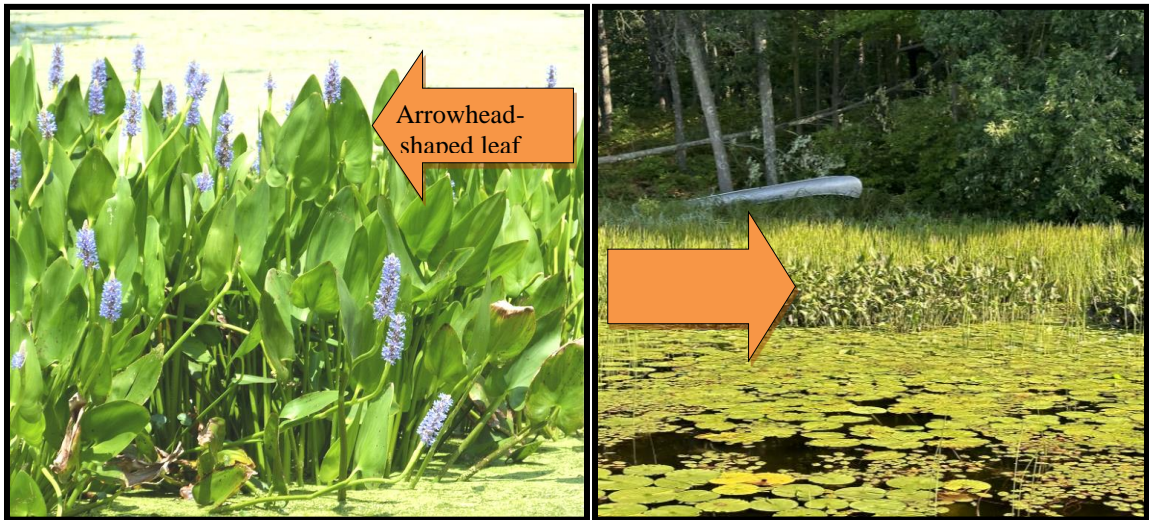


Figure 8: Pickerelweed Identification/Typical Patch in the Shallows

CONSIDERATIONS FOR FUTURE MANAGEMENT:

With Eurasian water-milfoil growing in several nearby lakes, continued regular landing inspections are likely advisable. Early detection of EWM provides the best chance to economically contain the plant once an infestation has occurred. We also encourage any lake resident or boater that discovers a plant they even suspect may be EWM to **immediately** contact Matthew Berg, ERS, LLC Research Biologist at 715-338-7502 for identification confirmation. If possible, a specimen, a jpg, and accompanying GPS coordinates of the location should be included. Texting pictures from a smartphone is actually ideal as it allows for immediate feedback. Likewise, we are happy to identify ANY plant a lake resident finds that they may be curious about. ☺

LITERATURE CITED

Busch, C., G. Winter, L. Sather, and R. Rip. [online]. 1967. Wood Lake Map. Available from: https://apps.dnr.wi.gov/doclink/lakes_maps/2649800a.pdf (2024, October).

WDNR. [online]. 2024. Citizen Lake Water Quality Monitoring Database for Wood Lake – Burnett County. Available from <https://apps.dnr.wi.gov/lakes/waterquality/Station.aspx?id=073044> (2024, October).

WDNR. [online]. 2024. Wisconsin Lakes Data for Wood Lake – Burnett County. <https://apps.dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=2649800> (2024, October).

Appendix I: Wood Lake Shoreline Survey Tracks

