
**Lake Evaluation Record**

**Lake Name:** Bear Lake

**County:** Kalkaska

**Evaluated by:** Mike Pichla

**Reviewed by:** Bre Grabill

**Date:** September 2024

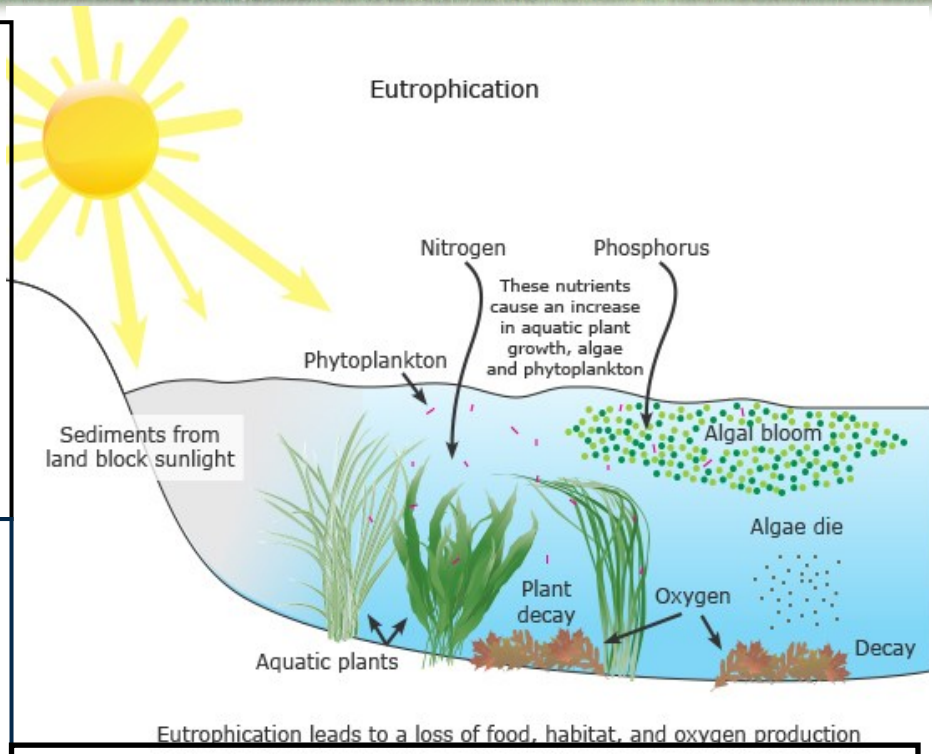
**Purpose of evaluation:** End of Season Survey

**2024 Service Timeline:**

| Service | Date |
|---|---|
| Survey, EWM Treatment | 6/12 |
| Survey, EWM Treatment | 7/24 |
| End of Year Survey | 9/5 |

**2025 Recommendations**

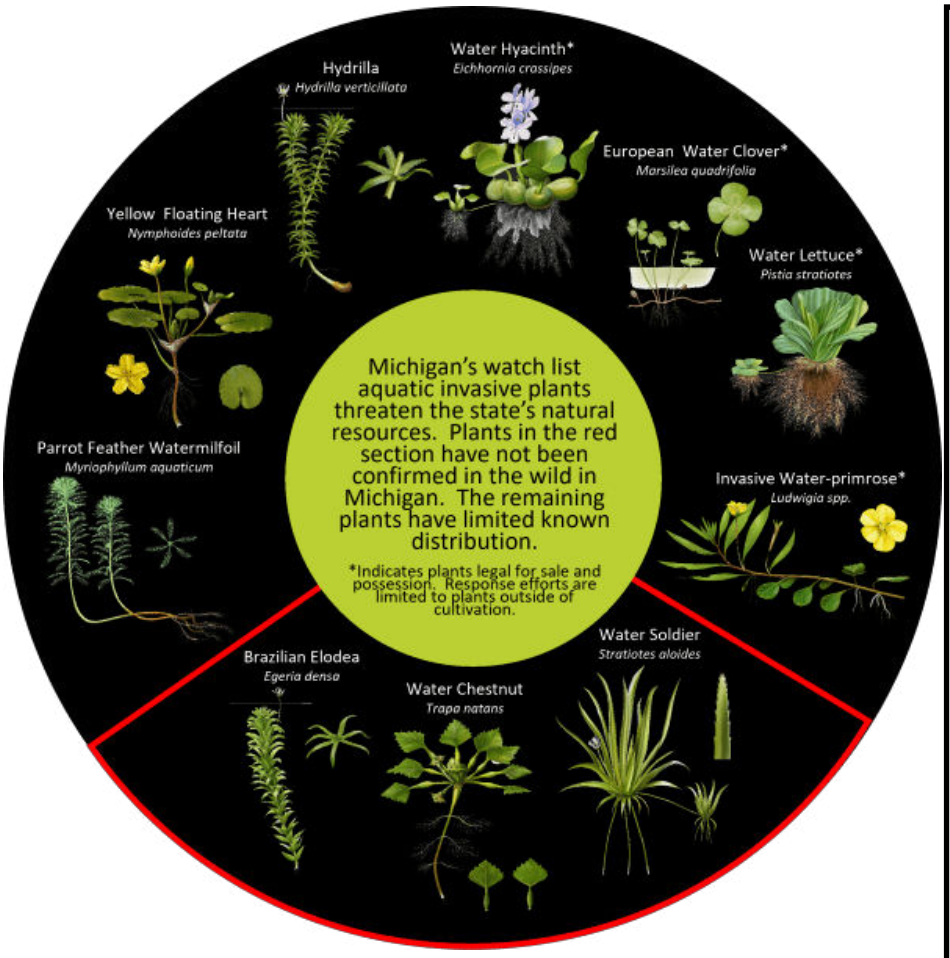
- A spring vegetation survey
- Herbicide treatments for exotic/ nonnative plants
- Mid summer surveys for monitoring
- Water Quality monitoring
- AVAS Survey (last one in 2022)




Eutrophication leads to a loss of food, habitat, and oxygen production

Educating riparian's on what they can do to reduce phosphorus inputs from external sources is an important part of management. However, legacy phosphorous that's already present in the sediment, can also be an issue. Legacy phosphorus, from years of accumulation, will continue to cycle year after year, leading to an increase in internal loading where the phosphorus in the sediment is released back into the water. Due to this it is important to monitor lake phosphorus while minimizing inputs into the lake from external sources. Inquire for more information about phosphorus mitigation.

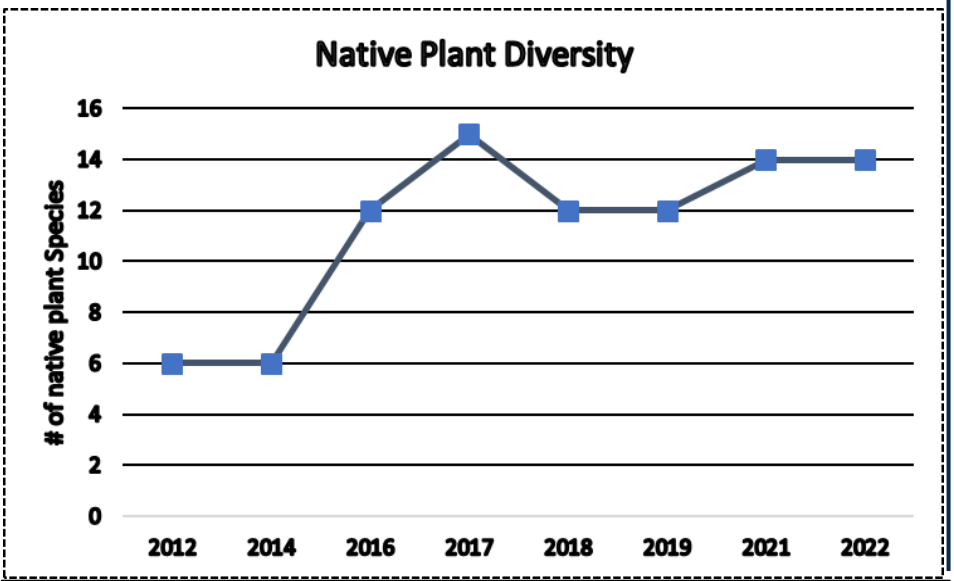
Bear Lake has a minor infestation of the nonnative, invasive plant, Eurasian watermilfoil (EWM). As part of this program, numerous surveys occur annually on Bear Lake. EWM was treated on Bear Lake, using ProcellaCor a systemic herbicide that targets root control. Bear Lake also has a population of native, northern milfoil. It is important to stay on top of milfoil populations and manage a waterbody for changing genetic makeups. Plants were genetically tested in 2024 and results are still pending. Native plant growth should be encouraged to help promote plant diversity and ensure a healthy plant community for the fishery; Continued Monitoring and herbicide treatment, when necessary, is recommended to maintain the pristine condition of Bear Lake.




Exotic aquatic plant species cause many of the most serious weed problems in lakes and ponds. Exotic plants are plant species that are not native to this area and have been introduced here inadvertently. Because they have few natural enemies in this region, they tend to grow unchecked often forming dense mats at the water's surface. These dense mats displace native vegetation, reducing diversity and can have serious implications to the aquatic habitat.

The most common exotic aquatic plant species in Michigan are Eurasian watermilfoil (Myriophyllum spicatum), Curlyleaf pondweed (Potamogeton crispus) and Starry stonewort (Nitellopsis obtusa). Other less common species include European frog-bit (Hydrocharis morsus-ranae), Cabomba (Cabomba caroliniana) and Parrot feather (Myriophyllum aquaticum). However, the majority of management efforts focus on the three main species.

PLM is always on the lookout infestations of new invasive species. Early detection is important in the success of controlling invasive species and can prevent further damage to the lakes' ecosystem.




PLM has been tracking plant trends in Bear Lake as part of the management program. Per request an AVAS was not performed in 2023/2024. Our most recent AVAS survey in 2022, the plant diversity was good with 14 native plant species identified, with good overall coverage. Additional monitoring will allow plant health to be deter-mined long term. PLM recommends doing an AVAS survey again in 2024. Graph 1 shows the native plant diversity on the lake since 2012.

Additional monitoring in the future will allow tracking of plant trends and overall health of Bear Lake. Native plant populations have remained quite consistent while EWM populations have stayed quite low, a positive sign of the management efforts in place.

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