Lake Evaluation Record

Lake Name: Sage Lake

County: Ogemaw

Evaluated by: Mike Pichla

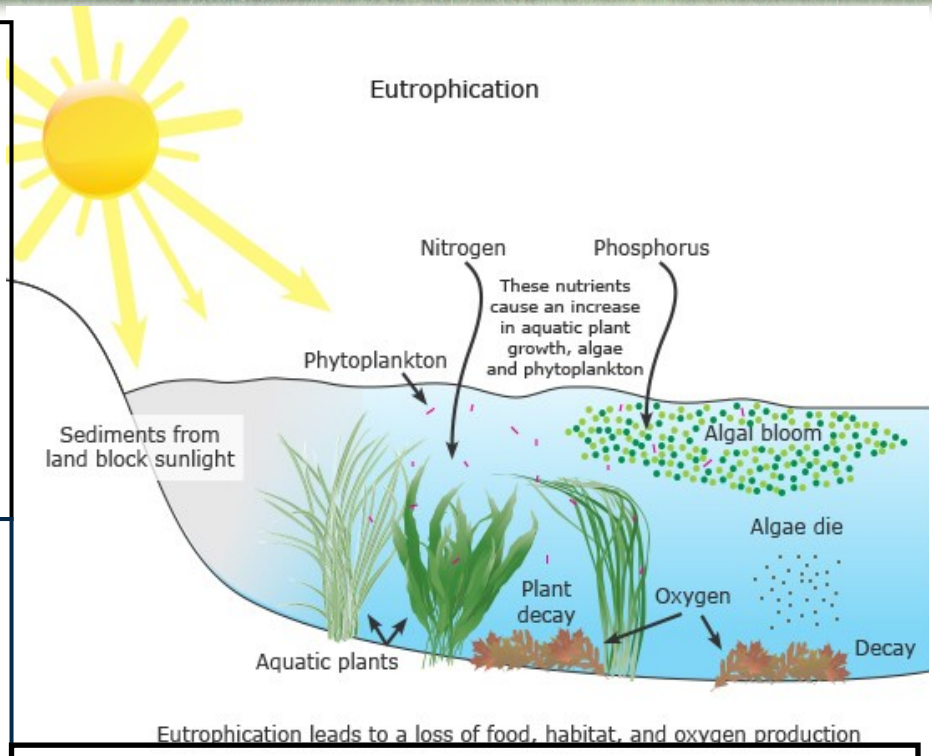
Reviewed by: Bre Grabill

Date: September 10, 2024

Purpose of evaluation: End of Season Survey

2024 Service Timeline:

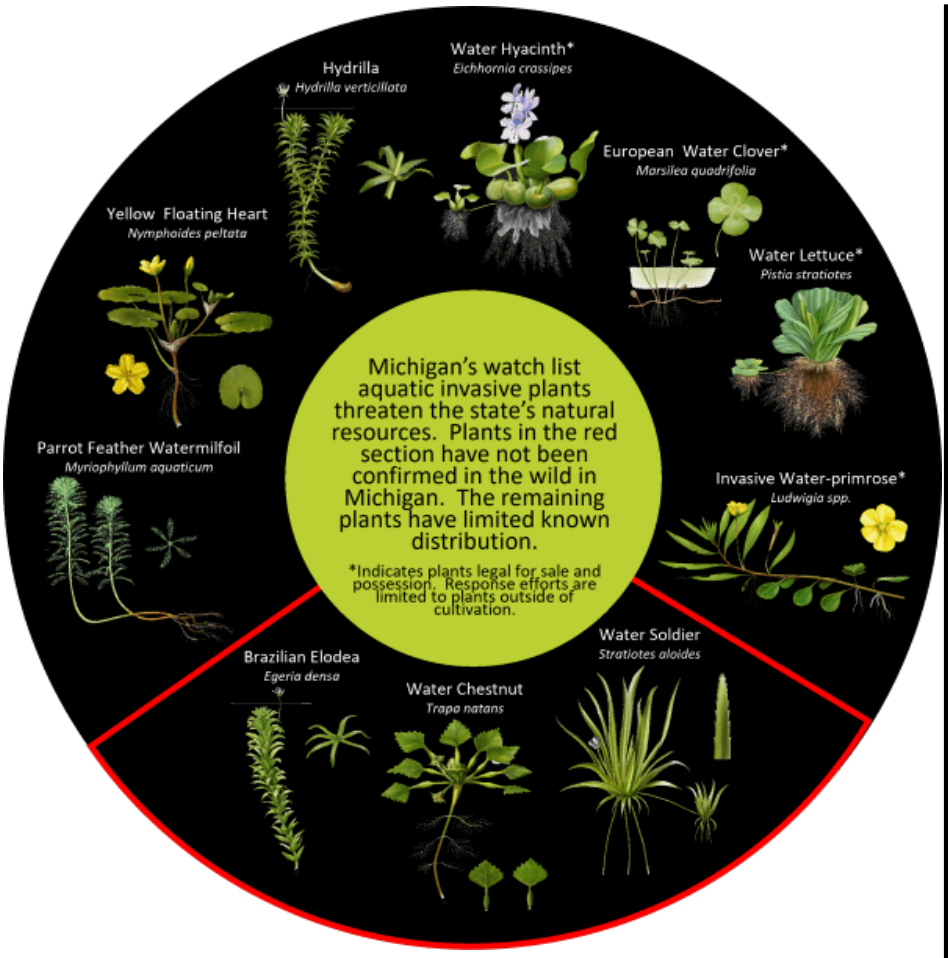
Service	Date
Water Quality/Survey	5/13
Weed & Algae	5/29
Survey	6/20
Weed & Algae	6/26
Survey	7/8
Weed & Algae	7/16
Survey	8/5
Weed & Algae	8/13
SSW Treatment	9/5
AVAS Survey/WQ	9/10



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, it is legacy phosphorous that's already present in the sediment, that can be a larger 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. Depending on the degree of internal loading, efforts to reduce external loading of nutrients may not make a visible difference in improving an impaired lake. Inquire for more information about phosphorus mitigation.

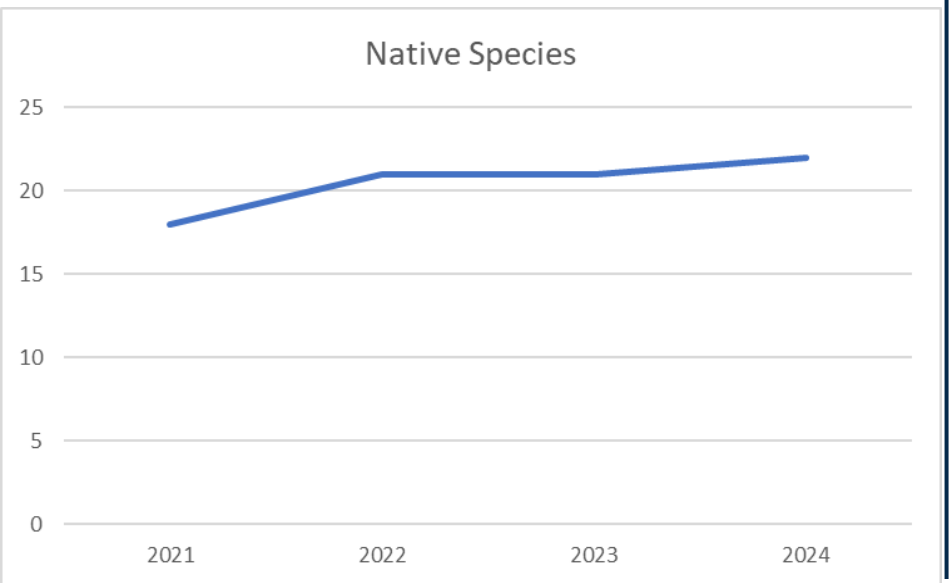
Sage Lake was managed throughout the summer of 2024 utilizing a combination of systemic and contact herbicides for the control of Eurasian watermilfoil (EWM), curly leaf pondweed (CLP), starry stonewort (SSW) and various native species/algae. EWM has continued to respond well utilizing systemic herbicides. EWM populations on Sage lake in 2024 were higher than 2023 but maintained a low amount of total cover throughout the 2024 season. It is important to keep in mind the goals of the program and aquatic plant management when evaluating lake conditions and treatments performed. One of those goals includes rotating active ingredients used to limiting plant resistance issues long term. A few new small infestations of SSW were found during surveys in the 2024 season and were targeted with Seclear G which has continued to be very effective on SSW. Wild celery remains to be one of the dominant native species in the lake and is managed to the best of our abilities within permit guidelines.



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.



The above graph shows the total number of submerged native species observed on Sage Lake over the last 4 years. Species richness has increased since PLM took over in 2021 where 18 submerged native species were found. A high of 22 native species was found in 2024 which is a great indicator of a healthy and diverse plant population around Sage Lake.

Seasonal variance among native plants is expected and can be impacted by many factors including; seasonal weather pattern, natural plant biological tendencies, or surveyor technique, just to name a few. The goal of tracking plants long term is to be able to 1) identify plants for early detection and rapid response 2) review long term trends for lake health. The most dominant species' in Sage Lake are Chara, Wild celery and Richardsons pondweed. Richardsons pondweed is a great submersed species to have, and Chara is the number 1 species to have within a waterbody. Chara is a natural filter to help clean the water. It also provides excellent habitat as well as stabilizing the sediments. As this is a great plant to have, it should be encouraged unless it starts growing to the surface of the water. If that happens, limited management can help balance the community to allow for navigation while still promoting the plant for a healthy ecosystem

PLM
LAKE & LAND MANAGEMENT CORP