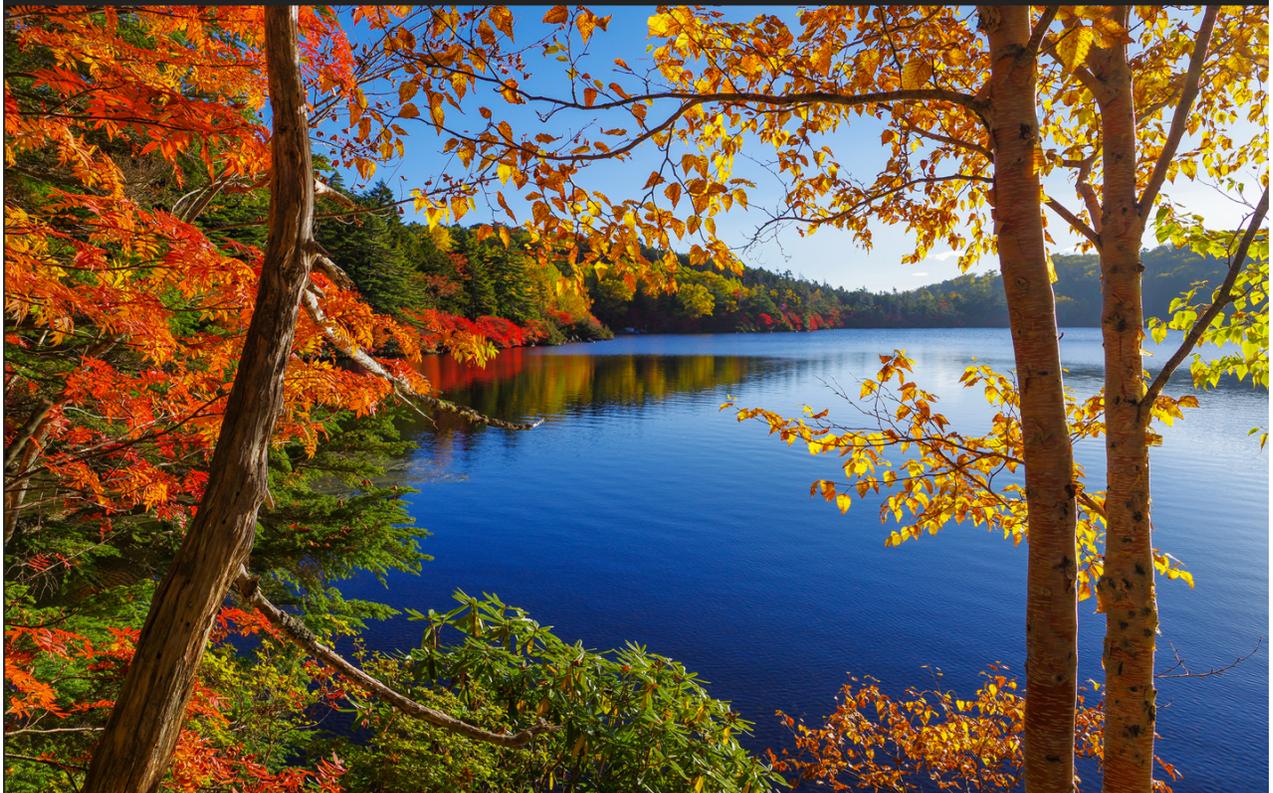


Camp Lake 2025 Annual Report



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Integrated Pest Management (IPM)

Aquatic Doctors Lake Management, Inc. uses and practices Integrated pest management (IPM) approach. IPM is an ecological approach to pest management in which all available necessary techniques are consolidated into a unified program so that pest populations can be managed to avoid economic damage and minimize adverse effects.

Chemical control or the use of aquatic herbicides is the most common/widely used method of controlling aquatic vegetation. These products provide expected results and are supported by decades of research and data. Many available products will selectively control exotic plants while having little to no effect on native plants. Chemical control is the most effective way to promote a healthy diverse lake.

Mechanical Control methods to remove existing stands of aquatic weeds include hand pulling, raking and using mechanized equipment. Mechanical removal can be effective but it's extremely time consuming and laborious. Regrowth from seeds and underground plant parts can be expected along with regrowth from plant fragmentation. Mechanical harvesting can actually promote growth and infestations of exotic/invasive plants. Mechanical harvesting is an alternative option to chemical control but is not advised to promote a healthy native plant community.

Biological Control is control by predators and parasites, either naturally occurring or introduced. At this time, there are very few options with biological control. There is no guarantee of success with biological control.

Target Plants found in Camp Lake:

Eurasian Watermilfoil is native to Europe, Asia, and north Africa. It is a submerged aquatic plant and grows in still or slow-moving water.



The stem is thin, flexible, often pinkish red. Whorled leaves delicate, usually spaced at least 2-3cm apart, with 12-20 pairs of leaflets per leaf. The tip of the plant is often red in summer. Flower spike emergent with whorled flowers and tiny, smooth bracts. Hybridizes with northern watermilfoil. Eurasian watermilfoil often branches frequently near the surface, and forms dense mats that make recreational activities difficult. EWM forms a canopy above native plants, choking out the competition. EWM also has the ability to overwinter underneath the ice, allowing it to be present throughout the winter. This gives the plant a head start in growing during the spring and chokes out native plants very quickly. EWM should be controlled as soon as it is found within a waterbody to prevent further infestation and loss of native plant diversity.

Management Goals for Camp Lake

- The control of exotic aquatic plants in Camp Lake is the principal goal of the aquatic management plan. The exotic plant species, Eurasian watermilfoil, Curlyleaf pondweed and various nuisance species, should be controlled throughout Camp Lake. Attempts to eliminate exotic invasive plants should occur and follow up treatments should be scheduled to reduce their recovery and regrowth.
- An aquatic plant management plan should promote a vast and diverse native plant environment providing optimal habitats for fish and other aquatic organisms. Native plants should be managed to encourage the growth of plants that support sport fishing and other recreational activities but do not impede or interfere with swimming and boating in high traffic areas. Chara should be allowed to grow throughout the lake, except in where it grows so tall as to interfere with boating and swimming.

Managing Submersed Aquatic Plants in Camp Lake

The systemic products Triclopyr, 2,4-D, and Florpyrauxifen-benzyl are selectively designed to control Eurasian Watermilfoil (EWM), while promoting the growth of native plant community. Worldwide 2,4-D is the most widely used herbicide and is extremely effective in controlling EWM. Due to Michigan Law 2,4-D cannot be used in the vicinity of drinking water wells. Triclopyr is also extremely effective on EWM, while not subject to water well setback laws and can be used in place of 2,4-D. Florpyrauxifen-benzyl, commonly known as ProcettaCOR, is a reduced risk systemic herbicide. ProcettaCOR is effective against Eurasian milfoil and hybrid milfoils without impacting most native aquatic plant species. It is effective at low concentrations and requires much less contact time than most systemic herbicides. This makes it both cost-effective and protective of non-target organisms. With the proper lake management plan and proper aquatic applicator services the amount of EWM should be reduced and become a maintenance program after it is properly controlled.

Contact herbicides, most commonly Diquat and Endothall, are broad-spectrum products used to control a vast majority of aquatic plants. Curlyleaf pondweed and other exotic species can be controlled very effectively with Diquat and Endothall. Treatments should be performed annually in the spring and maintained throughout the season. Contact herbicides are often used to control native aquatic plants. Native plants are selectively managed when they reach nuisance levels in specific locations such as beaches and developed areas.

Water Quality Testing

Fecal Bacteria (E. Coli) measurements count the number of live fecal indicator bacteria in the sample. These bacteria are considered reliable indicators of fecal contamination—when they are found in a lake, it is very likely that the water is being contaminated by animal feces. Contamination can potentially be derived from a number of sources, including failed septic systems, agricultural runoff, or waterfowl or wildlife droppings.

Total Phosphorus measures the total (organic and inorganic, dissolved and particulate) amount of phosphorus in the water. Phosphorus is usually the plant nutrient (i.e., fertilizer) that controls the amount of algal growth in lakes and ponds.

Secchi Disc depth is a measure of water clarity, determined by measuring the depth to which a black and white disk can be seen from the surface.

PH is the balance of acids and the bases in the water. The PH levels should range between 6 and 9. The level of 7 is considered neutral. Excessive weed growth and algae growth can make these levels increase to 9 and above.

Conductivity estimates the amount of total dissolved salts (TDS), or the total number of dissolved ions in the water. EC is controlled by: Geology (rock types) - The rock composition determines the chemistry of the watershed soil and ultimately the lake. Higher levels typically mean a more productive lake, while lower levels typically indicate a cleaner less productive lake.

Alkalinity is a measurement of the lake's ability to "buffer" or neutralize acidity. Minerals in the soil and watershed affect a lake's alkalinity. Lakes with alkalinity between 2 and 10 mg/L are considered moderately sensitive to acid rain. Alkalinity is measured by chemical analysis

2025 Camp Lake Management Program

The 2025 treatment season presented a unique set of challenges, including prolonged high temperatures, limited rainfall, and consistently low water levels. Despite these demanding conditions, **Aquatic Doctors** successfully managed nuisance algae and invasive aquatic vegetation on Camp Lake throughout the season.

Prior to the start of treatments, our lead applicator met on-site with members of the **Camp Lake Association (CLA)** to develop a comprehensive management plan tailored to the lake's specific needs. Given the recurring filamentous algae blooms fueled by agricultural runoff in the surrounding watershed, we prioritized an early and aggressive algae control strategy.

Algae treatments commenced on **May 7th**, targeting filamentous algae before it could proliferate. This proactive approach proved highly effective, halting extensive growth early in the season and preventing large-scale blooms.

Following the successful algae control, our focus shifted to managing invasive plant species identified during initial treatment surveys. Both **Eurasian Watermilfoil (EWM)** and **Curlyleaf Pondweed (CLP)** were detected, and targeted spot treatments were implemented to control these invasives while preserving beneficial native vegetation. Encouraging healthy competition among native plants plays a vital role in reducing the spread of invasive species, and we observed substantial reductions in EWM and CLP populations with each successive treatment.

The combination of timely algae management and selective invasive species control resulted in significant improvements to the overall health and ecological balance of Camp Lake. Despite challenging environmental conditions—typically conducive to excessive aquatic plant and algae growth—our management practices effectively maintained clean, healthy, and usable water conditions throughout the 2025 season.



2025 Permit Map-



Looking Ahead to 2026

As we look ahead to the 2026 season, we plan to continue implementing the proven management practices that have consistently delivered positive results on Camp Lake. The success achieved over the past several years—particularly since Aquatic Doctors began managing the lake in 2021—has led to measurable improvements in overall water quality, ecological balance, and recreational usability.

Our ongoing goal is to maintain Camp Lake as a clean, safe, and healthy ecosystem for both its human users and the fish and wildlife that depend on it. We remain committed to collaboration with the **Camp Lake Association (CLA)** and the lake's riparian property owners to ensure continued success and long-term sustainability of these management efforts.

Monitoring Program

While Aquatic Doctors is at Camp Lake controlling the aquatic vegetation and collecting water quality tests we will be monitoring and documenting the condition of the lake so we can provide warning of any changes in the condition of the lake that may need to be addressed by additional lake management activities.



STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species.
Clean all recreational equipment.

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