

Duncan Lake Update

Provided by PLM Lake & Land Management Corp.

Duncan Lake Aquatic Management Update – 2026 Season

Duncan Lake continues to be a vibrant and diverse aquatic ecosystem that provides excellent opportunities for recreation, wildlife habitat, and natural beauty. Our management efforts remain focused on maintaining that balance by controlling invasive species, supporting beneficial native vegetation, and monitoring overall water quality.

During the 2025 season, the aquatic plant management program was again successful in controlling the invasive species Eurasian watermilfoil and Curlyleaf pondweed. These plants have the ability to spread rapidly and dominate lake systems if left unmanaged, but through early-season monitoring and targeted treatments, they were effectively kept under control. Similar management strategies will be used again this year to prevent these species from re-establishing and spreading throughout the lake.

Native aquatic plants continue to play an important role in Duncan Lake's ecosystem. These plants provide valuable habitat for fish and wildlife, help stabilize lake sediments, and contribute to overall water quality. Our goal is not to eliminate native vegetation, but rather to maintain a healthy balance so that plants can thrive while still allowing residents to enjoy boating, swimming, and fishing. Muskgrass (*Chara*), which is a beneficial bottom-growing plant, will continue to be allowed to grow throughout much of the lake except in areas where it interferes with recreational use.

Algae management will again focus on targeted treatments using products such as SeClear and other copper-based algaecides when necessary. These treatments help manage nuisance algae growth and maintain acceptable water clarity throughout the summer months.

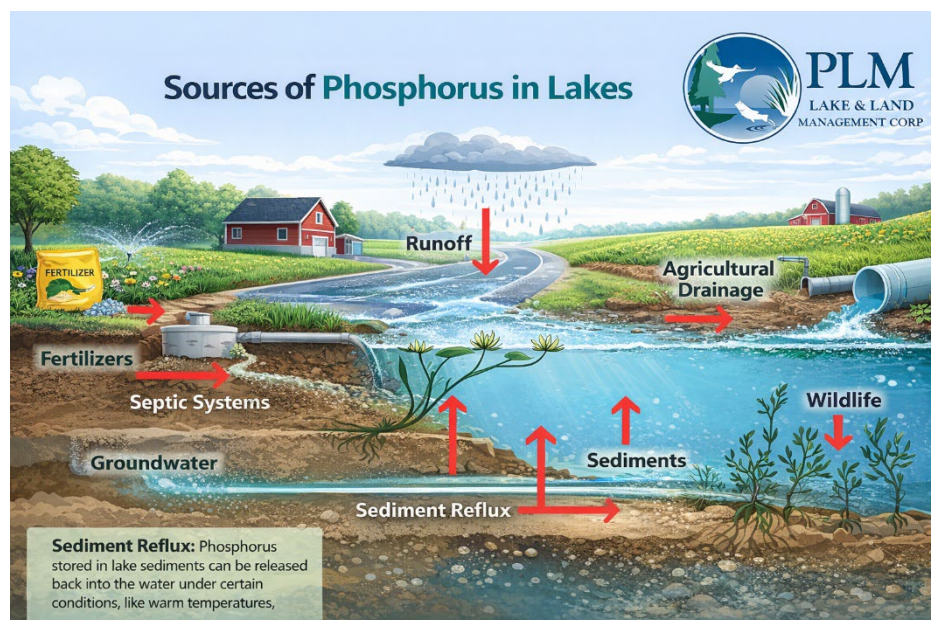
Inlet Water Quality Monitoring

In addition to aquatic plant management, PLM conducted late-summer monitoring of several inlets flowing into Duncan Lake to better understand potential nutrient sources entering the lake from the surrounding watershed. Nutrients, particularly phosphorus, play a major role in driving algae growth and can influence overall water clarity.

Sampling results showed elevated phosphorus concentrations at two of the monitored inflow locations. The inlet near 108th Street measured 61 µg/L of total phosphorus, while the Hanna Lake inlet measured 81 µg/L. These levels fall within the highly eutrophic range, indicating these inflows are likely contributing significant external phosphorus to Duncan Lake. In comparison, phosphorus concentrations measured at the lake outlet and the south inlet were lower, at 15 µg/L and 16 µg/L respectively, though still within a moderately eutrophic range.

These findings suggest that some phosphorus entering Duncan Lake originates from the broader watershed rather than solely from internal lake processes. Because nutrient loading is often highest during spring snowmelt and early rainfall events, additional inlet monitoring during the spring season is recommended. Collecting data during these high-runoff periods will help better identify when and where nutrients are entering the lake.

Understanding these nutrient inputs is an important step toward developing effective long-term management strategies that support improved water clarity and reduced algae growth in Duncan Lake.



Future Water Quality Management Options

While aquatic plant and algae treatments help manage immediate conditions in the lake, improving long-term water quality often requires addressing nutrient availability within the system. Because phosphorus is a key driver of algae growth, reducing the amount of bioavailable phosphorus in the lake can be an effective way to improve water clarity and reduce the frequency of nuisance algae blooms.

One potential option the Duncan Lake Association may wish to consider in the future is the use of a phosphorus mitigation product such as EutroSORB G. This product is a lanthanum-modified bentonite clay that binds with dissolved phosphorus in the water column. Once bound, the phosphorus settles to the lake bottom where it becomes inactive and unavailable for algae growth.

In addition to removing phosphorus from the water column, EutroSORB can form a thin layer on the lake sediments that helps capture phosphorus released from the lake bottom over time. This process can help reduce internal nutrient recycling, which is a common source of phosphorus in many Michigan lakes.

When used as part of a comprehensive lake management strategy, alongside aquatic plant management and continued watershed monitoring, phosphorus mitigation can support long-term improvements in water clarity and overall lake health. Continued inlet monitoring will help determine the potential benefits of implementing this type of nutrient management strategy in Duncan Lake in the future.

Wake Boats and Emerging State Guidelines

In recent years, wake boats and wake-surfing activities have become increasingly common on inland lakes throughout Michigan. These boats are specifically designed to create large waves using ballast tanks, specialized hull designs, and wake-enhancing devices that increase the size and energy of the boat's wake.

In response to growing interest and questions from lake communities, the Michigan Department of Natural Resources (DNR) released a fisheries report reviewing the potential impacts of wake boats on inland lakes. Based on available research, the DNR recommends several best practices when operating boats in wake-surfing or wake-enhanced modes. These recommendations include operating at least 500 feet from shorelines or docks and in water depths of at least 15 feet to reduce the potential for shoreline erosion, sediment disturbance, and impacts to aquatic habitat.

Currently, Michigan boating law requires vessels to operate at no-wake speeds within 100 feet of shorelines, docks, swimmers, or other watercraft. However, the additional wake-boat recommendations provided by the DNR are intended as best management practices rather than enforceable regulations at this time.

Legislation has also been introduced in the Michigan House of Representatives that would establish more specific operating requirements for wake boats when operating in wake-sport modes. Proposed legislation has included recommendations that wake boats remain at least 500 feet from shore and in water depths of approximately 20 feet when producing enhanced wakes. If adopted, these requirements could limit where wake-surfing activities can occur on many inland lakes.

Because wake-surfing waves can extend deeper into the water column than traditional boat wakes, lake size, depth, and shape can influence where these activities may occur without interacting with the lake bottom or shoreline. Lakes with narrower basins or limited deep-water areas may have fewer locations that meet the recommended distance and depth guidelines. As a result, many lake associations across Michigan are closely following these discussions as the state continues to evaluate potential long-term regulations and guidance.

