



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF NATURAL RESOURCES  
LANSING



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DIRECTOR

## **Loon Lake: Aquatic Nuisance Control Concerns**

March 17, 2024

Dear Concerned Citizens of Loon Lake,

It is well known the benefits of vegetation in aquatic ecosystems. The aboveground portion of vegetation creates a refuge for prey species and spawning/nursery habitat for most freshwater species including highly valued sportfish. Additionally, plants and algae support a forage base for all aquatic life making it the base of the food web. While the deep vertically growing root systems of aquatic vegetation protects the shoreline from unnatural rates of erosion and filters excessive nutrients from run off (e.g., lawn fertilizers). Therefore, over treatment is known to lead to an increase in algae blooms and possibility of invasive species colonizing the vacant sediment. The value of the ecosystem services provided by aquatic plants is heightened on developed lakes like Loon Lake. Hardened shoreline (i.e., seawalls, riprap) can negatively impact the aquatic ecosystem by increasing turbidity and bottomland scouring through wave deflection, damaging neighboring properties, decreasing water quality, and making it easier for aquatic invasive species to expand. Please refer to pages 25-27 of the attached document, Conservation Guidelines of Michigan Lakes, for more information on the importance of aquatic plants and the services lost through treatment.

Loon Lake has a long history of chemical aquatic weed treatment dating back to 2013 according to MiEnviro Portal. The first permit included the treatment of native weed and algae along nearly the entire shoreline (53 ac) with invasive plant species in remaining sections along the north shoreline (15.5 ac). By 2017, this treatment plan expanded to 53 ac of native weed/algae and 46 ac of invasive treatment, with additional treatment for Purple Loosestrife. These treatments occur multiple times throughout the summer. To date, the treatment map allows for flexible native weed and algae treatment within 128 ac, as well as flexible invasive treatment in 130 ac of Loon Lake. This steady increase in an apparent “need” for treatment disrupts the ecosystem’s ability to self-regulate and showcases the never-ending cycle many lake residents find themselves paying for year after year.

Beyond that, consistent treatment can have negative impacts to the fish community. As mentioned previously, plants and algae provide refuge, food, and spawning habitat for all species found in Loon Lake either directly (Yellow Perch) or indirectly (Walleye, which predated on Yellow Perch). A unique component of Loon Lake’s fishery history is that it once was home to inland Cisco, a planktivorous species that fed primarily on algae. The temperature and oxygen profile of Loon Lake is still suitable for Cisco, however changes in the habitat and subsequent changes in the food web has led to the expiration of Cisco in this lake. The attached report from Minnesota DNR does an excellent job of assessing the role of submersed aquatic vegetation and invasive species as fish habitat (Valley et al. 2004).

An aquatic vegetation survey was conducted on Loon Lake by PLM in 2014. This survey found a total cumulative cover of 96.87 with 16 species present, which does not appear to be a problem. I recommend the Loon Lake Improvement Board work with residents, frequent visitors (since it is a popular public lake), PLM, and an additional third-party restoration company to survey the

current aquatic vegetation community, establish what percentage of vegetation is considered “nuisance”, and pinpoint problem areas. In addition to pinpointing problem areas, should they exist, watershed usage should be evaluated to determine what external factors could be playing a role in unnatural levels of aquatic plant growth. With this information, a more detailed permit and treatment map can be submitted to EGLE that establishes management goals and objectives. Working together builds trust among constituents and holds everyone accountable for implementing best management plans both in the water and on land.

Best,

A handwritten signature in black ink, appearing to read "April Simmons". The signature is fluid and cursive, with a long horizontal stroke at the end.

April Simmons  
Fisheries Management Biologist  
Southern Lake Huron Management Unit  
Michigan DNR – Fish Division