Wiser Lake Cyanobacteria Management Plan (LCMP)

Summary

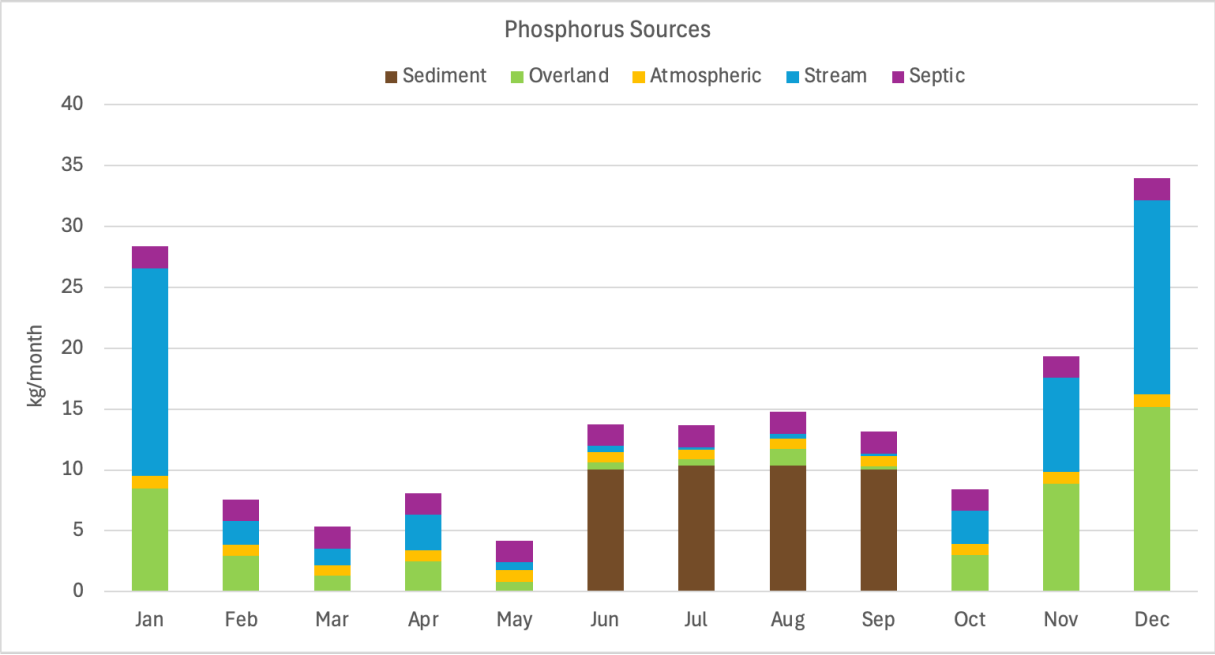
A Lake Cyanobacteria Management Plan (LCMP) was developed for Wiser Lake in response to years of harmful algae blooms (HABs). HABs produce toxins that can make people and animals sick if they have contact with the water. HABs are caused by algae that use phosphorus and nitrogen to grow.

Whatcom County Health and Community Services (WCHCS) received a grant from the Washington State Department of Ecology (DOE) to collect field data in 2023 and 2024.

WCHCS hired Aquatic Insight LLC, with an additional DOE grant in 2025 to help write the LCMP. Aquatic Insight analyzed the field data and used modeling tools to help identify possible causes of HABs in Wiser Lake. They also made recommendations for helping to reduce HABs in Wiser Lake.

Key Findings

- Phosphorous and nitrogen inputs into Wiser Lake are high
  - The main sources of phosphorus in the lake over the year are from Cougar Creek, overland flow, septic and the atmosphere. These are external sources. They account for 76% of phosphorous. The other 24% is from sediment in the lake.
  - The main source of phosphorus in the summer (June-September) is opposite from the annual estimate. In the summer, 74% is from the sediment, and 26% is from external sources (see chart).
  - There is a high level of nitrogen in the lake in the winter. It is most likely from agriculture, septic inputs, and groundwater.



- Water clarity in the lake is low during the summer, which may reduce algae and aquatic plant growth.
- Algae that produce toxins (HABs) are more common in late summer and fall.
- Data showed that water in Wiser Lake was well mixed throughout the year. This means that dissolved oxygen and temperature was consistent from top to bottom of the lake.
- More data is needed to find the best treatments to reduce phosphorus in the sediment.

Recommended Management Activities

- Continue monitoring the lake for water quality parameters.
- Reduce phosphorus in the lake in summer by treating with either EutroSORB (lanthanum) or alum (aluminum).
- Make an aquatic vegetation management plan so invasive aquatic plants don't take over when there is less algae in the lake.
- Continue regular septic inspections and provide help for improving failing systems.
- Work with Whatcom Conservation District (WCD) and farmers in the watershed to use less fertilizer and manure in the fields that drain into the lake and creek. Fertilizer and manure have nitrogen and phosphorus.

This plan is for reducing the risk of HABs in Wiser Lake. To be successful, this will require the participation of lake residents, the agriculture community, Whatcom County, lake users, WCD, and future partners invested in the safety of Wiser Lake. Funding for HAB reduction activities could come from a Lake Management District (LMD) or Lake Association (LA). These could help ensure long-term funding for lake improvement projects. There are state and federal programs that could also help provide funding to support this LCMP.

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