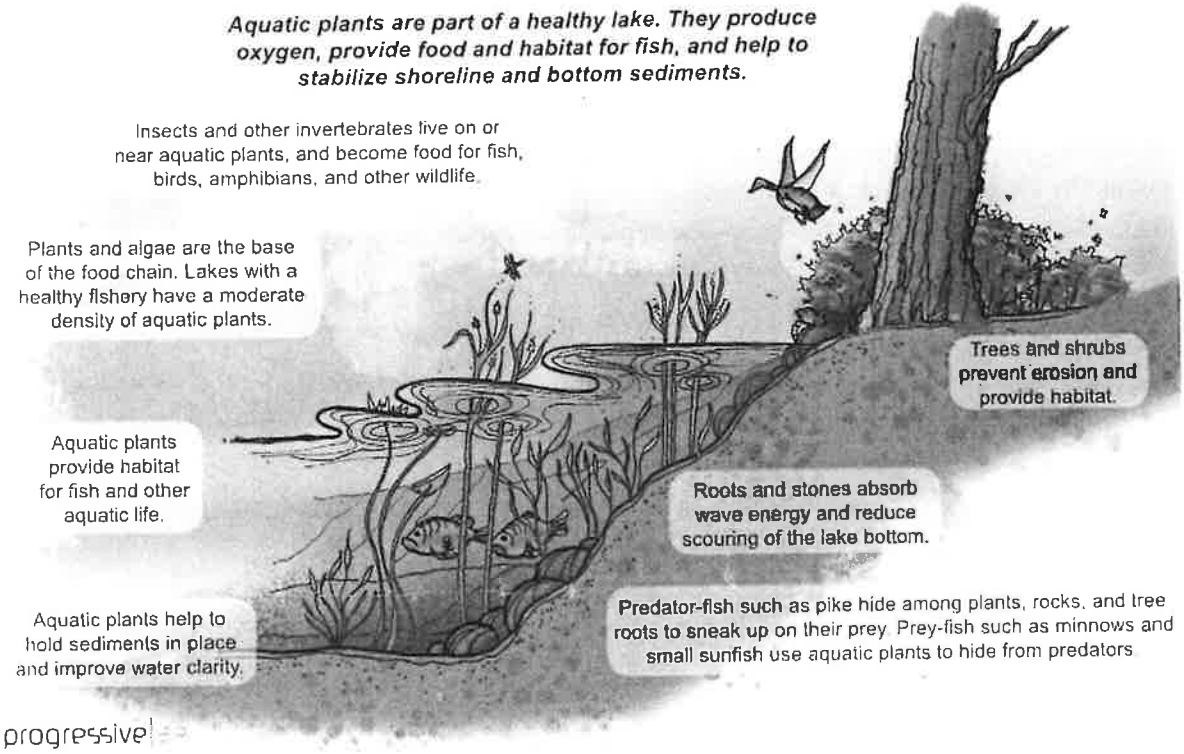
Lake Evaluation Summary

Budd Lake, Clare County

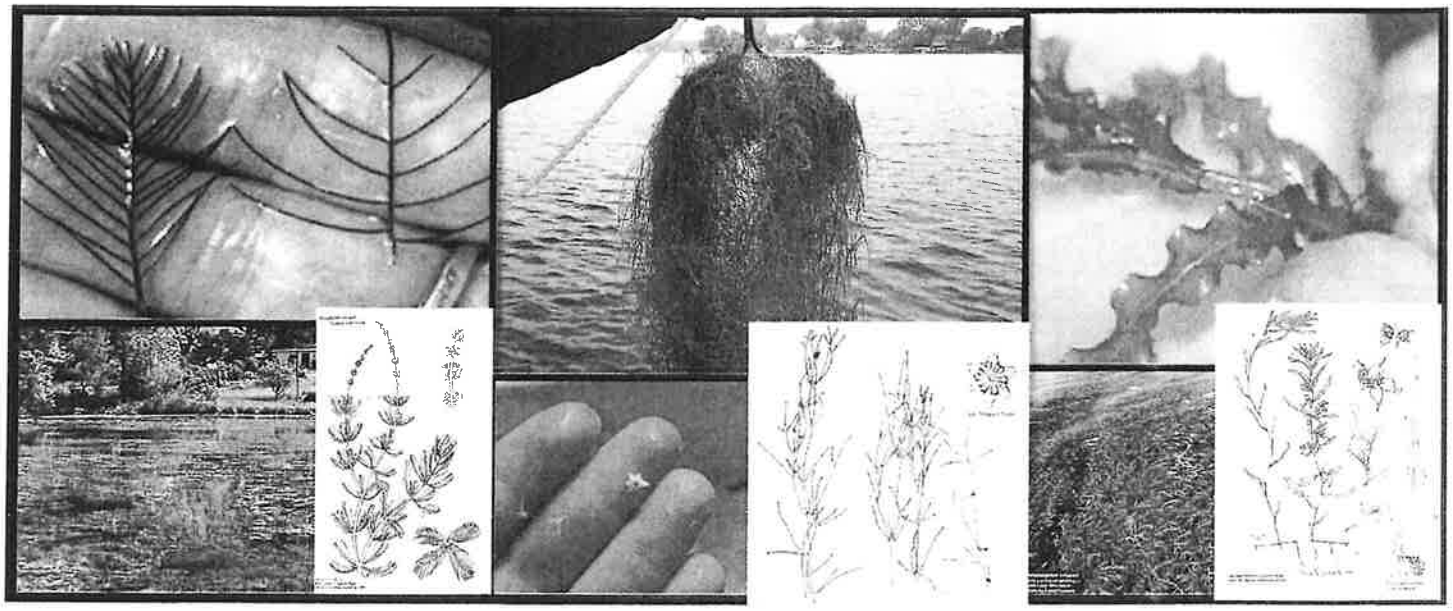
Kyle Heath– August 25, 2025

AVAS Survey and Water Quality Testing



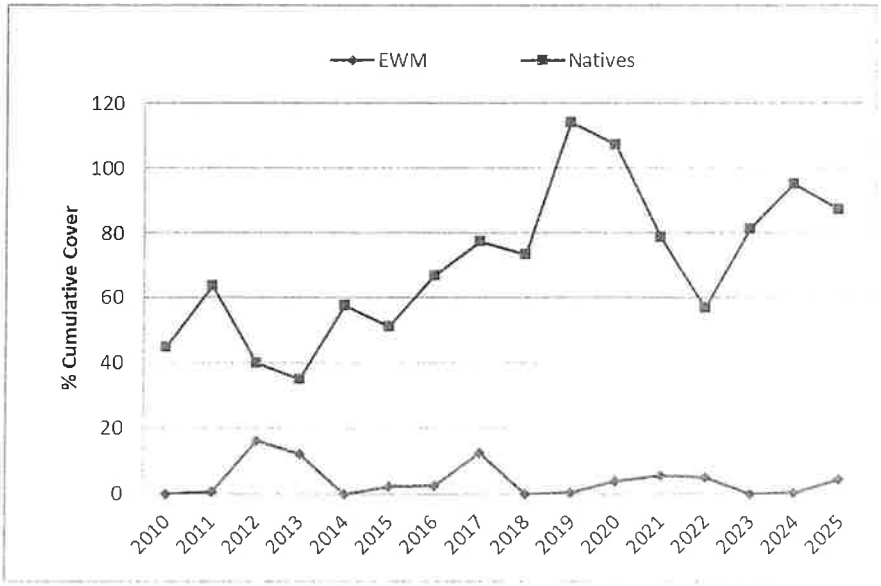
Budd Lake was surveyed on 25 August 2025, by experienced PLM scientists. The goal of this survey was to identify any exotic species and document native plant diversity. An AVAS Survey was performed, using EGLE approved survey techniques which broke the lake down into segments to document all vegetation present by species and density. July through September are ideal months for finding peak biomass in this geographical area. Out of the sites surveyed, 17 native species were found and Budd Lake had some EWM and no CLP. Overall, the growth in Budd Lake was good and chara, wild celery and various pondweeds were the most prevalent species found. Chara is a vital part of the lake ecosystem, providing sediment control and water clarity while providing habitat for fish. Over the past few years, Budd Lake is showing a strong native plant community. EWM and CLP were both treated in 2025 and will continue to be the focus of our management program along with wild celery and algae.

Nonnative (Eurasian) milfoil Native (Northern) Starry stonewort Curlyleaf pondweed



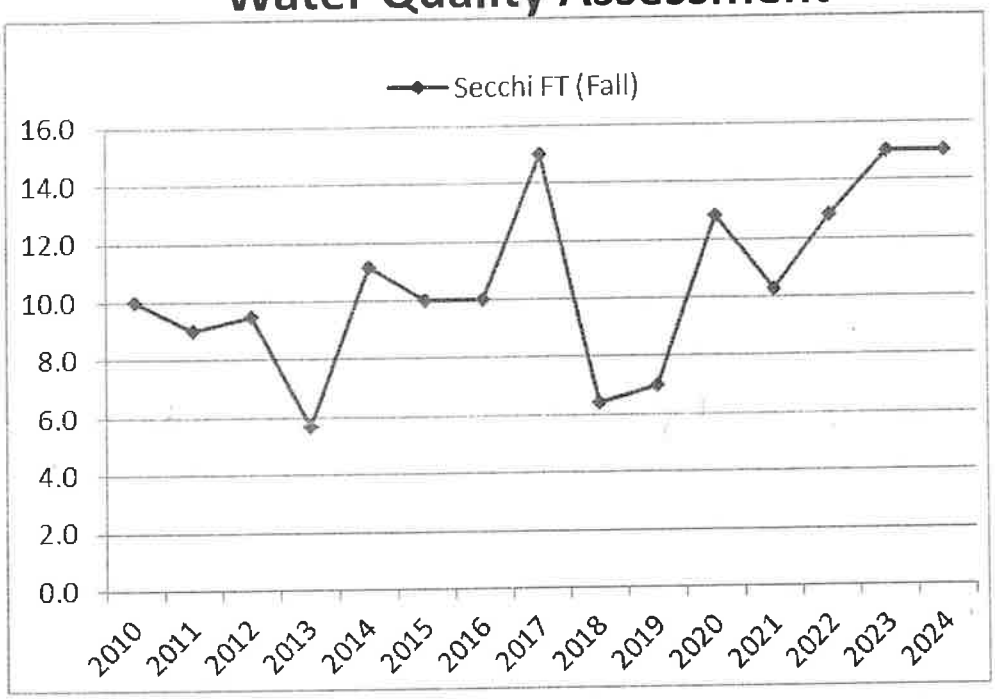
Exotic Plants—Exotic plant species cause most of the serious weed problems in Michigan's lakes. Exotic plants (or nonnative) are plants that are not native to this geographical area, which have been brought to the region inadvertently. Because they often have few natural enemies (their pests, pathogens, etc. may not have come over with them) therefore, they grow out of control. When exotic aquatic plants such Eurasian watermilfoil, Starry stonewort and Curlyleaf pondweed invade a lake, they often form extensive dense populations, crowd out native species, negatively impact fisheries, reducing the quality of habitat for other organisms and impacting the entire lake ecosystem. Management efforts are underway across Michigan to reduce the spread of nonnative aquatic plants, yet typically property owners and local municipalities are left to oversee and pay for management efforts.

This graph compares native plant cover to nonnative plant cover throughout Budd Lake. Participating in an annual management program, allows plant trends to be tracked over time. This allows for oversight over nonnative plants as well as tracking new infestations of any plants (early detection rapid response for nonnative species) and fluctuations in the native plant community. An annual management program can be vital in tracking changes over time and a great addition to any citizen scientist programs underway. Overall, this graph shows stability in the native plant community, an excellent sign for Budd Lake!



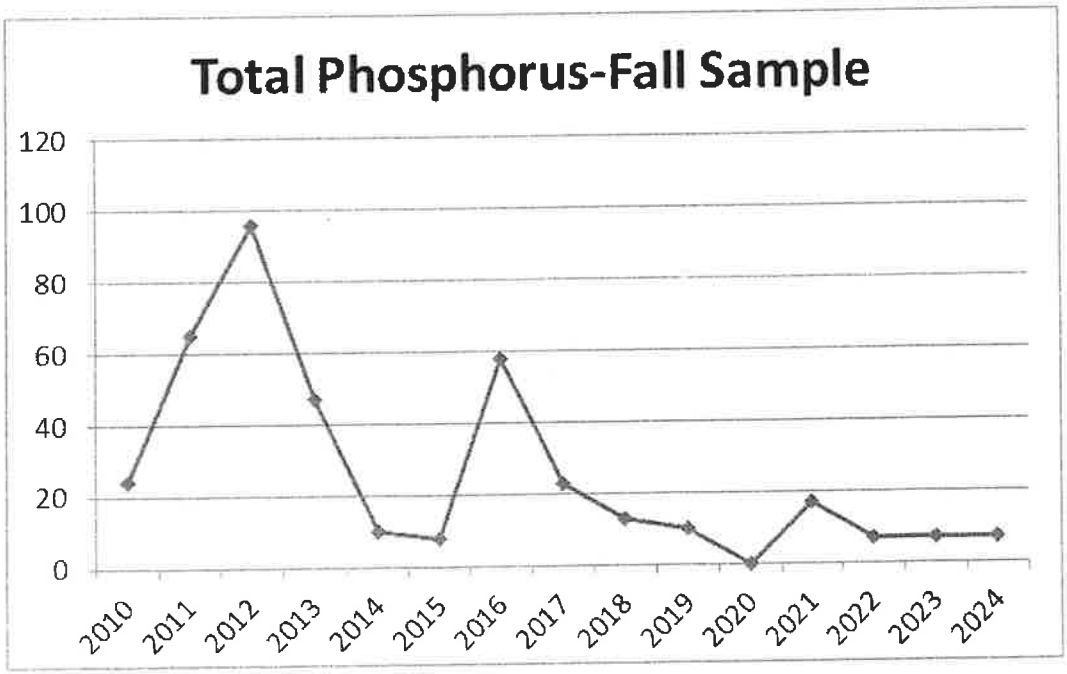
Observations reported and resident complaints show that wild celery is the biggest issue on Budd Lake. Out of the 95% coverage, 30% is just wild celery! PLM did three different test plots for control of wild celery. Using three different combinations to see which worked best. We were able to achieve control for the majority of the summer. Late in August, the wild celery was able to reach maturity and get to the surface. EGLE regulations does not allow us to kill wild celery but only suppress its growth. We will diligently aim to manage this nuisance native to the extent of permit restrictions!

Water Quality Assessment



This graph represents water clarity of Budd Lake. Clarity of a lake can vary yearly and monthly. Lake clarity can help determine productivity of a lake. Lake clarity can be impacted by rain/runoff, zebra mussels and erosion to name a few.

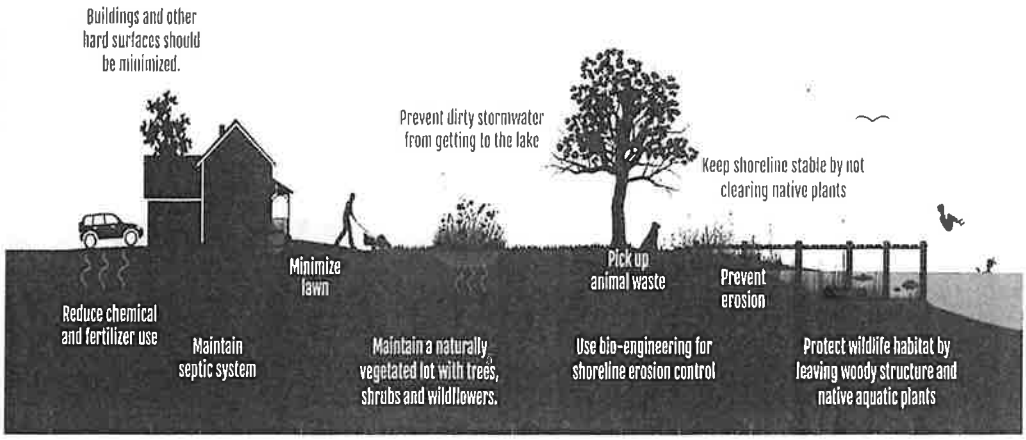
Budd Lake has good water clarity, based on both spring and fall measurements.

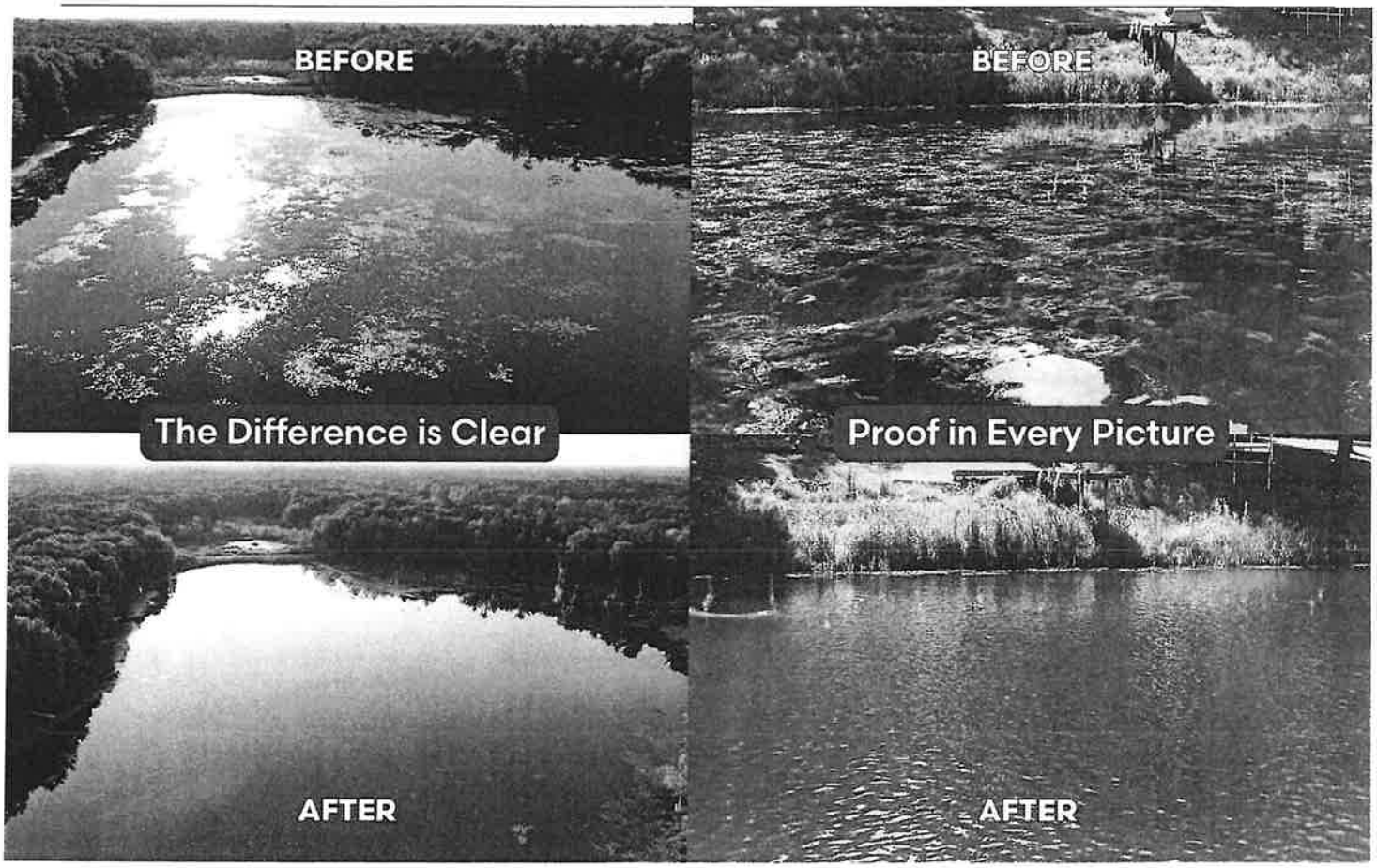


This graph represents total phosphorus in Budd Lake. Besides a few spikes in the TP on Budd Lake, the nutrient levels have been stable dating back to 2003. Seasonal and even weekly fluctuations can impact nutrient levels based on factors such as rain events, septic issues, lawn fertilizers, organic breakdown (tree leaves) to name a few. This is why looking at long term data is important. We want to be able to see trends, not just single events. For 2024, the nutrient levels do come out as normal! (5ug/L).

Shoreline protection

Shoreline development has led to habitat degradation and as lakes continue to become more and more developed, the impacts continue to be damaging to the lake ecosystem. From mowed grass and sandy beaches, to seawalls and riprap to wake boat waves and fertilizer, development has negatively impacted a lake in all ecological aspects. By working to reduce the human footprint around the lake, the health of the lake will be improved. Natural shoreline restoration is helpful from reducing nutrient loading and runoff to providing habitat for frogs and fish to naturally defending against Canada geese congregating in your yard, it is important that action is taken to minimize development impact and restore natural features.





Budd Lake's Recommended Management Program:

- Survey Program including:

  Annual AVAS Survey
- Water quality evaluation (optional)
- Exotic plant control where found (EWM & CLP)
- Algae and wild celery treatments around shoreline
- Aeration System Installation and
- Muck Pellet Treatments in Southern Basins

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