



QUARTERLY

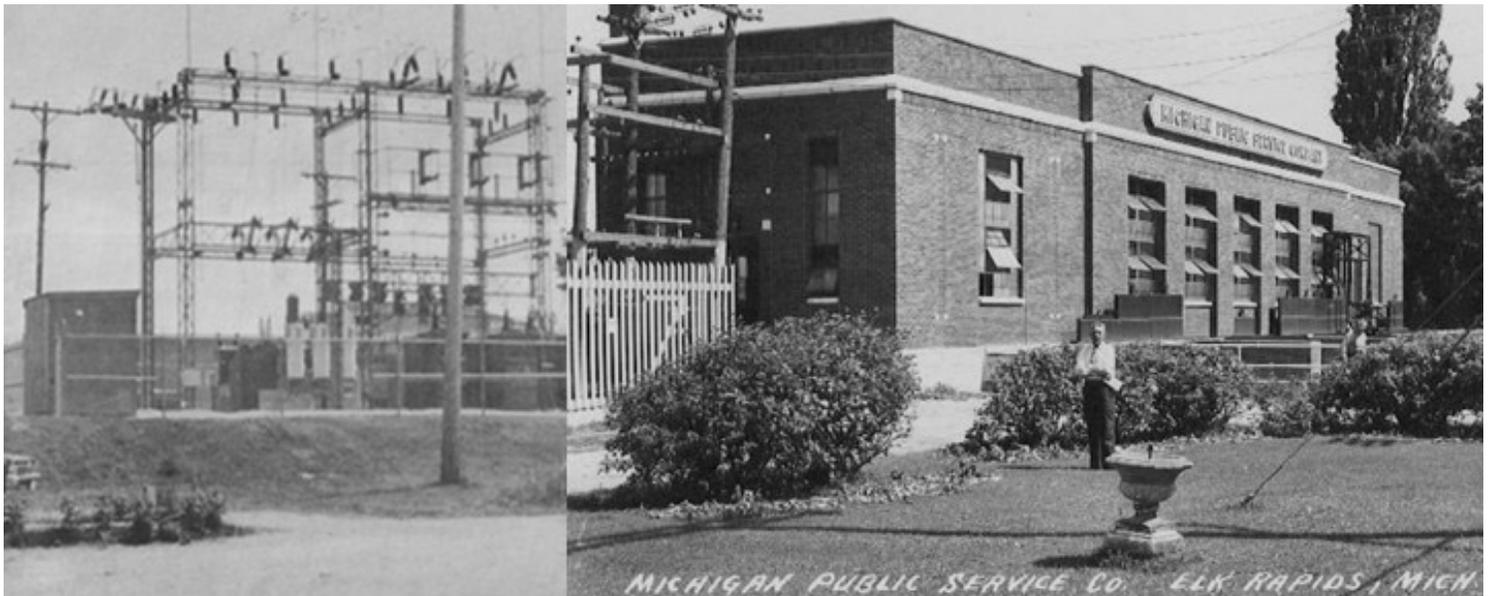
THREE LAKES ASSOCIATION

SERVING LAKE BELLAIRE, CLAM LAKE AND TORCH LAKE IN NORTHWEST MICHIGAN

WINTER 2026

Just Fix the Damn Dams

By Fred Sittel



Michigan Public Service Company dam powerhouse and electricity transmission equipment, Elk Rapids, circa 1940. The dam was later operated by Consumers Power Company until 1966. The dam still produces electric power today from two of the original four turbine bays.

Dams require maintenance and repair which can cost millions of dollars and the chain of lakes has two of them. Intermediate Lake and Elk Lake are the first lakes upstream of each dam and currently the only ones with legal levels which were established in 1973 by order of the Circuit Court. The levels for Intermediate Lake were changed on a temporary basis in 1980, and made permanent in 1990 by the court.

Legal lake levels are established by petition of lake residents or the county under the Inland Lake Level Law of 1961, which was recodified without significant change in 1995 as Part

307 of Public Act 451. The law also provides for establishment of a special assessment district to pay for construction, operation and maintenance of the lake level control structure which can range from a simple open weir with stoplogs to a dam with gates. Once lake levels have been ordered the county is obligated to control them which becomes the basis of the benefits derived by lake property owners against which assessments may be levied.

Assessment districts under the Lake level law are not part of Michigan's dam safety laws and they were not intended to be the means of ensuring the successful operation of dams. The legislature enacted the lake level law to help lake property owners and the county by providing a means for property owners to work together financially to construct and maintain a dam to regulate the level of a lake by controlling its outflow. The law also helps everyone in the county by supporting lake property values and county tax receipts.

Concentrating the cost on lake property is not the only option Antrim County has to pay for dams. Others include a contribution from the general fund which represents taxes already collected from all property owners, or a new county wide millage for dams which requires voter approval. However, many lake property owners cannot vote locally due to residency requirements.

The first assessment district on the chain of lakes was ordered by the circuit court in 1974 and included all taxable property in Antrim County and all lake properties on the chain within the county, from Elk Lake to Six Mile Lake. The last assessment was in 1995 for repairs at Elk Rapids dam and was levied as a per parcel cost for every taxable property in the county plus an added cost per foot of frontage for lake properties.

Members of TLA's board met with the drain commissioner and the lead lawyer working for the county recently. They claim the assessment district created by the 1974 court order and the

Sneak peek

PLANT SURVEY

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Executive Director

Lois MacLean

Mark your calendar:

April 2026 we will present a
boating Q&A (watch for your email
notification).

July 14 is the community education
outreach event at the Summit Village
Beach Club.

August 6 is our Annual Meeting at
the Summit Village Beach Club.

Dams *continued from page 1*

1995 levy based on it, which included all taxable property in the county, did not conform to the lake level law. We were told the county will ask the court to modify the assessment district by spitting it into an upper and a lower chain district of only lake and lake access properties, including those lying in Charlevoix, Kalkaska and Grand Traverse counties. That requires the other counties to pass resolutions. Charlevoix and Grand Traverse have not their passed resolutions as of this writing, seeking assurance the few hundred lake properties on the chain in their counties will be treated fairly.

After the new districts are ordered, they will consist of around two-thousand properties above Bellaire Dam and four-thousand above Elk Rapids Dam. Each district will be responsible for the current and future cost of maintaining and repairing the lake level control function of their downstream dam. County boards must approve costs greater than ten thousand dollars per year. The law requires notice and a public hearing to review assessments followed by approval from the county boards, after which property owners have fifteen days to appeal their individual assessments in court. The assessment districts will also be responsible for legal fees, court costs, the cost of public notification and meetings, plus overhead. The county can even defray the cost of defending legal challenges to the process by charging the district.

The assessment methodology to be used on the chain of lakes has not been determined yet. If on a per parcel basis, the county wide responsibility for large frontage parcels such as the Bellaire waste water treatment plant or the Grass River Natural Area might be the same as the average waterfront residence, shifting burden to individual owners. The assessment rate might also vary depending on the influence a dam has on a lake. Lakes further upstream lie at increasingly higher elevations and benefit less from lake level support by the downstream dam. Records even show during summer dry periods Lake Bellaire experiences an accelerated drop in lake level due to upstream dam gate closures that temporarily reduce inflow from both the Intermediate and Cedar rivers. A varying impact from dams could require the assessment rate to be different for each lake, concentrating more cost on those closer to a downstream dam.

Any differences in apportionment of benefits and costs within an assessment district will be based on lake level measurements and engineering studies. On the other hand, any costs attributed to county wide benefits will require a contribution from the general fund at the discretion of elected officials, so lake properties need better representation than they currently have. Even if officials recognize county wide benefits, they may be less willing to spend money

from already collected voter approved property tax millages once they are granted the authority to create new lake property assessments. In the end, the calculation of how much cost officials are willing to concentrate on lake properties may come down to whether the burden on individuals is deemed to still be reasonable and bearable.

Lake property owners also need to pay attention to the kind of projects they are held responsible for. The law requires projects to provide a lake level benefit to them. Maintenance and repair of mechanical gates used for flow control and the existing concrete structures which house them are usually regarded as providing lake level control benefits. The responsibility for specific projects has not yet been decided but many described in Antrim County's Diving-In publication do not appear to be for those kinds of things at all.

Increasing the size of a road culvert many miles upstream of the nearest dam and repairing spillways no longer used for flow control, raise questions about who benefits. If state legislators and hydrologists increase the maximum flow requirement for Bellaire Dam because of climate change resulting in a need to add more spillway for the second time since 1975, it may raise similar questions. The maximum flow requirement is related to the dam's high hazard rating which comes from its location a mile and a half downstream of the nearest lake with ordered levels and immediately upstream of the Village of Bellaire and public infrastructure. Liabilities from dam failure extend beyond the loss of a foot to a couple inches of average lake level as you go up the chain. The greater liability is the chance of downstream property and infrastructure damage and limiting that liability benefits all property owners in the county.

Privately owned power generation projects are required to set aside money to cover future costs up to decommissioning of their structures. Public works rely on local government's power to tax to cover these costs. Michigan's lake level law offers another option for county owned dams even if not specifically built for lake level control by authorizing lake property assessments. Assessments are not the same as property taxes which must be widely distributed and proportional. Instead, the assessments can be narrowly directed but must be for the measurable benefits of lake level control. Once the assessment districts and methodology have been established, county officials decide on the future costs to be assessed. Most county residents have forgotten the legacy of public benefits from the chain of lake's power dams but the cost of having provided those benefits will continue to come due in the future. Officials will recognize county wide responsibility at their discretion.

Clam Lake Aquatic Plant Survey

By Jeanie Williams
Intern Program Lead



Caught beneath the icy surface of Clam Lake is a whole world of plant life that was surveyed this past summer.

Aquatic plants are extremely important for healthy and thriving underwater ecosystems. Lots of people dislike aquatic plants (or don't think about them at all), but they deserve a closer look because they are so valuable to underwater ecosystems. Imagine the land without any plants – no trees, no grass, no shrubs, no wildflowers – and you will start to understand how essential aquatic plants are for lakes.

Just like on the land, plants are vital. They provide:

1. hiding places for small fish and invertebrates
2. food for fish, birds, mammals, and invertebrates
3. oxygen for respiration in aquatic life
4. shoreline erosion protection from wave action
5. nutrient capture from shoreline inputs
6. nutrient absorption and release for the whole lake

Native aquatic plants have the added benefits of both providing competition against nuisance and invasive plants and algae, and of forming symbiotic relationships with other native species. They also create beautiful underwater gardens.

Yet, an overabundance of aquatic plants can be problematic. Too many living plants may result in vegetation die-offs that rob the water of essential oxygen as plant mats decompose. Thick plant growth can also interfere with boating, fishing and swimming.

Invasive aquatic plants are especially prone to high growth, clogging waterways and

making boating and swimming impossible. Their high growth can also have devastating effects on lake ecology, nutrient cycling, light penetration, water flow, and biodiversity. In addition, aquatic invasive plants can be difficult to detect and eradicate simply because they are underwater.

However, most aquatic plants are not invasive, and in healthy systems, aquatic plants do not over grow. Getting to know the total plant community in a lake is an important way of monitoring the health of a lake, and makes it easier to take corrective action if necessary.

In the summer of 2025, Three Lakes Association completed a full aquatic plant study of Clam Lake with the help of five area youth as they took part in our high school aquatic science summer internship program. The participants were Carlina Luchenbill (Mancelona), Aspen Evans (Central Lake), Courtney Bordon (Kalkaska), Jaylea Erickson (Kalkaska), and 2023 intern Isabelle Borden (Kalkaska), who acted as the summer internship technical assistant.

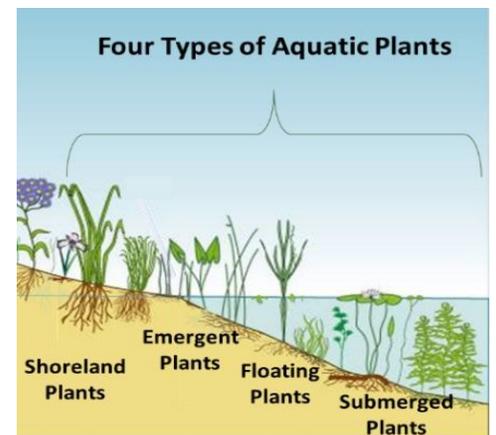
The last survey on Clam Lake was performed by Tip of the Mitt Watershed Council in 2013. Plant surveys are usually conducted every 5-10 years, so it was time for an update. We wanted to know:

1. How deep do the plants grow in Clam Lake? (Maximum depth of growth varies in every lake.)

2. How many different species of aquatic plants are in Clam Lake?
3. How are these plants distributed in the lake and how dense is their growth?
4. Are there any invasive species in Clam Lake? If so, what types and how extensive is their growth?
5. What does the plant collection tell us about the biodiversity and health of Clam Lake?

What we collected

Aquatic plants have a wide range of lifestyles. They can be fully submerged below the water, often what we call 'seaweed,' they can be floating like 'lily pads' and duckweed; or they can be emergent with their roots under water, but stick out into the air, like cattails and arrowheads.



Plant Survey continued from page 3

We focused only on submerged and floating plants for this survey.

Where we sampled

We used a “point intercept” design for this survey, with sites predetermined and placed on a grid over the entire lake. This has several advantages: the whole lake is surveyed evenly, it is more efficient than transect methods, and geo-referenced points can be more easily compared over time. It is the new gold standard for plant surveys, and this is one of the first surveys in Michigan to use the method.

We worked with Tip of the Mitt Watershed Council to develop a grid with points 90 meters apart, resulting in 227 points. Nine of those sites turned out to be on land, so we surveyed 218 sites in Clam Lake.

How we sampled

At each location we took one sample from the bottom of the lake with a double-headed garden rake. When the rake came on board, we determined total rake fullness on a 3-point scale.

- 1= not enough plants to entirely cover the length of the rake head in one layer.
 - 2= the plants cover the length of the rake head, but do not cover the tines.
 - 3= enough plants to completely cover the rake head and conceal the tines.
- We then identified each species and gave each species its own rake fullness score.

We also took underwater video footage at each location.

On land, every collected species was photographed and pressed for storage as an herbarium specimen.

Emily Johnson and Noah Jansen at Tip of the Mitt Watershed Council verified our identifications.

Fullness Rating	Coverage
1	
2	
3	

Results

The maximum depth of colonization for aquatic plants in Clam Lake was 18 feet. 50 sites exceeded this depth, or 23% of the 218 sites. Another 14 sites were below 18 feet yet did not support vegetation. Together, this was 29% of our grid with no vegetation.

This means that 71% of Clam Lake was vegetated. The average rake fullness for all vegetated areas was 1.77.

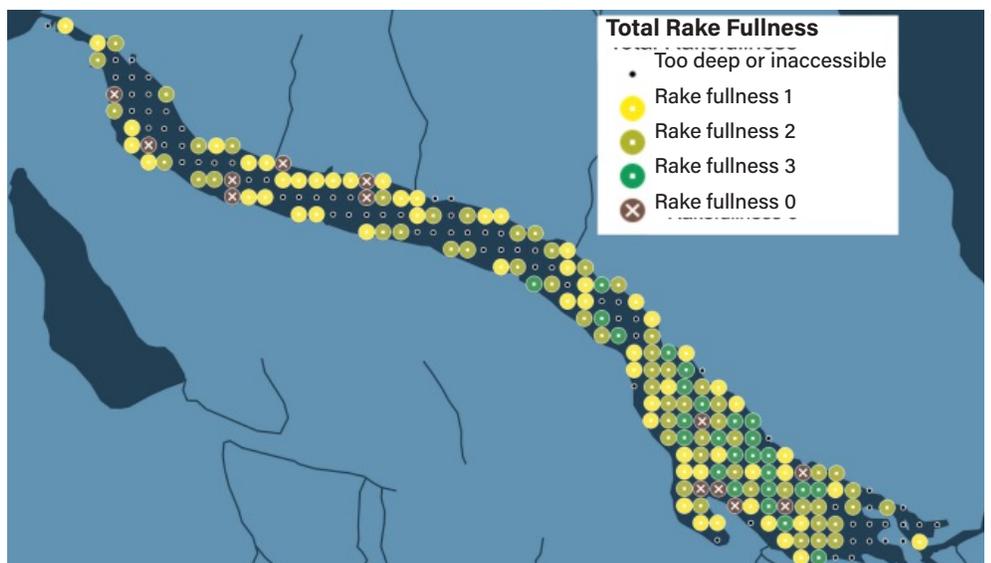
In the western half of the lake, the vegetation is located closer to shore since the middle of the lake is over 18 feet deep. In the eastern half of the lake, where it is shallower, the vegetation often grows completely across the lake. Plants also grow more densely in this portion of the lake. In fact, there were 14 sites in the far eastern end that were impossible to access due to the shallowness of

the water and the presence of dense emergent vegetation.

Diversity of aquatic plants and Quality of the ecosystem

Twenty-eight taxa of floating and emergent aquatic plants and macro algae were found in our official survey of Clam Lake in 2025. We also found filamentous algae and freshwater sponge, which were not included in this tally.

Seven taxa appear to be common, each being found in more than 20% of vegetated areas: *Chara* (Muskgrass), *Vallisneria americana* (Wild celery), *Elodea canadensis* (Common waterweed), *Potamogeton zosteriformis* (Flat-stem pondweed), *Najas flexilis* (Slender naiad), *Myriophyllum heterophyllum* (Various-leaved watermilfoil)



Total rake fullness of each sampled site.

and *Schoenoplectus subterminalis* (Water bulrush).

These seven comprised 75% of all plants in Clam Lake. The other 21 taxa accounted for about 25% of the plant growth. It is normal for a few species to dominate and most species to be uncommon, and in this case, having seven common species indicates good biodiversity in Clam Lake. Some lakes have only one or two dominant species. Filamentous algae were also common.

The number of species and their relative dominance can also be used to get a sense of the health of Clam Lake. Health of an ecosystem is largely determined by how much disturbance it experiences. Disturbance can be from human activity, such as motor boating, shoreline development, or underwater harvesting, or from unusual natural activity such as violent storms.

There are species that can tolerate a lot of disturbance and thrive almost anywhere. In Clam Lake *Chara*, or Muskgrass, is an example of an extremely tolerant species. *Chara* was the most common taxa in Clam Lake, occurring at 53% of vegetated locations. In contrast, *Bidens Beckii*, or Water marigold, is an extremely finicky species that requires a low level of disturbance; we found it in 11 locations in Clam Lake.

What this suggests is that Clam Lake is a moderately undisturbed lake overall. It's not pristine, but also not completely degraded. However, the level of disturbance varies quite a bit. The far west end receives a high amount of boater traffic and has a shoreline almost completely developed by commercial activity. Whereas the far east end has a totally undeveloped shoreline, very shallow water and, is surrounded by acres of wetland,

making it largely inaccessible to humans.

Maps of our data show that the west end is less vegetated and has fewer species per location, while the east end is densely vegetated and has the largest number of species per location. Diversity and density attenuate gradually from east to west.

We did not find any invasive plants in Clam Lake, which also suggests a less disturbed environment. However, because Clam Lake is a high-activity lake, it is always prone to invasive species so ongoing monitoring and rapid reporting are essential protective measures.

We call on our members and like-minded lake lovers to be on the lookout for two species in particular, Eurasian Watermilfoil, which is present in Torch Lake and many other Michigan lakes and Curly-leaf Pondweed, which has been recently detected in the Grass River. Rapid response to low-level invasion can prevent spread to the rest of the lake. If you suspect you see either of these species contact TLA right away for verification.

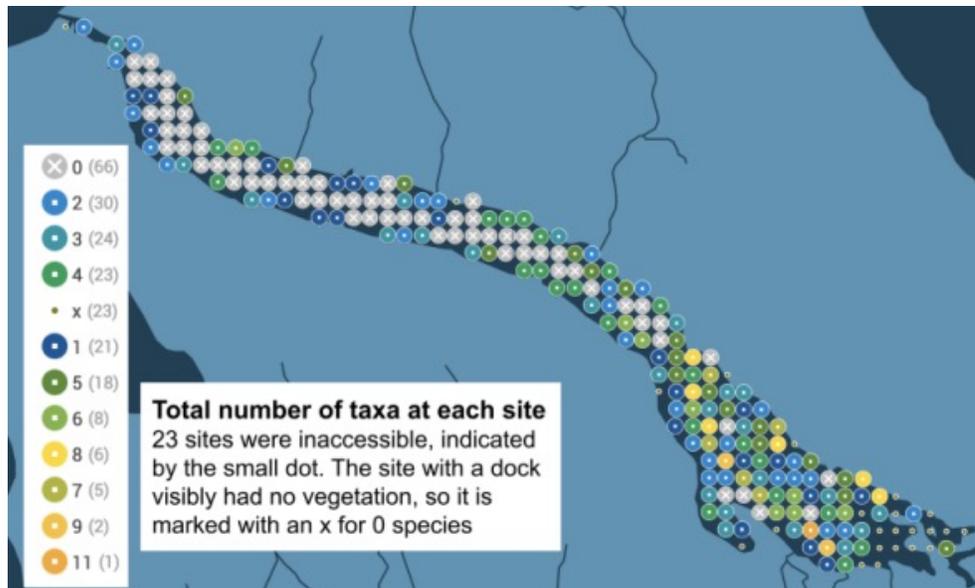
Clam Lake has a vibrant plant community which supports a diversity of fish and invertebrates, regulates nutrient cycling, and protects the shoreline from wave action. This plant community depends on shorelines and human activity that are below a certain threshold of disturbance. What exactly those thresholds are is not known, but we do know that there are many ways to continue to enjoy the lake while also being in good relationship with it.

Vegetated shorelines (aka shoreline buffers), reduced fertilizer use, quality septic systems, and maintaining nearshore vegetation such as reeds, rushes and cattails all support a healthy lake system. Boaters

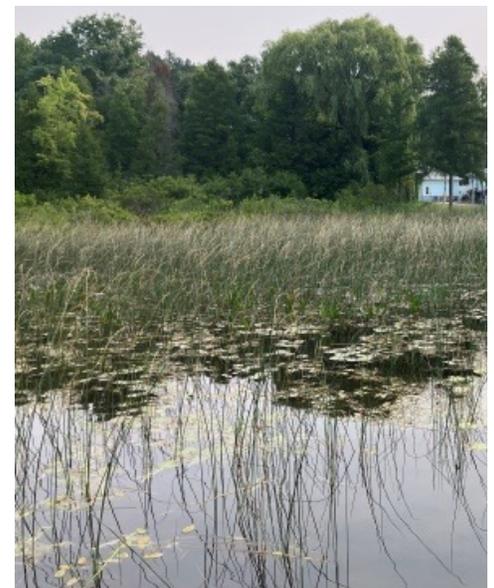
can help also. Good boat hygiene between lakes will limit the spread of invasive species. And making wakes only in the deepest parts of the lake and at least 100 feet from shore will protect native plants and prevent the establishment of invasive species. Because Clam Lake is very narrow, its vegetation and shoreline are vulnerable when large wakes are formed anywhere in the lake.

If you get a chance, put a camera underwater or get out your snorkel mask. It's a beautiful sight to see aquatic plants under the water and to be reminded of how much is happening out of sight to keep the lakes beautiful and the water clean.

The full report, presentation and slideshow on the 2025 Intern Program can be found at: <https://www.3lakes.com/projects/summer-intern-reports/>



Number of plant species per site.



Connections, Cooperation, and Care

Have you ever stopped to consider the very large network of people and organizations working behind the scenes to protect our waters? When we hike, bike, swim or boat, we're enjoying the results of tireless stewardship. We work in cooperation with many more than 30 groups protecting our watershed. Each one brings a unique strength and focus to the table.

For example, TLA works closely with the

Grass River Natural Area. While GRNA provides a stunning space for relaxation and education, those trails would lead to a very different experience if the surrounding waters and wetlands weren't protected. TLA doesn't build walking trails or maintain boardwalks, our focus is the scientific health of the water.

TLA is known as a "science-based organization," but the beauty is that anyone can be a "citizen scientist." You don't need

a degree to help us hunt for answers or ask the questions that protect our lakes. Sometimes things will come up and we find that there are questions that we didn't even know needed to be asked and answers that surprise us all! Together, with thousands of supporters and hundreds of leaders from A LOT of dedicated organizations we are a force that ensures these waters remain pristine for everyone.



Science Education Outreach Program

Impacting our youth to care about what we hold so dear.

The Three Lakes Association's Science Education Outreach Program (SEOP) continues to grow in both reach and impact, and the 2025–2026 grant cycle marked the most ambitious year in the program's history.

This year, 13 grant applications were submitted by teachers, requesting support for 18 separate environmental education events. The total funding requested reached \$12,470—the highest level ever recorded for the program. Through collaboration and thoughtful adjustments, the SEOP committee aligned awards with the program's \$8,000 budget, supported by the Three Lakes Association and SEOP fundraising efforts.

2025–2026 SEOP Grant Recipients

The following schools received SEOP support for the 2025–2026 school year. These grants provide hands-on environmental learning experiences that connect students with local ecosystems, conservation organizations, and outdoor classrooms.

Bellaire Elementary was granted trips to Grass River and Sleeping Bear Dunes.

Central Lake Schools got additional

support for their school garden.

Kalkaska Schools had seven teachers participate with trips to Grass River, Inland Seas Education Association, Sleeping Bear Dunes, Raven Hill and an apple orchard tour.

Mancelona Elementary was granted funds for Raven Hill.

Antrim County Home School Group took students to Grass River and Raven Hill.

Earth Roots Community Co-op received funding for an extensive Sleeping Bear Dunes Camp.

SEOP programming is made possible through the generosity of community donors and the continued support of the Three Lakes Association. We are deeply grateful to everyone who contributes to expanding environmental education opportunities for local students.

Looking ahead to the 2026–2027 grant cycle, we are thrilled to announce SEOP will expand its reach through a new partnership with the Elk-Skegemog Lakes Association, extending support to the Elk Rapids School District and strengthening regional collaboration in environmental education.

Membership

Donations

are the lifeblood of our funding for protecting and preserving our lakes.

Every membership counts!!

If you have not renewed for the 2026 year please reach out online or send a check with the form on page 7, which already includes your mailing label on page 8!

If your membership is up-to-date, please consider an additional donation.

Water Sampling Volunteers Needed

Based on our 2025 findings of elevated E.coli levels in some of the tributaries and streams entering our lakes, Three Lakes Association is planning to expand our E.coli monitoring activities in 2026. To accomplish this, we will need several volunteers who are willing to help collect and transport water samples periodically during the months of May - September 2026. Duties would include collecting water samples a few times per month and/

or transporting these samples to Traverse City for E.coli testing. No previous experience or technical background is necessary and all supplies and training will be provided. If you are interested and willing to be a 2026 volunteer for this important monitoring program, please contact

Rick Doornbos (rsdoornbos@torchlake.com , 989-600-9907) or Lois MacLean (3lakes.info@gmail.com , 231-735-3987).

- Your Membership Donation Makes It All Happen! -

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- Water Quality
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To join Three Lakes Association,

Please visit our website 3lakes.com or return this form with your check to: THREE LAKES ASSOCIATION, P.O. Box 689, Bellaire, MI 49615

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Summer, winter, spring or fall . . .

We would love to feature your photos!!

Show us why you think this place is so awesome!

Show us what makes it so special to you!

Fishing, boating, hiking, biking, camping, relaxing, scenery

Send to: 3lakes.photos@gmail.com



Snowshoeing the trails.



Ice Fishing on Lake Bellaire



Northern lights over Torch Lake



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The mission of the Association is to provide leadership to preserve, protect, and improve the environmental quality of the Elk River Chain of Lakes Watershed for all generations with emphasis on Lake Bellaire, Clam Lake, Torch Lake and their tributaries.