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Jeanie Williams, Executive Director  
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[3lakes.com](http://3lakes.com)

## 2020 Accomplishments

Funds from your annual membership renewal, from new TLA members, additional financial contributions, and numerous hours of volunteer time made it possible for Three Lakes Association to have a fabulous year in 2020. The following is a summary of our 2020 accomplishments.

### Eurasian Water Milfoil (EWM)



This nuisance aquatic plant was taking hold in several locations on the south end of Torch Lake, including the harbor at the mouth of Clam River, the embayment between Stony and Lone Tree Points, the harbor in Alden, and the sucker holes east of the south sandbar. We combined resources with the Torch Lake Protection Alliance to identify the locations of milfoil and apply chemical treatments in June and September that would remove it. After these treatments

very little EWM remains, but it will require regular attention to keep it in check. Over the winter we will work together to create a long-term plan for detecting and removing EWM from Torch Lake.

### Science Education Outreach Program



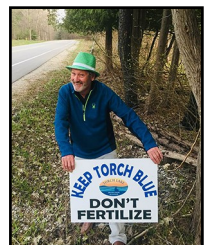
Three Lakes Association believes that life-long stewards of our natural resources begin their journey when they are young, which is why we make sure our local schools have the resources they need to provide hands-on environmental education. Three schools received grants totaling nearly \$3,000 for the 2020-2021 school year. They are: John R. Rodger Elementary School of Bellaire for hands on science kits, Central Lake Middle School for a science field trip and gardening tools, and Birch Street Elementary School of Kalkaska for a science field trip.



### Bold Partnerships

Here are some more ways Three Lakes Association shows up for the important work in our watershed.

- We revised and printed a new version of the swimmer's itch rack card in association with five other water protection groups. 3,800 educational cards were distributed to our community.
- We combined efforts with Torch Conservation Center to distribute Torch Lake Protection Alliance's Keep Torch Blue, Don't Fertilize yard signs around Torch Lake. Thank you to all of our members who posted one in your yard.
- With the Grass River Natural Area and Grass River riparians we are finding ways to better protect the Grass River. Much more will come in 2021.
- We helped install and maintain digital water level monitoring devices throughout the Chain of Lakes to better understand the way water flows, and better keep water levels where we want them to be. This data will support a study by the Army Corps of Engineers on the hydrology of the whole chain.
- We make sure your voice is heard in support of water protection whenever permits are sought in our watershed. We comment on EGLE permits, speak up at public hearings, and communicate behind the scenes with the members of our community, urging everyone to do the right thing for our waters.



## Stellar Summer Intern



Our internship program was cancelled this year due to the pandemic. We were instead graced with a young volunteer who wanted to take on some water quality data collection. Sydney Frederick of Traverse City West Senior High School took on two projects:

- 1) He collected valuable temperature profiles of Lake Bellaire and Intermediate Lake in July and August, which contribute to our long-term data set for these lakes.
- 2) He disturbed mats of golden brown algae to different degrees and observed how quickly the algae re-populated the disturb areas. Turns out more disturbance results in slower repopulation. For the full results, see our website.

## Golden Brown Algae (GBA)

Golden brown algae appears as a yellow-brown mat or haze on the bottom of our lakes. It is a collection of naturally occurring diatoms that are much more abundant than ever before. TLA is actively seeking the reasons for this change and took on several projects this year to further our understanding.



- 1) Weekly collections of the algae and water chemistry to track changes through the summer.
- 2) Collections of algae and water chemistry at different times of day to better understand the relationship between nutrient availability and algal activity.
- 3) Collections of algae from locations all around Torch Lake in June and August to find out how much species variation there is in different locations.
- 4) Experiments with Torch Lake GBA in small cups containing high and low quantities of various nutrients to find out the nutrient preferences of different diatom species that make up the GBA in Torch Lake.
- 5) Synthesis meeting in December to examine all that we know so far, to plan for the future, and to recommend relevant actions to our membership.

## Long-term water quality monitoring

Even though the state-sponsored program for water quality monitoring was on hold this year, TLA continued to collect the data just like we have for the past 16 years. Our committed volunteers measured water clarity every week, and collected monthly water samples for chlorophyll A and phosphorus measurements above the deepest place in these four locations: Lake Bellaire, Clam Lake, North Torch Lake and South Torch Lake.

This long-term data set is the only way to make sense of new changes in our waters. It will also provide future generations with information about the normal functioning of our three lakes, which they will need to interpret any changes they might see.



## Estimating the amount of phosphorus entering Torch Lake

### “What’s changed since we first started observing Golden Brown Algae (GBA)?”

This has been THE question that Professor Jan Stevenson constantly encourages us to answer whenever TLA's Water Quality Team is designing studies to investigate the root causes of this aesthetic problem plaguing most every inland lake in NW Michigan. The idea is to determine if the amount of phosphorus entering Torch Lake from all envisioned sources had changed since 2005...sources such as tributaries, groundwater, and rain. The phosphorus (soluble and biologically bound phosphorus) in lake water is attracted to microscopic particles of insoluble calcium carbonate that naturally settles to the bottom of the lake and remains there forever, as part of the next millennium's limestone deposit.



This is a year-long study where samples are collected at a deep basin in Torch Lake at a depth of about 150 ft after each of the major seasons, spring, summer, winter. We anticipate results during the summer of 2021, which may be useful in designing next step actions.

## 2021 Plans

In 2021, your membership and donations of time and money will allow us to continue pursuing our Mission by funding our standing projects and programs. Specific goals for 2021 are:

- Continue long-term water quality monitoring of all three lakes
- Continue producing quarterly newsletters, filled with pertinent lake protection information
- Develop a long-term plan for managing Eurasian water milfoil in Torch Lake
- Re-launch our student intern program, pandemic willing
- Interpret the results of the sediment traps study, plan next steps, e.g. estimate phosphorus loading from groundwater and in rain water
- Implement a stronger committee structure within TLA
- Commit to increasing membership in 2021
- Take actions to further protect the Grass River
- Develop a strategy for golden-brown algae study and coordinate our efforts with Torch Lake Protection Alliance
- Continue to engage with water protection partners on our three lakes and throughout the Elk River Chain of Lakes.
- If COVID-19 allows, co-host an Environmental Education Event

## Join or Renew

Please join or renew your membership today and consider an additional donation to support a specific project or program.

Our watershed thanks you!

To join or make a donation, go to our website, [3lakes.com](https://3lakes.com), and use the PayPal option or mail us a check:

**TLA, P.O. Box 689, Bellaire, MI 49615**



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