

Current Reflections

Fall 2020 / Winter 2021



Resilient Shorelines Protect Northern Michigan Lakes

Northern Michigan is home to thousands of acres of inland lakes and hundreds of miles of shoreline, but the connection between healthy lakes and shorelines is oftentimes overlooked. A lake cannot support a robust fishery, nor can it have good water quality without a healthy shoreline. A healthy shoreline is a resilient shoreline: one that responds to change yet retains its functions over time, and protects the lake it borders without impacting the lake's ecosystem.

Shorelines serve as a critical interface between land and water. They protect their lakes every day by filtering runoff and providing critical habitat for hundreds of shoreline-dependent amphibians, birds, fish, and more. When shorelines are compromised, so are the functions that serve to protect our lakes.

All shorelines are in a state of constant change. Whether the change is natural, influenced by human activities, or both, is an important distinction. Shorelines change naturally over time because they are constantly bombarded by waves and ice. This perpetual motion grinds and displaces soil particles, which end up in the lake. In natural conditions this is typically a very slow process over a long period of time. However, human activities accelerate natural erosion processes. Accelerated erosion can lead to impaired water quality, nuisance plant growth, degraded habitat, loss of recreational opportunities, and other negative impacts.

Enhancing shoreline resiliency is key to countering both human and natural influences. For natural shorelines that have a healthy greenbelt of trees, shrubs, grasses, herbaceous plants, and emergent plants like bulrushes growing in nearshore areas, the best practice is to retain as much vegetation as possible. These plants are critical to stabilizing shorelines.

Restoring resiliency to shorelines that have been altered requires more effort, but will provide significant benefits to the lake in the long run. Consider taking the following actions as they apply:

- Where shoreline plants have been removed, plant native species adapted to local conditions. They will hold soils in place and provide important habitat.
- Refrain from introducing or replenishing sand to create an artificial beach or to try and restore lost shoreline.
- Do not install a vertical seawall. It can cause additional erosion to neighboring properties and lake-bottom scour. If you have a seawall that is in disrepair, consider replacing it with a more natural, or softer, approach to stabilizing your shoreline, such as a greenbelt of native plants.
- Much like vertical seawalls, oversized boulders and riprap can actually cause erosion. Smaller, rounded fieldstone sized for site conditions is a better approach. This technique should include a variety of sizes of fieldstone and be gently sloped at a 3 horizontal: 1 vertical or flatter slope.

For more information about using fieldstone on shorelines, refer to the Fall 2018 edition of Current Reflections at <https://www.watershedcouncil.org/current-reflections-newsletter>.

For more information about shorelines, check out the Watershed Council's publication Understanding, Living With, and Controlling Shoreline Erosion and other resources, available for download at <https://watershedcouncil.org/publication-download-library>. In addition, Michigan Shoreland Stewards (www.mishorelandstewards.org) and the Michigan Natural Shoreline Partnership (www.mishorelinepartnership.org) have resources available to help you protect and restore your shoreline.



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Reflections From Our Executive Director

Setting the Watershed Council Up for Success

The Watershed Council board of directors and staff work hard each day to protect Northern Michigan's incredible water resources. While doing so, we always have an eye on the future to ensure that our programs result in long term success for our organization and the environment around us.



Gail Gruenwald
Executive Director

This year, the Watershed Council is undertaking extensive planning to ensure the sustainability of our organization and to reflect our current world in which we live. We were fortunate to receive generous family foundation funds to complete this work. Our planning involves five main topic areas: board of directors' leadership and governance; staff leadership transition planning; fundraising and financial planning; collective planning with three other Northern Michigan regional organizations; and equity, inclusion, and justice planning. Each of these topics is relevant and necessary for the Watershed Council to be the best possible organization that we can be to fulfill our essential mission.

The board and staff are serving on committees that approach each topic with extensive information gathering, strategic goals setting, and implementation of action steps. In future months we will share our results with you in our newsletter so you can see the fruits of these planning efforts. These will not be "sit on a shelf" plans but will directly guide our program development, staff and board composition, outreach to other organizations and communities, and financial stability. While time-consuming, the effort will be worth it. The Watershed Council will enter the next decades prepared to address critical issues in the best possible way.

If you would like more information on our planning effort, feel free to contact me at (231) 347-1181. Thanks for all of your support!

Watershed Council Receives Rotary Grant for Education Programs

Tip of the Mitt Watershed Council is excited to announce a recent grant award from the Petoskey Rotary Club Charities, Inc., to support our education programs. We have purchased water quality monitoring equipment, new petri dishes for sorting specimens, and a new microscope to allow students to have an up-close look at the organisms that call Northern Michigan home. This new equipment will be used to engage students that participate in our Watershed Academy and Water Resources Education Programs, in addition to students at Petoskey Elementary and Middle Schools and the Petoskey Program for Able Learners with Special Needs. Thank you to the Petoskey Rotary Club for allowing us to continue to provide hands-on, real world educational opportunities that help students better learn to care for our lakes, rivers, streams, wetlands, and groundwater.

Water Resources Education Coordinator Eli Baker showing off some of the kits students will be using to test water chemistry, which were purchased with Rotary Club funds.



Line 5 Great Lakes Tunnel Project

Tip of the Mitt Watershed Council is working toward the goal of no transportation of crude oil in, on, or under the Great Lakes. Whether by pipeline or vessel, a spill in the Great Lakes would be devastating to Michigan's natural resources, the health of our citizens, and our economy. As we write this newsletter, Enbridge Energy, Limited Partnership, is in the midst of seeking approval to construct and operate a pipeline within a tunnel below the bottomlands of the Straits of Mackinac.

Simply replacing the Straits portion of the pipeline ultimately fails to eliminate the risk to the Great Lakes and Michigan's public trust waters. The inland portions of Line 5 will still remain, with nearly 400 sites where it crosses a waterbody in Michigan. Alternatives exist that would address the risks associated with the entire pipeline infrastructure, address Michigan's energy needs, and could be implemented with little to no impact on Michigan's economy.

The Watershed Council is concerned about many aspects of the current pipeline applications before the State of Michigan. We are hopeful the state will hear our concerns, as well as those of our many partners and the citizens of Michigan. Below is a description of the proposed Great Lakes Tunnel project, and details about the potential adverse impacts associated with the project.

Enbridge has applied to the State of Michigan for multiple permits, including a permit for the impacts of construction on the bottomlands of Lake Michigan and wetlands, and one for wastewater discharges to the surface water of Lake Michigan. Decisions for these permits are expected in early December and late November, respectively.

Enbridge is proposing an approximately 3.58 mile tunnel between Michigan's Upper and Lower Peninsulas. Construction activities would be expected to occur 24 hours a day, six days a week for an estimated two years. The tunnel would be constructed through rock and, in the deep channel of the Straits, through glacial deposits. The top of the tunnel would be approximately 60 feet beneath the lakebed. If the tunnel is constructed, installation of a 30-inch pipeline is proposed (Line 5 in the Straits is currently two 20-inch pipelines), which would take an additional eight months.

Enbridge is proposing to withdraw water from the Straits to excavate material out of the tunnel in the form of a slurry, which is a mixture of solids and liquid. The water for use during the construction process would be up to 1.99 million gallons a day on the north side from the Straits, and could be up to 1.99 million gallons per day on the south side.

The slurry would be treated to remove solids, and the remainder sent to a settling pond. Water from the pond would be treated to meet water quality standards and then discharged into Lake Michigan. It is anticipated that approximately 1,500 gallons per

day could be generated on the north side, and approximately 15,000 gallons per day on the south side.

The Watershed Council has significant concerns about the proposed permit applications and provided detailed comments to the state. Some of our primary concerns include:

- **Impacts to Great Lakes coastal wetlands.** Coastal wetlands are considered to be some of the most valuable ecological areas in the Great Lakes. They provide critical habitat for fish and wildlife, erosion control, water quality protection, and recreational opportunities. The proposed tunnel site is considered one of the most pristine Great Lakes coastal wetlands within Lakes Michigan and Huron.
- **Threatened and endangered species.** Houghton's goldenrod and dwarf lake iris, both federally-listed threatened species, are present on the north side in Mackinac County. Based on a 2019 survey, approximately 3,777 Houghton's goldenrod plants and 7,757 dwarf lake iris plants will be impacted by the project. Enbridge proposes to relocate only 50% of these plants to mitigate for the loss.
- **Migratory birds.** The Straits of Mackinac are important for waterbird migration, with tens to hundreds of thousands of individuals passing through the area each spring and fall, including more than 25 species of waterfowl, common loons, grebes, and cormorants. In addition, summer breeding birds include some federally endangered species such as the piping plover and other species with special value and protected status (bald eagles).
- **Tribal fishery rights.** The proposed project occurs within the area of the 1836 Treaty Territory for Michigan Tribes. Five of the 12 federally-recognized Indian tribes in Michigan are parties to the 1836 Treaty of Washington. This reserves off-reservation hunting and fishing rights throughout the ceded territory, which comprises approximately 40 percent of present-day Michigan. The Straits of Mackinac are located in the center of that ceded territory.
- **Environmental impact statement.** A full environmental impact statement to assess all potential impacts of the project is not being conducted by the Michigan Department of Environment, Great Lakes, and Energy.

These are just a few of the many concerns the Watershed Council has with the current permit applications before the State of Michigan. We will provide an update in our next newsletter on the status of these permit applications. Stay tuned.

For more information, please contact our policy director, Jennifer McKay, at (231) 347-1181.





Aquavist ('ä-kw-vist) noun: A member of Tip of the Mitt Watershed Council's Local Activist Network; from Aqua - water, and Activist - one who seeks change through action.

Formation of the Crooked River Club

In 2017 and 2018, the Watershed Council updated an aquatic plant survey for the Crooked River, which connects Crooked Lake with Burt Lake. This work was paid for by local governments surrounding the river including Emmet County; the townships of Bear Creek, Little Traverse, Littlefield, and Springvale; and the Village of Alanson. The result of the survey revealed the growth of two invasive species: Eurasian watermilfoil and curly-leaf pondweed.

The Watershed Council organized a meeting with representatives from those local governments, in addition to representatives from Burt Lake Preservation Association (BLPA), Pickerel-Crooked Lakes Association (PCLA), and the Little Traverse Bay Bands of Odawa Indians. Subsequent meetings were held to discuss ways to treat the invasive species. A representative from the Charlevoix, Antrim, Kalkaska, and Emmet Cooperative Invasive Species Management Area (CAKE CISMA) also joined us and offered a cost-share program to help address the unwanted growth.

The group considered using diver assisted suction harvesting (DASH), a non-chemical treatment method where divers remove the plants through suction, which can extract the roots. Unfortunately, although this was the preferred method for most, it was extremely cost-prohibitive. At that time, only one company did DASH work in the state and they were very much in demand. Because of this, chemical treatment was done in 2019, with half of the cost paid for by the local governments, BLPA, and PCLA. CAKE CISMA generously paid the other half using a cost-share agreement.

We are now working to form a group dedicated to protecting the river for the long-term. Five meetings were held with members to get them organized, and they are now working on their own as the Crooked River Club. Volunteers are acting as temporary board members to help write bylaws and develop the organizational structure. Early next year we hope to hold elections for a permanent board. If you are interested in helping, please contact Watershed Policy Director Grenetta Thomassey at (231) 347-1181 for more details.

Native Plants Protect Lakes, Rivers, and Streams

If you know the Watershed Council, you know we love rain gardens. Not only are rain gardens bursting with color from native plants beautiful, they're also functional. They protect our waterways by filtering stormwater runoff, which can carry harmful pollutants, before they reach rivers and streams. The rain gardens the Watershed Council has helped install through our Project Rain Garden program prevent stormwater runoff from entering the Little Traverse Bay.

So, when looking for a subject to cover for our Annual Meeting, rain gardens and our Watershed Protection Director Jen Buchanan's efforts to promote them were a natural fit. In our new rain garden video, Buchanan shows off the Petoskey Greenway rain garden, explaining how it works to protect the waters you love. Watching it, you can learn to identify some of the native plants that inhabit it, and get ideas for a rain garden on your own property. Along the way, you can meet a few Petoskey residents and learn what they love about their own rain gardens. Be sure to check it out at our YouTube channel: <http://bit.ly/WCraingarden>.



Residents of Boyne City, Charlevoix, and East Jordan have the opportunity to weigh in on opportunities to integrate green stormwater infrastructure (GSI) projects in the Lake Charlevoix area with existing gray stormwater infrastructure. Gray stormwater infrastructure relies on pipes, ditches, and pumps, whereas GSI strives to mimic the natural water cycle as a means to manage stormwater. Combining GSI with gray infrastructure can enhance stormwater treatment, and keep freshwater clean. The Watershed Council is inviting members of these three communities to take part in a survey about their preferences for proposed GSI projects. Feedback will be shared with local government officials, which will ultimately help guide future water quality protection efforts for the benefit of Lake Charlevoix. Visit <https://bit.ly/33bm82d> and make your voice heard! **The survey is open through Dec. 4, 2020.**

Cheboygan: A Tale of Too Much Water

Looking at the two-story high earthen dam on the Little Black River, Watershed Council Monitoring Programs Coordinator Caroline Keson hadn't seen anything like it. "Why are there so many dams on the Little Black River?" she asked her tour guide, Cameron Cavitt, the Cheboygan County Drain Commissioner. "The city used to flood after a big rain or when the snow melted in the spring," he replied. "There would be so much water you could canoe downtown."

Hiking up the grassed-over dam, Keson thought about the dilapidated culverts, flooded areas, and thick algae she'd seen that day around the City of Cheboygan. Balancing a need for flood control with ideas about fish habitat and water quality would be no easy task.

The Watershed Council has been learning about the City of Cheboygan's stormwater challenges. Stormwater is water from rain or snowmelt that picks up pollutants from roads, driveways, lawns, farms, and more. Pathways for stormwater in cities and towns are often underground pipes that flow towards local waterways.

Most cities in Northern Michigan have separate pathways for stormwater and wastewater, including Cheboygan. However, the wastewater treatment plant is overburdened with large amounts of water during storm events, leading city staff to want to investigate further. Engineering firm Hubbell, Roth, & Clark, LLC, is investigating multiple contributors, including old piping material that may let water soak through, illegal sump pump connections, and old, forgotten connections to stormwater pathways.

The Watershed Council is collecting water quality data in Cheboygan and engaging the public on green stormwater infrastructure, a method to slow water down and keep it out of traditional stormwater infrastructure, including stormwater sewer systems. Our project intends to show how green infrastructure can be a viable option for Cheboygan's needs. To date, we have conducted three workshops aimed at increasing awareness of green stormwater infrastructure.

At the first workshop, experts shared benefits and tools along with case studies that could be applied to Cheboygan. The "treatment train" approach was highlighted, where multiple techniques are used, sometimes from both conventional practices and green stormwater infrastructure. For example, a community on Lake Huron in Michigan's Thumb region combined the two types of technologies by adding permeable pavers to streets and turning a sheet-piling lined ditch (similar to the Butler Ditch in Cheboygan) into a rocky beach outfall with hidden water storage. The second workshop focused on mapping areas appropriate for green stormwater infrastructure and was led by Huron Pines, who is also leading similar sessions in other Lake Huron coastal cities. The third workshop had residents complete a do-it-yourself rain barrel construction kit.

The Watershed Council will continue to monitor water quality to identify areas where green stormwater infrastructure could help protect Lake Huron and the Cheboygan River. The last component of the project will be a hands-on demonstration project and a "roadmap" for the city with next steps.

The city sits at the end of the Cheboygan River, which drains 900,000 acres. In addition to the large amount of water heading into Lake Huron, Great Lakes water levels have been rising, and Cheboygan is right in the middle of these two unstoppable bodies of water. While it seems like an impossible task, these first steps show that the Watershed Council and its partners are up for the climb.

In addition to improvements in the watershed of the Galbraith Drain, the outlet was changed to be more natural and allow for filtration before entering Cheboygan. It's almost invisible now!



The Galbraith Drain takes water from the Forrest Manor subdivision near Port Huron to Lake Huron. The steel sheet piling is similar to the Butler Drain in Cheboygan.



Michigan's New PFAS Drinking Water Standards among Nation's Strictest

PFAS (per- and poly-fluoroalkyl substances) are a large, complex, and ever-expanding group of manufactured chemicals widely used to make products like nonstick cookware, food packaging, stain-resistant carpet treatments, firefighting foam, and more. There are multiple potential health risks from exposure to PFAS chemicals, such as higher risk of certain cancers and impacts on the immune system.

Michigan's new statewide PFAS maximum contaminant levels (MCL) took effect in September, and they are currently among the most comprehensive and strict standards in the country in limiting the amount of PFAS in drinking water.

The regulations cover drinking water maximum contaminant levels for seven PFAS.

Specific PFAS	Drinking Water MLC Parts per Trillion (ppt)
PFNA	6 ppt
PFOA	8 ppt
PFHxA	400,000 ppt
PFOS	16 ppt
PFHxS	51 ppt
PFBS	420 ppt
HFPO-DA (Gen-X)	370 ppt

The standards apply to approximately 2,700 public drinking water supplies across the state and will be enforced by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). However, if you get your water from a household well, state drinking water standards do not apply. If you have questions about PFAS in your well water or would like to get your well tested, you can contact EGLE's Environmental Assistance Center at 800-662-9278. Representatives may be reached to assist with your questions Monday – Friday, 8:00 AM to 4:30 PM.

When the amount of Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) in well water exceeds the US Environmental Protection Agency lifetime health advisory level of 70 ppt, the Michigan Department of Health and Human Services (MDHHS) advises using bottled water or water filtered by a system certified to reduce the amount of PFOA and PFOS. This bottled or filtered water should be used for drinking, cooking, making baby formula or food, washing fruits or vegetables, or brushing your teeth. Touching the water that contains these PFAS is not deemed harmful. You can bathe, wash dishes, launder your clothes, and clean with your well water.

The new drinking water standards also update Michigan's existing groundwater clean-up criteria of 70 ppt for PFOS and PFOA.

The new groundwater standard is 8 ppt for PFOA and 16 ppt for PFOS.

As a result of the new standards, new sites are being added to MPART's (Michigan PFAS Action Response Team) portfolio of ongoing PFAS investigations, the majority of which are landfills or manufacturing facilities already subject to state investigations for other forms of contamination.

To learn more about PFAS, visit the MPART website: www.Michigan.gov/PFASResponse or Tip of the Mitt Watershed Council PFAS webpage: www.watershedcouncil.org/pfas.

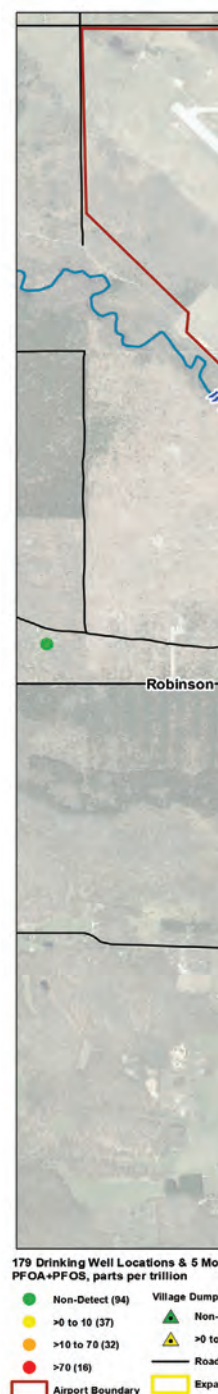
Pellston PFAS Update

As stated in a past newsletter, PFAS had been detected above the state drinking water criteria in residential samples south of the Pellston Regional Airport.

As of March 2020, 179 residential/private wells have been sampled. Of those, 94 came back non-detect for PFAS, 60 wells came back below the U.S. EPA's Lifetime Health Advisory Level of 70 ppt for PFOS and PFOA, and 16 wells came back greater than 70 ppt. Locations where at least one PFAS was detected in a private well have received water vouchers until water filters could be installed. If you have a private drinking water well and MDHHS or your health department has contacted you recommending use of a filtration system, one will be provided to you at no cost. One extra set of cartridges will also be provided to you at no cost. To date, 64 filters have been installed and replacement cartridges have been provided.

Due to initial sampling results, the residential testing area has been expanded to the south to include former Lake Kathleen and portions west and south of the West Branch Maple River. Please see the map.

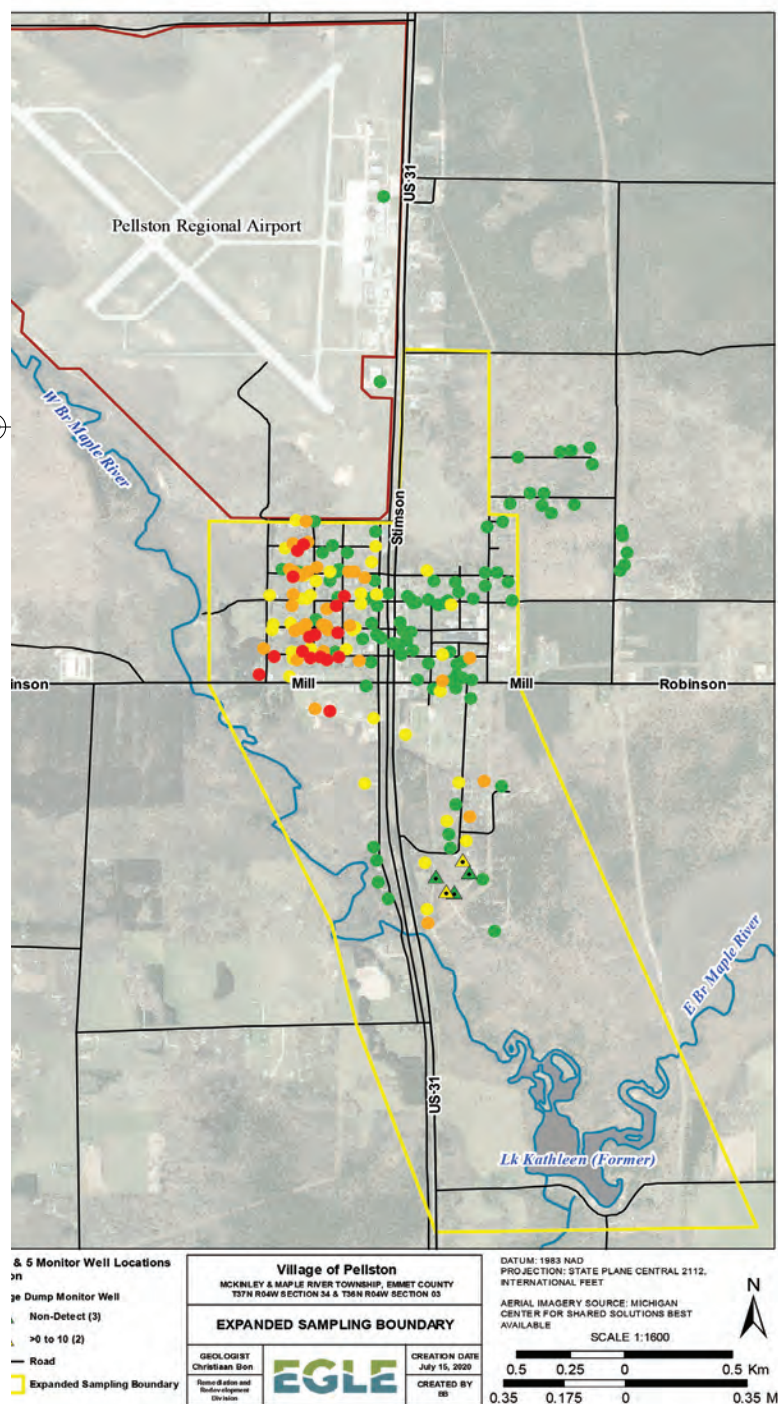
If you live within the sampling area and have not had access to the form, download the EGLE/Health Department of NW Michigan PFAS Sampling Request Form. You can access the form on the MPART website <https://www.michigan.gov/PFASResponse>, click on "Investigations" and "Emmet County, Village of Pellston, Pellston Area." You must download the form to your computer before filling it out, or you may print it out and send a photo.



Return the form by email to MacDonald1@Michigan.gov or mail to:

Gaylord EGLE Office
Attn: Leah MacDonald
2100 West M-32
Gaylord, MI 49735

A Public Health Information Line (PHIL) has also been established to address any community health concerns throughout the response: 1-800-386-5959.



Engineering Alternatives on the Bear River

The Watershed Council has concluded our Lake Street Dam engineering alternatives study for the Bear River. The purpose of the study was to explore future engineering alternatives for the existing concrete structure in Petoskey. The dam is the lowermost barrier on the Bear River, the largest tributary to Little Traverse Bay. In its current state, it prevents native fish species that otherwise spend their lives in Lake Michigan and the Little Traverse Bay from accessing critical river habitat.

OHM Advisors completed the engineering portion of the study that considered impacts to the river and bay under the following scenarios: complete dam removal, partial dam removal, modification of the dam, and no action. Under the complete dam removal scenario, the structure would be completely removed. However, a new upstream barrier would likely be necessary to prevent passage of invasive sea lamprey. To meet this need, either a permanent or seasonal barrier could be constructed. Its location would depend upon habitat conditions.

Another scenario could include modifying the Lake Street structure by reducing its height to only 3 feet, as opposed to its approximate height of 6 feet, to allow for increased passage of some native fish species while still preventing the passage of sea lamprey. Lastly, a third scenario could include replacing the existing structure with a seasonally-adjustable barrier that would allow for native fish passage at certain times of the year, while blocking passage during sea lamprey spawning times.

The results of the study will provide the city with critical information that will help direct the management of the dam, while taking into account stream health, the Bear River and Little Traverse Bay fisheries, safety, cost, and recreational opportunities.

The study is made possible through a Great Lakes Fishery Trust grant awarded to the Watershed Council. Thank you to the following agencies and organizations for their contributions toward the project: Michigan Department of Natural Resources, Michigan Trout Unlimited, Miller-Van Winkle Trout Unlimited, the Little Traverse Bay Bands of Odawa Indians, the U.S. Fish and Wildlife Service, and the City of Petoskey.

For more information regarding the Lake Street Dam engineering alternatives study, visit <https://tinyurl.com/LakeStreetDamPetoskey>.



Monitoring Programs Coordinator Caroline Keson tests out a new drone for future use in shoreline surveys.



Summer Field Work

Before our busy summer fieldwork season began, Watershed Council staff were full of questions. Would the stay-at-home order lift and allow us to perform the monitoring you've come to rely on? Would we be able to have interns? Would our volunteers be able to collect data on lake and stream health? Luckily, the answers to those questions were yes. From measuring road/stream crossings to controlling the growth of invasive wetland plant species, we've had a busy summer working to keep Northern Michigan's waters healthy. The ability to see long-term trends in water quality data is important to our organization, and we're grateful to have been able to continue our valuable work despite the significant setbacks that affected everyone in our region and beyond.

Sheri Rhoades, from Friends of the Boyne River, helped out with some volunteer stream monitoring this summer.



Monitoring Programs Coordinator Caroline Keson spent some time on Larks Lake this summer, studying the aquatic plants that call the lake home and looking for invasive species that can cause problems for native plants.





Part of our work is ensuring that there is a healthy flow of water in places where roads cross streams. When a culvert is too narrow or perched above the stream flow, animals who live in the water can't cross beneath the road with ease. Our Watershed Protection Team was busy this summer measuring the culverts that run beneath road/stream crossings.

Our seasonal employees, Lizy Michaelson and Garrett Greer, spent many days kayaking the entirety of the Walloon Lake shoreline. The data they collected is being used to score shoreline health, which directly impacts water quality.



The Watershed Council's mobile boat washing station was a big success. The team took the station to multiple inland lakes this summer, washing boats and trailers, and educating boaters about the importance of Michigan regulations to prevent the spread of invasive species from lake to lake.

Purple loosestrife is an invasive plant species that loves wetlands and crowds out native plants and animals. Here you can see Monitoring Programs Coordinator Caroline Keson out with the Friends of the Boyne River and other volunteers working to control its growth in Boyne City's Riverside Park.



What Just Touched My Foot? More than Just Seaweed

Seaweed. It's stringy and slimy, gets in the way of our swimming and boating, and keeps our lakes healthy by adding oxygen and providing habitat for fish. But, it's not really "seaweed" since we aren't in the sea. Rather, many aquatic plants are commonly known as "pondweeds" and belong to a group of plants with the Latin name *Potamogeton*. In addition to the true pondweed group, there are many other types of aquatic vegetation. Some lakes in the Watershed Council's service area boast 42 different types of aquatic plants!

Plants (and algae that look like plants) can tell us about lake characteristics, fish habitat, culture, and even boating traffic. Vegetation surveys serve to identify plants, determine their abundance in a body of water, and pinpoint their locations.

This summer took the Watershed Council to Crooked-Pickerel and Larks Lakes in Emmet County for a survey of lake vegetation. We looked for two main things: plant density and invasive species. Sometimes humans can affect the amount of plants in a lake through nutrients that we add unintentionally, usually through leaky septic systems and fertilized lawns. By repeating a plant survey after a period of time, we can estimate if there are more or fewer plants and identify problem areas with nuisance plants.

One main goal when we conduct a plant survey is to determine if the plants in a lake are invasive or native. Some invasive species closely resemble native varieties of plants, and we have a couple of ways to survey them. The best way to see these plants up close is to pull them up from the bottom. We perform this task by using a rake head tied to a rope as a grappling hook.

During a plant survey on Larks Lake we found an abundance of low-growing bushy native pondweed, or naiad (*Najas sp.*), and fish hiding in tall branched patches of variable-leaf pondweed (*Potamogeton gramineus*). We were able to identify and coordinate treatment for a stand of *Phragmites* (*Phragmites australis subsp. australis*), an invasive reed that can crowd out native shoreline vegetation and block water views. We also stayed on the lookout for wild rice (*Zizania palustris* and *Zizania aquatica*), a sacred food for many Midwestern Tribes. *Zizania aquatica* is deemed a threatened species by the State of Michigan.

A few areas on Crooked Lake have received treatment for invasive curly-leaf pondweed (*Potamogeton crispus*), which has crinkled leaf edges, and Eurasian watermilfoil (*Myriophyllum spicatum*), a feathery and flexible plant that creates dense mats. Areas that were previously treated showed no Eurasian watermilfoil and only a few leaves of curly-leaf pondweed. While the surveys on Crooked and Pickerel Lakes are incomplete, so far these surveys show that invasive species treatments are working.

Our second tool for conducting the surveys is the Watershed Council's drone, which was purchased with funds from the Petoskey-Harbor Springs Area Community Foundation. The drone is able to create high-resolution aerial maps—much higher than Google Earth or any images created by satellites. Survey data using a grappling hook estimates plant density, while the drone will enable us to see where patches of plants begin and end. The result will be finely-tuned maps and estimates of plant whereabouts. This is especially important for invasive species, as accurate mapping can determine if they are getting out of hand or being managed correctly.

The Watershed Council is exploring the uses and limitations of the drone in a vegetation survey. It is expected that the drone will prove useful in shallow areas, places with vegetation emerging out of the water (like bulrushes), and in known invasive species patches. Lake clarity, weather, and water depth will limit the use of the drone in certain areas.



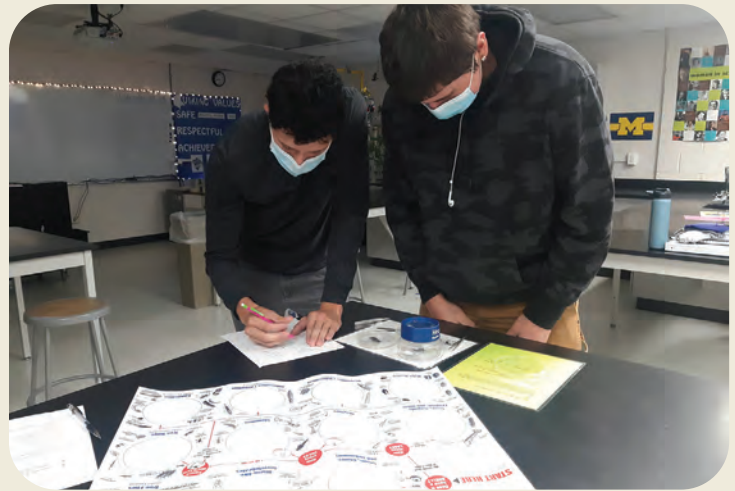
Outdoor Education: Now More Important than Ever

While COVID-19 may have changed many aspects of our lives, one thing that has not changed is our role in protecting the watersheds we live in and the bodies of water that we love. With students returning for the 2020-2021 school year, we are proud to bring water resources education experiences back to our future watershed stewards.

Environmental education programs like the Watershed Academy are now more important than ever. Not only do they allow students to learn outdoors while following safety guidelines, these programs encourage staying active and engaged with the natural world, which is so crucial during our time of social distancing.

When schools closed last spring due to the quarantine, many of the Watershed Council's education programs were cancelled. Those programs included the high school Watershed Academy, our middle school Water Resources Education Programs, the annual Students Experience Lake Charlevoix field trip, and water resources sessions with elementary students in our service area. We are working hard to update our programs to continue to foster an appreciation for water quality while following COVID-19 safety guidelines.

In order to safely work with teachers and students, Watershed Council staff are making sure to maintain social distancing and



wear masks at all times. In addition, we are using technology to bring our programs to students through videos and online presentations. For instance, when staff were unable to spend time with Watershed Academy students in person, we held a video conference on watershed conservation instead.

We are excited to continue our education programs this fall and are thankful for the teachers and students in our service area who are working with us to protect Northern Michigan's water resources!



Spotlight on New Board Member Ken Polakowski

Ken Polakowski and his wife Shirley have been members of the Watershed Council for 15 years, and we wanted to feature him because of his consistent commitment to the environment. However, we're happy to announce that Polakowski is now also part of our board of directors, where he'll bring his experiences in landscape architecture and passion for diversity and equal access to natural resources to our organization.

Ken Polakowski joined the University of Michigan as faculty at the School of Natural Resources (now the School for Environment and Sustainability) in 1968. You may recognize him as the landscape architecture professor who developed the master plan for Gallup Park in Ann Arbor after it was damaged by a heavy storm. He retired from U-M in 1998 and reported that, although he misses the students, he makes up for it with volunteer work in his chosen home, Charlevoix.

Polakowski and his wife ended up in Charlevoix as the result of a quest for the perfect vacation spot. "We had a very personal objective to find a place that was accessible to our friend that was confined to a wheelchair," said Polakowski. They found Charlevoix to be an accessible city and ended up settling there in 2000.

A desire to improve people's access to and enjoyment of nature has been a focus for Polakowski throughout his entire career. His efforts

to improve opportunities to enjoy nature were rewarded in 2019 with the formation of the Shade Tree and Parks Commission. So far, the city has committed to planting 100 trees per year.

Retirement didn't put a dent in Polakowski's interest in development with an eye towards ecology. One of the reasons he's been a member of the Watershed Council since 2005 was to support the protection of valuable natural resources. "I have a lot of friends who live on Lake Charlevoix who are part of the Lake Charlevoix Association and they rely on Tip of the Mitt to do monitoring for their organization," he noted. He's interested in collaborating with the Watershed Protection Team on development issues with properties, and potentially joining our Equity, Inclusion, and Justice Task Force.

"If you're a landscape architect you're always interested in projections for the future and impacts for private and public ownership," said Polakowski. "I taught a class at U-M called Ecological Bases for Land Use Planning, so I think I can bring the approach that land uses are changing, and when they do change, how can they relate to the future from an ecological perspective, not just an economic perspective?" He also observed that the Watershed Council's mission fits with his lifelong professional and personal commitments.

We're so glad that Ken Polakowski joined our board of directors, and we look forward to seeing him use his skills to protect our waters.



The Watershed Council hosted a rain barrel workshop to encourage Cheboygan residents to capture stormwater on their properties. Participants got to paint and take home their own rain barrels. We think they did a fantastic job!



Our socially-distanced Whale of a Sale was a success. Many thanks to the people who donated and bought boats to support our mission, and to Irish Boat Shop for once again hosting the event.

Welcome to
Tip of the Mitt Watershed Council's
41st Annual Meeting

July 23, 2020
10am – 12pm

Outgoing board President Claire Rasmussen led our first virtual Annual Meeting.

Tip of the Mitt Watershed Council



2020
SUMMER
EVENTS



For the Annual Meeting, Watershed Protection Director Jen Buchanan presented on the beauty and functionality of rain gardens in halting stormwater runoff. She even took members on a virtual tour of the Petoskey Greenway rain garden. Be sure to check out our rain garden video featuring Buchanan at our YouTube channel: <http://bit.ly/WCraingarden>.



Erin Davison submitted this photo for our Clean Waters Challenge. If you look closely you can see Monitoring Programs Coordinator Caroline Keson in with the bunch. Thanks for helping keep our waters healthy!



In response to the COVID-19 pandemic, the Watershed Council had to change tack with our summer events. Some events, like our Annual Meeting and Bear River Cleanup, took place in ways they never had before. This year marked our 41st Annual Meeting, but it was the first one to ever take place online. We were able to take care of Watershed Council business and offer a presentation on rain gardens. The Bear River Cleanup transformed into the Clean Waters Challenge, sponsored by Bearcub Outfitters, in which participants picked up trash in water bodies of their choosing and won prizes from Patagonia and Keen. When Watershed Council staff met up for a summer picnic, we practiced social distancing and wore masks. It was a thrill to see each other in person after months of communicating mostly through email and Zoom. We hope that you were able to safely stay in touch with family and friends despite the challenges we've all faced this year, and thanks for attending our webinars and other events as you've been able to.



During our Clean Waters Challenge, participants shared their finds on social media and won some great prizes for their help keeping Northern Michigan's waters clean. This photo of a family cleanup on the Maple River was submitted by Hope Roisen and taken by her sister Chrysianna. We're so glad they took part in our challenge!

Staff have mostly been working from home or in the field this summer, but we were able to gather together for a picnic on Crooked Lake to celebrate our successful work during this trying time.



Debbie Messer – A Devoted Board and Staff Member

By Executive Director Gail Gruenwald

When I arrived in Northern Michigan in 1984 to begin work at the Watershed Council, Debbie Messer and her husband John were among my first friends. They were early members of the Watershed Council, first joining in May 1984 and continuing for over 30 years. Debbie served on the board for six years starting in 1984 until 1989, and as president from 1994-1997. She truly cared about the Watershed Council and when an opportunity to join the staff emerged she took it and was on staff for three years until her health required her to retire.

Debbie was always a positive force for the Watershed Council and cared deeply about Northern Michigan's water resources. She and John were some of our first volunteer wetland stewards, agreeing to protect their wetland property for future generations.

Unfortunately for all of us, Debbie's health didn't allow her to continue her involvement with the Watershed Council to the extent that she would have liked. Debbie was, and will always continue to be, with us in spirit. We mourn her loss.

In her honor, John made a memorial gift. In addition to John, other friends of Debbie's have contributed to purchase a bench for our office garden. A plaque to honor her will be attached to the bench so others will know of her dedication to Northern Michigan's waters. You will be missed, Debbie!



Board President Jack Young presents Debbie with a certificate honoring her and John for voluntarily protecting wetlands on their property.

GIFT IDEAS

Share your Love of Water This Holiday Season

Since 1979, Tip of the Mitt Watershed Council has relied on contributions from our generous members to help us develop practical and sustainable solutions for protecting and restoring Northern Michigan's water resources. We hope you will consider us again this year when you make your contributions. Please keep in mind that as part of the rescue package Congress passed this past spring, you will be able to add a \$300 deduction for contributions in 2020 even if you don't itemize deductions.

There are other ways to contribute to our important work as well. If you are in a position to consider a planned gift or bequest, we would be happy to discuss this with you. Two other ways to give are special gifts to one of our endowment funds or through a matching gift program, if that is available to you. Also, the Watershed Council is part of the AmazonSmile program. If you shop at Amazon you can designate the Watershed Council as the nonprofit you wish to have Amazon contribute to. It is a small percentage but it adds up! Look up AmazonSmile in your web browser for instructions on how to sign up.

Finally, giving a gift membership to the Watershed Council is a wonderful way to show you care about both our water resources and the recipient. This unique gift idea will help protect our water resources and it will be enjoyed by your friends and loved ones throughout the whole year. For more information about gift memberships call (231) 347-1181, or visit our website at <https://www.watershedcouncil.org/donate.html>.

Thank you and Happy Holidays!

Welcome New Members

3/23/2020 - 10/2/2020

Jim and Christine Abbey
Mr. and Mrs. Paul D. Alandt
Mark and Louise Allen
Mr. Chip Allison
Dakota and Brit Averill
Mr. and Mrs. Thomas Baker
Glenn and Becky Behler
Mr. and Mrs. Craig Bell
Michel Berryer
David Bigos
Dr. Robert A. Bitterman
Black Lake Sportsmen's Club
Frank and Pauline Blanton
Ms. Bette Bos
Mr. Jeffrey S. Bowers
Linda Knibbs and Michael Brady
Jeri Lynn and Dan Braunlin
Laura Broenniman
Mr. and Mrs. Douglas R. Brown
Dr. Paul Caswell
Dr. and Mrs. Richard Chapin
Dr. and Mrs. David Chauvin
Kevin Christman
Mr. and Mrs. Michael Chranowski
Dr. and Mrs. David Cleary
Mr. Daniel J. Costello
Mr. and Mrs. Richard C Currey Sr.

Ms. Kathleen D. Curts
Mr. Eric J. David
Kay DeMoss
Tim and Marta Dennis
Dr. and Mrs. Arthur Denton
Jane M. Denton
Beulah Dole
John and Margaret Eckhold
Brady Farver
Dennis Ferraro
Mr. and Mrs. Wayne S. Fort
Mark and Kristen Freund
Jerome and Julie Galante
Heather M. Gates
Mr. and Mrs. Robert Gault
Katherine C. Gjaja
Christy Goebel
Ms. Carolyn Green
Jim and Cathy Gulau
Pam Gunkler
Randall and Kimberly Hack
Ms. Michelle LaForest Halloran
Mr. William Hamilton III
Mr. and Mrs. Stuart A. Hamilton III
Ms. Betty A. Hamilton
Mrs. Mary Lou Hazleton
Mr. and Mrs. Jerry Huey
Mr. Larry Janness

Ann Kassen
Dr. Rebie Kingston
Mrs. Donna J. Klose
Mr. and Mrs. David E. Korthase
Lt. Col and Mrs. Robert Kramer
Jamie Kranberg
Hans and Michelle Kronsbein
Dr. H. Robert LaBuda
Susan Brown Lardie
Mr. Richard Lee
Sally Lilak Virginia Collins-Llope
and Richard Llope
Johanna B. Lund
Mr. and Mrs. Walter A. Lynch
Susan G. Lyons
Connie L. MacKinnon
Terry and Pam Manning
Robert Marshall
Elizabeth J. Martin
Mr. and Mrs. Bruce R. McClure
Mr. Bill McCormick
Mrs. Karen P. McCraney
Mr. and Mrs. F. Phillip McKinley
Janet E. Merchant
Mr. James Mesterharm
Mr. and Mrs. John C. Miller Jr.
Mr. and Mrs. Frank H. Miller
Marianne Miller

Charles M. Moore
Nancy Moore
Mr. James Morris
Mr. and Mrs. Daniel Neumeyer
Dr. and Mrs. Hamlet Newsom
Mr. and Mrs. Michael A. Nigro
Mr. and Mrs. Paul A. Nordstrom
Dr. James G. O' Brien
Mr. Melvin Orchard
Mrs. Judith A. Oswald
Mr. and Mrs. Michael W. Pemberton
Mr. and Mrs. Craig Pilditch
Mr. and Mrs. Thomas C. Post
Ben Tumminello and
LaVaun H. Reyner
Ms. Kelle Rodrigues
Jeff and Annette Rowe
Randy and Kate Safford
Mr. and Mrs. Britton Sanford
Lewis Schlanbusch
Mrs. Judi Schneider
KC Schute
Mr. and Mrs. George Seifried
Scott and Jill Sellers
Jerry and Estella Smith
Mrs. Shirley W. Snare
Zoya Gleizer and Michael Stavrianos
Patricia Steffes

Mrs. Valerie Stork
Ronald Vargason and
Barbara Sugden
Mr. and Mrs. Robert M. Sullivan
Kyle Tanner
Dr. and Mrs. Kenneth Tewel
Lynne Tilma-Ross
Dr. Robert L. Trezise
Mr. and Mrs. Alan M. Valade
Dr. Eric Van der Schalie
Ken and MJ Van Der Wende
Mr. Chris Van Lonkhuyzen
Kevin and Renita Van Solkema
Mr. and Mrs. John G. Vine
Mr. and Mrs. Paul Voorheis
Robert S. Vor Broker
Mr. and Mrs. Douglas B. Warner
John and Yelena White
Dr. Raymond J. Winfield Jr.
Mr. and Mrs. Joseph Woods
John F. Wysokinski
Gregory and Diana Young
Mr. and Mrs. Thomas Youngblood
David and Linda Yudas
Mrs. Jean D. Zerges
Mr. and Mrs. Richard G. Zidjunas

Honorarium and Memorial Gifts

Wedding Wishes to Lisa Caveney and Eric Black, and the girls, Ellie and Nora

Reeny Caveney
Michelle and Ryan
Blentlinger
Mary T. McNaughton

In Honor Of:

Linda Heller
Rebecca Nadel
Jennifer McKay
Mike Tilchin

Ed Robinson for 15 Yrs of Service to
Horner Island Corporation

Getts/Dettmer Cottage
Llope Cottage
Korthase Cottage
Swift Cottage
Yund/Lezotte/Behler Cottage
Davis Cottage
Brown/Lardie Cottage
Marshall/Goebel Cottage
Gunkler Cottage

In Memory Of:

Pearl B. Norton
Bob and Sara Blessing
Richard Clapp
Dave and Joy Clapp
Pat Lowry
Petoskey Bay View Country Club
Patricia Steffes
Mr. and Mrs. Paul D. Alandt

Debbie Messer

Robin Moyer
Alison Paton
Doug Fuller and Martha Lancaster
John Messer

Thank You!

Noar Technologies, Macatawa Unmanned Systems, Jim Keiser, Alan Proctor, and Rob LaPoint—help with drone software

Connor Dennis—helping with the Walloon Lake shore survey

Jac Talcott—helping with the Walloon Lake shore survey

American Spoon—barrels used for rain barrel event

Pam and Dennis Roudi—lake access to Walloon

Barb Shelton—boat storage at Larks Lake

Simon Gelb—fixing the stormwater sampler and acid washing bottles and administrative assistance

Dudley Marvin—boat storage at Crooked Lake

Ray McMullen—providing invasive species hot spots on Crooked and Pickerel Lakes



Whale of a Sale

Although our in-person Whale of a Sale is over, you can still shop for boats and support the Watershed Council's vital work protecting Northern Michigan waters. Visit www.watershedcouncil.org/wos and sign up to see available boats. Perhaps someone on your holiday list would appreciate a gently used boat, and you would have the satisfaction of knowing that your gift is supporting the waters they love.

ICE BREAKER

WINTER SPEAKER SERIES

Save These Dates

JANUARY 13, 2021

Watersheds 101—How Do We
Protect the Waters We Love?

FEBRUARY 10, 2021

The Line 5 Straits Tunnel—
Will it Become a Reality?

MARCH 10, 2021

Using Social Indicator Surveys
to Protect Water

These free sessions will be hosted online.

Noon - 1 p.m.

Visit www.watershedcouncil.org/attend-an-event to register



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worth sharing.

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Stormwater Solutions at Norcross Family Preserve

The Watershed Council, in partnership with the Walloon Lake Association and Conservancy (WLAC), collaborated on solving an ongoing stormwater runoff issue at the Norcross Family Preserve in July. Our work will not only protect Walloon Lake from pollutants but will also showcase an example of green stormwater infrastructure (GSI). For several years, WLAC struggled with how to best control runoff that flowed from an adjoining property onto the preserve via a culvert that passes under M-75. After considering several options, the two organizations decided to install a rain garden-like solution that would direct runoff along a cobble-lined channel. This will allow stormwater to slow down, spread out, and soak into the ground. Native plants were planted along the way to help encourage infiltration and absorb nutrients from the runoff. Many thanks to WLAC for their partnership and stewardship of Walloon Lake. Funding for this project was provided by the Petoskey-Harbor Springs Area Community Foundation's Little Traverse Bay Protection and Restoration Fund.

