



SPRING 2022

# Reflections

**CURRENT**

A publication for the Great Lakes to inform and educate about the importance of protecting our lakes, streams, wetlands, and groundwater.

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## RAIN GARDENS

THE 'BEE'S KNEES' FOR POLLINATORS & CLEAN WATER

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## WELCOME ABOARD, EXECUTIVE DIRECTOR KATIE WOLF

• INTERVIEWED BY JENNIFER DEMOSS  
Watershed Council Communications Director •



The Watershed Council is excited to introduce our new executive director, Katie Wolf. For those of you who can't wait to meet her, attend one or more of our stellar summer events. Read on for some highlights about her deep connections to nature and Northern Michigan's water

### Q: What drew you to your position at the watershed council?

**WOLF:** It's the perfect job for me at this point in my career. My first job out of college was working on a federal nonpoint source pollution grant and developing a statewide citizen's water monitoring network. That work evolved into public policy and education outreach efforts that eventually brought me from Kentucky to Michigan with a focus on the Great Lakes. I've worked on Great Lakes protection and education efforts at all levels of government and for nonprofits, most recently at NOAA's Thunder Bay National Marine Sanctuary in Alpena, Mich.

Once I met the board and staff at the Watershed Council, I just knew in my heart that I needed to be a part of this dynamic team. The four-county area and beyond that the Watershed Council serves is incredibly fortunate to have such high-level professional science, technical, public policy, legal, and educational expertise readily available to help protect their freshwater resources.

### Q: Did you always know you wanted to work in conservation?

**WOLF:** My senior year of college I was awarded a Governor's Executive Internship and worked with some incredible people at the Kentucky Department for Environmental Protection. After that I was smitten and have spent most of my life working in the environmental field. I've also managed nonprofits for community education and development, and the humanities, but I've always been drawn back to protecting Michigan's spectacular waters.

### Q: What are some of the skills you've brought to the Watershed Council that make you a great fit for this position?

**WOLF:** I've had the opportunity to address water-related environmental issues on a global scale, Great Lakes regional level, and at the local level. I worked for an international consortium that studied the human dimensions of global change as a node for NASA's Earth Observation System and was part of the U.S. delegation to the first Earth Summit

held in Rio. I served as Michigan's coordinator for the World Conference on Large Lakes in partnership with its sister state, the Shiga Prefecture of Japan and coordinated public education and outreach efforts for the Great Lakes Resources and Planning Commission.

Collectively, my career experience has helped me develop a fairly comprehensive understanding of water-related issues, the stakeholders involved, and the diversity of funding sources available to assist local communities and regional networks. I look forward to using that experience, along with having managed several nonprofits that required strong communications, fundraising, and grant writing skills, to ensure the Watershed Council continues to build upon its impressive legacy. My husband also spent his career working to protect our ocean and Great Lakes and we have two great kids, one who is also pursuing a career in water sustainability.

### Q: Where does your deep appreciation of nature come from?

**WOLF:** As a child, I spent a lot of time with my father. He loved the outdoors—that's where he found his peace and inspiration. I'd beg him to take me with him when he was scouting before hunting season or fishing. While he was looking for tracks, I was searching for mushrooms, lichen, leaves, and roots, anything that grew.

### Q: What's been the most surprising thing you've learned about the Watershed Council?

**WOLF:** I've been surprised by the depth and breadth of watershed protection services we offer to communities and local bodies of government – very wide ranging and an incredible asset to the region.

### Q: What projects are you looking forward to working on?

**WOLF:** I get excited about everything so the challenge is setting priorities and making sure we're focusing on those efforts that address the greatest threats to our waters. Everything we're doing – from training students and volunteers how to monitor lakes and streams, to helping communities incorporate green infrastructure, protect their shorelines, and prevent water contamination from septic systems and stormwater runoff – it's all interconnected and ultimately helps protect the Great Lakes and their tributaries. Whenever possible, I want to make sure we are engaged at the front end, helping communities, homeowners, and contractors adopt best practices from the start, and avoid environmental degradation, remediation, and lawsuits.

### Q: What's something that our readers might not know about you from our website or press?

**WOLF:** I'm a passionate master gardener. I do my best thinking and problem solving in my garden. I enjoy every aspect of water recreation and also relish being in the woods. I find that a good walk in the forest can elevate your mental space.

Thanks so much for joining us at the Watershed Council, Katie Wolf! We're excited to see how you tackle the challenges of protecting Northern Michigan's most precious resource.

## REFLECTIONS FROM OUR ASSOCIATE DIRECTOR

• BY JEN BUCHANAN,  
Watershed Council Water Protections Team Director •

It was a bitterly cold Friday morning, and staff scurried about the office taking care of the few remaining details before our guest arrived. Eli arranged donuts and pastries on a plate, Molly brewed the coffee, Caroline wiped out the sinks and put away the dishes, and I monitored the empty parking spot next to the office to be sure nobody pulled into the space reserved for our special guest. I, ever the sap, got a bit emotional as I thought of how all of the staff, many of whom I consider dear friends, have helped to build the Watershed Council into the organization it is today. Whoever was moments away from pulling into that parking spot was very likely going to be the Watershed Council's next executive director, only the second one in nearly 40 years. Gulp.

Arriving on time, our guest was warm, cheerful, and engaging. She met each staff member for an informal chat, pausing at each office. Conversation flowed comfortably. Little by little, the nerves

## FAREWELL TO DEVOTED WATERSHED COUNCIL SUPPORTER, TUCKER HARRIS



PHOTO COURTESY OF BILL HARRIS.

Tucker Harris and her husband of 57 years, Jack, became members of the Watershed Council in May 1983. Tucker was an avid outdoorsperson who loved hiking and birding, as well as a dedicated social worker and talented artist. She was a staunch supporter of Burt Lake and the surrounding waters, serving on the Burt Lake Preservation Association Board of Directors. Her commitment to preserving

our lakes, rivers, wetlands, and forests was celebrated in Northern Michigan and beyond.

Her last gift to the Watershed Council was in honor of former Executive Director Gail Gruenwald's retirement in 2021. She attended Gruenwald's retirement party in mid-September; sadly, it was the last time Watershed Council staff would get to spend time with her. Her generosity and dedication to Northern Michigan's waters were apparent even at her service, when she asked that donations be sent to our organization in lieu of flowers.

We will miss Tucker Harris, and we're forever grateful for her support. Her time, talents, and generosity leave her beloved Burt Lake and the waters of Northern Michigan better off for future generations.

wore off, and we all began to believe that our guest has what it takes to lead our small but mighty staff.

In the weeks and months ahead, we look forward to finding a "new groove" with our new executive director, Katie Wolf, and introducing all of you to her. Have no doubt, we will carry on as the vital and effective organization that you have come to trust and rely upon to protect Northern Michigan's water resources. Of course, there will be some changes, but change is good, and we are eager to embark on this new chapter while staying 100% true to our mission. Stay tuned and, as always, please feel free to reach out if you have any questions or concerns. With gratitude, Jen B.



Associate Director Jen Buchanan took charge of the Watershed Council while we waited for our new executive director to arrive.

## WELCOME NOAH JANSEN

Please give a warm welcome to Noah Jansen, our new restoration coordinator! Jansen is joining us from the Little Traverse Bay Bands of Odawa Indians, where he worked as a conservationist with a focus on invasive species and forest management. He'll be working on watershed protection and restoration projects, including nature-based ways to manage stormwater, improving road/stream crossings to reduce erosion, shoreline restoration and erosion protection, and providing guidance on aquatic invasive species. We're excited to see him put his bachelor's degree in environmental science from Calvin College, master's degree in forest ecology from the University of Florida, and years of experience to work while protecting our waters.



Jansen grew up in Grand Rapids and he and his family—his wife and two sons—moved to our area from Elmodel, Georgia, in 2014 to be closer to home. He was cross-country skiing the day he got the call to be interviewed for this piece, and he also enjoys running, walks in the wood, and gardening.

What's his favorite thing about the Watershed Council? "I would say that's probably the collaborative nature of the job," said Jansen. "We work with a lot of different organizations, which is important for conservation and watershed protection."

We're so grateful to add a new member to our team. We'll keep you updated on his progress protecting our watersheds!

## INTERNS MAKE THE WATERSHED COUNCIL GO 'ROUND.

Interns are involved in most aspects of our prolific summer programs. They survey shorelines, monitor streams, help with permit applications, organize events, aid in our education programs, help control aquatic invasive species, and so much more. This summer, we'll have five interns, along with a seasonal employee for our mobile boat washing station. You'll get to know them more in the coming months, but here's a quick introduction to the folks who'll be working hard this summer to protect our waters while learning valuable skills.

*Eli Baker and intern Evan Joneson identify aquatic plants as part of Joneson's training.*



## YOU MADE FUNDRAISING FOR OUR INTERNS A SUCCESS

Where would we be without interns? They practically make our summer programs possible, with hours and hours of monitoring, invasive species mitigation, and so much more. In return, they get the training and experience they need to further their chosen careers while living in paradise.

Providing affordable housing and other living expenses is a challenge for nonprofits. Fortunately, this year the Watershed Council is able to tap into the Maura Brandi MSU Internship Fund managed by the Charlevoix County Community Foundation to help support five outstanding interns this summer. In addition to a bi-weekly paycheck, interns are offered room and board at the University of Michigan Biological Station and have the opportunity to take classes there as well.

With generous donor contributions to the Internship Fund, the Watershed Council is building its internship program with the goal of making it the best college-level summer learning experience in the Midwest. Each internship costs the Watershed Council approximately \$6,000 for 14 weeks, but we believe it is one of the best investments we can make, both for fostering future environmental scientists, and for protecting our area lakes and streams.

If you'd like to join 183 other generous members in funding our interns, visit [www.watershedcouncil.org/donate](http://www.watershedcouncil.org/donate). Click on Tribute Gifts and type "internship fund" into the Tribute Name field. Or, send a check to the Watershed Council at 426 Bay Street, Petoskey, MI, 49770. Make sure to write "internship fund" on the memo line. Thanks for supporting the incredible students who work with us each summer!



**KORY ALANIZ**

Kory Alaniz has been volunteering with the Watershed Council since 2021, and we're happy to announce he'll be taking the lead with our mobile boat washing station this summer as an aquatic invasive species seasonal staff member. Alaniz is an avid hiker and camper who loves exploring the wilderness. He's also a Trout Unlimited volunteer and angler. Look for him at your lake this summer—he'll be happy to help you learn more about invasive species and clean them from your boat.



**LOGAN BANNING**

Logan Banning is an environmental science major at Oakland University in Rochester, Michigan. Banning will be joining our Watershed Protection Team this summer. He's got experience with invasive species as a field technician with the Phragmites Adaptive Management Framework (PAMF) in Oakland and as a volunteer cleaning invasive species out of parks. As an avid apiarist, gardener, hunter, and angler, Banning has a great love for the outdoors. Please welcome him to the Watershed Council.



**SOPHIE GOODNOUGH**

Sophie Goodnough is a familiar face around the Watershed Council. Goodnough was a Watershed Protection Team intern in 2021, and she'll be returning to the team again this year. She'll be entering her senior year at Western Michigan University this fall as a freshwater science and sustainability major. She was a rock star with our shoreline survey and monitoring programs last year, and this year she's looking to boost her data analysis and mapping skills.



**EVAN JONESON**

Evan Joneson is also returning to the Watershed Protection Team as a 2022 Community and Lakes Environmental Awareness and Research Fund Fellow at the University of Michigan Biological Station. Joneson will graduate from the University of Michigan with a bachelor's degree in environmental science after the summer semester. When he's not working at the Watershed Council, he'll be conducting research related to freshwater ecosystems—one of our favorite subjects.



**ANNA McGLASHEN**

Anna McGlashen is a first-year Master's student at the University of Michigan School for Environment and Sustainability studying the intersection of science and law, with a particular emphasis on water policy. Her professional background includes developing policy and outreach programs and reviewing permit applications at the New York State Department of Environmental Conservation. We're so excited to have her join our team as a policy intern this summer.



**ALBERTO DELLA TORRE**

Alberto Della Torre is a rising senior at the University of Michigan pursuing a double major in international studies and environmental studies. He applied to intern with our Policy Team this summer because he's passionate about creating sustainable communities and protecting Michigan's natural resources. During the school year, you can find him biking, walking, climbing, and hammocking around Ann Arbor. We're looking forward to working with him this summer.



*2021 interns Sophie Goodnough and Evan Joneson spent last summer collecting a mountain of data for our watershed protection efforts.*

# RAIN GARDENS

THE 'BEE'S KNEES' FOR POLLINATORS & CLEAN WATER

## NEW YEAR, NEW RAIN GARDENS. PLUS, TIPS FOR INSTALLING YOUR OWN GARDEN THIS SPRING

**R**ain gardens: You know the Watershed Council is a huge fan of them. By using native flowering plants that grow deep roots, rain gardens attract important pollinators that are vital for food production, and prevent stormwater pollution from entering our lakes, rivers, streams, and wetlands. As stormwater crosses parking lots or drips from roofs, it collects materials like oil, fertilizers, sediments, and other debris. Rain gardens with deep-rooted native plants help stormwater seep into the ground and filter out pollutants before they can reach our waterways. They're a tool that citizens, business owners, and local governments can use to protect Northern Michigan's water while providing habitat for butterflies and other pollinators.

The Watershed Council, along with several funders, have supported the construction of successful rain gardens in Charlevoix, Cheboygan, and Emmet Counties. We're excited to announce that, with generous support from the Petoskey Harbor Springs Area Community Foundation and the Baiardi Family Foundation, we'll

be coordinating the planting of two rain gardens in Harbor Springs this year. We'll have more details on the locations of these future plantings and accompanying workshops available in the coming months, so keep an eye on our website and social media for more details.

Associate Director Jen Buchanan has taken the lead in championing Northern Michigan rain gardens. Her first rain garden with the Watershed Council was planted at the Charlevoix Public Library with community help in 2007. She has since worked on several rain gardens, including residential gardens funded through our successful Project Rain Garden.

Now, Buchanan has more support for rain garden projects—Restoration Coordinator Noah Jansen. Jansen is a new member of the Watershed Council community. You can read more about him on page three of this publication. He's been out in the field visiting potential rain garden sites in Harbor Springs is excited about all the possibilities.

Jansen encourages homeowners to think about how rain gardens can fit into their own landscaping practices, and he offered some tips for those interested in getting one started this spring.

"The first step is to figure out the best spot on your property for the garden," said Jansen. Homeowners need to look at where the water flows and collects in their yards. The garden doesn't have to be an existing depression since one can be dug into the landscape.

Wherever the spot, it needs to be at least ten feet away from the house foundation. Avoid septic systems, drainfields, and tree roots.

Size is another consideration. Jansen suggest calculating the square footage of the roof and other impervious surfaces on the property. The area of the rain garden should equal about 10% to 30% of the surface area draining into it. You might not be able to capture all the stormwater on your property, and that's ok. Just make sure that water flowing out of the garden has somewhere to go besides a building foundation.

What about plants? Native plants with deep roots are the best choices for rain gardens. Plants that love to have their roots wet, such as blue vervain and Joe-Pye weed, belong in the lowest point of the rain garden. Plants that prefer drier conditions will be more appropriate for rain garden edges. Remember, water shouldn't stand in the rain garden, so plants that live in shallow pools won't perform well in one. A brief guide to native Michigan plants is available at [www.watershedcouncil.org/native-plants](http://www.watershedcouncil.org/native-plants).

There's a wealth of easy-to-follow instructions about rain gardens in our publication, "Plant a Rain Garden: A How-To Guide for Homeowners." You can find it at [www.watershedcouncil.org/rain-gardens](http://www.watershedcouncil.org/rain-gardens). There are tips for testing soil for water infiltration rates, checking for underground utility lines, construction, maintenance, and more in the guide.

We look forward to sharing more about our upcoming Harbor Springs rain gardens, and hearing more about the rain gardens you plant this spring. Happy gardening!



Rain gardens in Charlevoix, Cheboygan, and Emmet Counties prevent stormwater pollutants captured within the gardens from reaching lakes, rivers, and streams.

## STREAM MONITORING UPDATE: THANKS TO OUR LONG-TERM VOLUNTEERS!

Our service area includes over 2,500 miles of rivers and streams. How do we ensure protection on those stream miles? We rely on volunteers, trained by us through our Volunteer Stream Monitoring Program and Watershed Academy. These programs are part of a network of volunteer monitoring programs throughout Michigan called Michigan Clean Water Corps (MiCorps). Since 2005, 1,300 volunteers and students have helped us monitor 34 streams throughout Northern Michigan. Check out how streams fared this year!

### TOTAL NUMBER OF PEOPLE IN VOLUNTEER STREAM AND WATERSHED ACADEMY PROGRAM (ALL TIME):

# 1,300

### TOTAL IN 2021

# 62

### NUMBER OF STREAMS

# 22

### TOTAL NEW MONITORS IN 2021

# 20

### NUMBER OF SITES

# 22

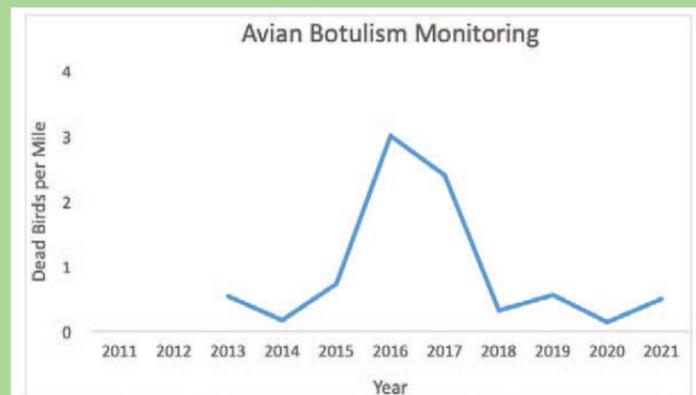
## AVIAN BOTULISM DEATHS REMAIN LOW

## DATA, DATA, DATA

What does the Watershed Council do with this data? Currently, it's housed on our website and used by a variety of resource agencies. The Watershed Council uses data to understand nonpoint-source pollution on a watershed scale, and serves as the foundation of many of our implementation projects. The Michigan Department of Natural Resources reviews lake monitoring data when assessing fish populations and management strategies for lakes. The Michigan Department of Environment, Energy, and Great Lakes compares our lake and stream data to algae bloom sites.

MiCorps has a database that is undergoing reconstruction. Since the Watershed Council volunteer programs are a part of the state's programs, we will be working with them to enhance database functionality and enter our data.

We are also working with The Downstream Project and Chesapeake Commons to share our data in a new user-friendly format called Water Reporter. Water Reporter is a social network that houses and displays data collected by resource agencies, volunteers, and citizens. The new system will allow us to easily share data across different databases and be available to individual users. We will work with volunteers to test out electronic data entry and encourage members to share their observations in our new online community this year. Be on the lookout for how you can get involved!



## A NUMBER OF OUR VOLUNTEERS HAVE SHOWN SIGNIFICANT COMMITMENT TO STREAM MONITORING AND PROTECTION. LET'S RECOGNIZE THEM!

# 15+

YEARS

Nancy Cunningham  
Doug Fuller  
Kathy Germain  
Darrell Schwalm  
Roy Tassava  
Beth Varty

# 10+

YEARS

Darlene Boatin  
Herm Boatin  
Janie Guiliani  
Steve Reh  
Marie Sheets  
Karie Slavik  
Ed Strzelinski  
Diane Strzelinski  
Jerry Swift  
Joe Jarecki  
Judi Jarecki

# 5+

YEARS

Richard Jenkins  
Bob Haack  
Sheridan Haack  
John Kafer  
Adam Kennedy  
Sheri Rhoads  
Rick Brandi  
Jim King  
Sally Wagle  
Jack Marlette  
Nils Lindwall  
Jack Lindwall  
Jerry Swift

## TOTAL 2021 VOLUNTEERS: 6

# MILES WALKED: 56.2

# BIRDS FOUND: 28

# BIRDS NECROPSIED: 1

Avian botulism deaths have remained low since a dramatic decline in 2018. Scientists think this is related to a variety of factors, including Great Lakes water levels and water temperature.

## STREAM

GRADE

A

Black River  
Maple River  
Pigeon River  
Jordan River  
Milligan Creek  
Shanty Creet

GRADE

B

Cable's Creek  
Boyne River  
Eastport Creek  
Russian Creek  
Mill Creek  
Minnehaha Creek  
Five Mile Creek

GRADE

C

Bissell Creek  
Horton Creek  
Bessey Creek  
Mullett Creek  
Oden Creek  
Stover Creek  
Schoof's Creek

GRADE

D

Birney Creek

# OLIGOTROPHIC LAKES RULE THE DAY

TOTAL 2021 MONITORS

66

TOTAL NEW MONITORS 2021

25

# LAKES

27

# SITES

33

# OF MONITORING EVENTS

380

The majority of lakes monitored in the Watershed Council's program were oligotrophic in 2021, meaning they were relatively clear compared to high productivity eutrophic lakes. Oligotrophic lakes are characteristic of glacial geology and point to some success in controlling excess nutrients from outside sources like fertilizers and leaky septic systems. A few lakes were mesotrophic and still have high water quality while providing extra habitat for certain fish species like walleye.

# TROPHIC INDEX STATUS

**TROPIC STATE INDEX (TSI)** is a way to classify lakes using Secchi disk, chlorophyll-a, and total phosphorus measurements. Nutrient availability, water volume, and the rate at which water is added to or lost from a lake are just a few of the factors determining some of this productivity. TSI values range from 0 to 100. Higher TSI values mean a lake has more biological productivity. Lower TSI values mean a lake has less biological productivity. Note: TSI scores are averaged for the season using all available data (Secchi disk, chlorophyll-a, and total phosphorus).

CLEAR/LOW LEVEL OF NUTRIENTS  
**OLIGOTROPHIC**  
TSI-38-0

**MESOTROPHIC**  
TSI-44-38

CLOUDY/ABUNDANCE OF NUTRIENTS  
**EUTROPHIC**  
TSI-100-44



## LAKES

- Larks
- Paradise
- Wheeler
- Clam
- Lake Charlevoix, South Arm
- Pickerel
- Bellaire
- Walloon, North
- Mullett, Pigeon Bay
- Long
- Walloon, Wildwood
- Douglas (Otsego)
- Walloon, Foot
- Crooked
- Burt
- Louise
- Intermediate
- Lake Charlevoix, Main West
- Walloon, West
- Douglas (Cheboygan)
- Twin
- Black
- Mullett, Mullett Creek
- Walloon, Mud
- Skegemog
- Elk
- Birch
- Torch South
- Torch North

- Six Mile
- Thayer
- Deer
- Nowland

- Beals

**Interested in volunteering with us? Check out the water bodies below that need monitoring. Our training events are listed on the back cover.**

\*avian botulism monitoring only

### EMMETT COUNTY

- French Farm Lake
- Goodhart to Cross Village beaches\*

### CHARLEVOIX COUNTY

- Deer Lake
- Huffman Lake
- Marion Lake
- Susan Lake
- Charlevoix to Bay Harbor\*

### CHEBOYGAN COUNTY

- Munro Lake
- Lancaster Lake
- Little Black River
- Laperell Creek
- Silver Lake
- Wildwood Lake

### ANTRIM COUNTY

- Bass Lake
- Eastport Creek
- Ellsworth
- Hanley Lake
- Scotts Lake
- Six Mile Lake
- Spencer Creek
- Wilkinson Creek



Rain barrels collect stormwater from your roof for later use on your lawn and garden. Our 55 gallon rain barrels are now on sale!

**Member price:** \$70 + shipping  
**Non-member price:** \$75 + shipping

[www.watershedcouncil.org/rain-barrels](http://www.watershedcouncil.org/rain-barrels)  
(231) 347-1181





*Waldron fen in Emmet County is a biodiverse area with ample opportunities for bird watching. Fens can be mineral rich from ground and surface water even as they grow mosses and other plants that prefer acidic environments. This Little Traverse Conservancy property has a hiking trail for those who want to see unique fen plant life.*

## WHAT ABOUT THE WETLANDS?

The Watershed Council has been getting a number of calls lately asking this very question. There is increasing awareness about regulations in place to protect shorelines, but oftentimes, property owners do not realize that their property contains wetlands or that they could be subject to protections under federal, state, and local law.

So, what about the wetlands? How do they contribute to our communities, and why are they protected?

Wetlands are some of our most valuable resources. They are places of beauty that contribute greatly to the overall health of our environment and our quality of life. They provide ecological and economic benefits that become increasingly important as we continue to lose them. Healthy wetlands protect water quality. They retain or remove nutrients and pollutants, acting as “nature’s kidneys.” Wetlands are also “nature’s nurseries,” providing vital habitat to fish, wildlife, and waterfowl. Wetlands control flooding by acting as a sponge. They decrease flood peaks and safeguard

downstream property owners. They temporarily store flood waters and replenish ground water supplies. In their natural condition, wetlands associated with rivers and lakes function as a barrier to erosion.

A permit from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) is required for activities impacting wetlands if the wetland is greater than five acres and/or within 500 feet of an inland lake, stream, or pond, or within 1,000 feet of a Great Lake. Permits are also required for smaller wetlands with the documented presence of an endangered or threatened species or if the site is considered rare and imperiled, such as a fen. Regulated activities include, with a few exceptions, dredging, filling, or draining a wetland. Constructing, operating, or maintaining any use or development within a wetland is also regulated. Local governments can also regulate wetlands under two acres.

If property owners are not sure if their property has wetlands or if the wetlands are regulated, you can reach out the Watershed Council at 231-347-1181. You can also contact the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Gaylord District Office at 989-731-4920 or your local government for more information.

## PUTTING BEST MANAGEMENT PRACTICES FIRST WITH SHORELINE EROSION

• BY ERIC CALABRO, Michigan Department of Environment, Great Lakes, and Energy Inland Lakes Analyst •

In the state of Michigan, the loss of lakeshore habitat and lakeshore complexity are major stressors on our lakes. Activities that simplify the shoreline, such as eliminating vegetation, seawalls, and fills into the nearshore lakebed, result in lower diversity as shoreline and aquatic plant and animal species are eliminated.

Seawalls or hardened shorelines degrade lakes by reflecting wave energy, eliminating shoreline habitat for fish and wildlife, promoting runoff of nutrients and pollutants, and degrading water quality. The individual and cumulative impacts of seawalls on our inland lakes have been significant, with the National Lakes Assessment indicating that over 50 percent of Michigan’s lakes have degraded lakeshore habitat due to hardened shorelines.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) recently updated the General Permit and Minor Project Categories for wetlands, lakes, and streams in Michigan. These are expedited permits for activities that will cause only minimal adverse effects when performed separately, and will have only minimal cumulative adverse effects on the environment by incorporating current best management practices (BMPs). For shoreline stabilization projects, using bioengineering techniques including plants, appropriately-sized rocks, and woody structures are the current best management practices that protect shorelines from erosion while enhancing our inland lakes’ water quality and habitat. We know that many owners with existing seawalls apply to replace them every year, and the new category allows for replacement of existing seawalls if BMPs are incorporated. Applicants can choose the BMP they prefer or propose another measure of their choice.

### BMP CHOICES INCLUDE:

- Reducing the total length of the seawall by 25% or more and using riprap (rocks used to stabilize shorelines) or bioengineering on the remaining area. For example, this could include a break in the wall where there is bioengineering or a shortened wall at one end.

- Adding woody debris past the replacement wall to provide wildlife habitat. We recommend using the plans on pages 14-15 of this protocol: [www.bit.ly/fishstructure](http://www.bit.ly/fishstructure).
- Maintenance of a minimum six feet wide no-mow zone or buffer of native plants in front of the seawall for the entire length of the wall. It may include minimal breaks for recreational access, such as around docks or swimming areas.
- Other measures approved by EGLE staff.

### HOW DO BMPs ADDRESS THE HARMFUL IMPACTS OF SEAWALLS?

- Seawalls cause scouring of the lake bottom and erosion of neighboring properties, but BMPs, such as shoreline woody structures, riprap, and bioengineering, address this impact by absorbing and dissipating wave energy.
- Seawalls cause sediment and nutrient suspension and overall lower water quality, but BMPs address this impact by filtering sediment from runoff and stabilizing it.
- Seawalls do not support aquatic and shoreline vegetation growth, but bioengineering and shoreline woody structures address this impact by dissipating wave energy and supporting plant growth.
- Seawalls don’t provide wildlife habitat and have no ecological value. BMPs actually create more complex microhabitats for organisms to use.
- Seawalls create a barrier for animal movement, but reducing seawall length and bioengineering address this impact by improving land/water connectivity.

Best management practices criteria allow a permit to be issued under an expedited category and do not require financial assurance, easements, or detailed monitoring efforts. There are many resources available for lakefront property owners to find contractors and learn about different options for shoreline stabilization. EGLE recently gave a webinar covering BMPs for inland lakes shorelines including the seawall replacement category and BMPs requirements which can be viewed at [www.bit.ly/BMPwebinar](http://www.bit.ly/BMPwebinar).



*A buffer zone of native plants near the shoreline can help protect water quality and prevent erosion.*

## SEPTIC REGULATION SUCCESS STORIES IN NORTHERN MICHIGAN

Our northern waters continue to be threatened by improperly maintained and failing septic systems due to a lack of statewide septic code. Many malfunctioning septic systems remain undetected or unreported for years. In fact, most on-site septic systems in the state are never inspected again after installation.

The good news is that we can look to successful examples of local governments in Northern Michigan that have acted to protect our water and ensure the health and welfare of our citizens by adopting septic ordinances. Milton Township, the Village of Elk Rapids, and Kalkaska and Manistee Counties have all adopted septic time-of-transfer or point-of-sale ordinances (which require septic system inspections during the transfer or sale of property) to protect the rich water resources that are vital to Northern Michigan's economy and way of life. These assessments confirm whether the systems follow current regulations, provide recommendations to improve existing systems, and identify where threats to environmental or human health exist and require corrections.

Why are these ordinances so important? Statewide, the Michigan Association for Local Public Health estimates that local jurisdictions with time-of-transfer or point-of-sale programs find, on average, that 17% to 25% of systems evaluated need repair. For example, in 2020, 10% of systems inspected in Kalkaska County and 4% of those inspected in Manistee County were considered a substantial hazard, meaning that a "failure" was likely to occur in the near future. Inspections can catch septic system problems before they can develop into serious health issues.

Septic inspections and regular maintenance are vital tools for protecting water quality and public health. We hope these success stories will inspire local governments to pursue septic ordinances to help protect our communities and the waters we love.



## WORKING TOWARD SEPTIC SOLUTIONS IN NORTHERN MICHIGAN

There are over 1.3 million on-site septic systems in Michigan. It is anticipated that at least 10 percent of those have failed and one-third of them are not functioning properly. When septic systems fail or are improperly maintained, they can leach harmful bacteria, nutrients, viruses, pharmaceuticals, and other pollutants into drinking water wells and surface waters. This can lead to serious public health and environmental concerns. Michigan is the only state in the U.S. that doesn't regulate septic systems at the state level. As a result, septic system oversight falls to our local governments.

The Watershed Council is currently working with local partners to collaborate on septic solutions in Antrim and Emmet Counties. The first stage of these efforts has been to create outreach materials and resources that outline the importance of septic system maintenance and opportunities for regulation. The Watershed Council and its partners are encouraging local governments to adopt one of the policy options for ensuring that septic systems are properly functioning. For more information, you can contact Kacey Cook at Tip of the Mitt Watershed Council at [info@watershedcouncil.org](mailto:info@watershedcouncil.org) or 231-347-1181.

NEW

### SEPTICS PUBLICATION!

The Watershed Council is pleased to announce our new publication, "Proper Septic System Maintenance: A Guide for Michigan Homeowners." We want you to stay informed, save money, and protect the environment by maintaining your septic system over its lifetime. Find our free publication to help you do just that at [www.watershedcouncil.org/septic-systems](http://www.watershedcouncil.org/septic-systems). Scroll to the middle of the page and click on the "Proper Septic System Maintenance" button to download it.

### SIGNS YOUR SEPTIC SYSTEM IS STRUGGLING:

- Gurgling sounds from drains or toilets.
- A strong, unpleasant odor around the septic tank and drainfield.
- Algae or noticeable plant growth in the general vicinity of the drainfield.
- Lush, green grass over the drainfield, even during dry weather, could mean your septic system is leaching nutrients into the surrounding soil.

We hope that your septic system lasts for many years and that your maintenance schedule pays off. Remember: If your system ever needs repair or replacement, be sure to contact your local health department. With your help, we can protect Northern Michigan's beautiful waters.

### MAINTAIN YOUR SEPTIC SYSTEM AND PROTECT OUR WATERS

Since pollution from septic systems can cause big problems for our waters and human health, we're here to help you lower household costs and keep our waters safe. How can you do that? Get your septic system pumped on a regular schedule.

#### The basics:

Septic system pumping and maintenance costs about \$250 to \$500 every three to five years, depending on your household's needs, and can help prevent unpleasant backups and premature failure. Neglected and malfunctioning septic systems can cost between \$3,000 and \$20,000 to repair or replace. It's more cost effective to stay on a regular pumping schedule.

Maintenance and pumping schedules are based on a system's size and number of people living your household. Typically, they should be inspected every three to five years. Heavy or year-round use will require more frequent pumping than light or seasonal use.

#### What can you do besides regular maintenance?

Avoid pouring fats, grease, and solids that can clog pipes down the drain.

Wet wipes, dental floss, disposable diapers, feminine hygiene products, cat litter, and other trash can wreak havoc. Avoid flushing anything down the commode that doesn't belong there.

Watch your water use—leaky faucets and heavy dishwasher and laundry loads can strain a neglected septic system. Even a tiny leak can add several gallons of water to your septic system every day.

Protect your drainfield. Don't park your car on it. Prevent trees and shrubs from growing on or near it. If your drainfield fails, your septic system fails.

# THANKS FOR SUPPORTING OUR INTERNS!

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Katie Wolf and Michael Beaulac  
Steve and Kathy Young

## THANK YOU VOLUNTEERS

- Kory Alaniz for helping with data entry and field work
- Kathy Germain, Janie Guiliani, Richard Jenkins, and Doug Fuller for helping with macroinvertebrate identification
- Simon Gelb for taking conductivity measurements
- Tia Esposito for helping with our database

## WATERSHED ACADEMY SPONSORS

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- Great Lakes Energy Cooperative
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## CONGRATULATIONS, COUNSELOR KACEY COOK!

Kacey Cook passed the bar exam and was sworn in December 2021. She was sponsored by long-time family friend and fellow attorney Kathy Reed, with Judge Jennifer Deegan presiding over the ceremony. As the policy specialist, Cook works closely with Policy Director Jennifer McKay to promote water quality protections within our local communities and at the state, federal, and international levels. Cook said that it was a little bit surreal to witness how all of her hard work at Indiana University's Maurer School of Law, including extensive coursework in environmental law, led to this milestone. How does she plan on continuing to use her vast knowledge to help the Watershed Council?

"A lot of our Policy Team's work is interpreting and explaining regulations and laws related to issues of water quality and access," said Cook. "Having a law degree and that particular skill set helps me to better collaborate with our community partners, like when I am communicating with townships about drafting model ordinances for watershed protection or helping riparian landowners understand the laws regarding land uses with the potential to affect our water resources." Congratulations, Kacey! We're so happy to have you as part of our team.



From left to right, Kathy Reed, Judge Jennifer Deegan, and Kacey Cook.

## AQUAVIST NETWORK: SURVEY RESULTS ARE IN!

The Aquavists are an informed and empowered activist community dedicated to protecting Northern Michigan's waters. We form a unique rapid response team to act as a voice for the waters in Antrim, Charlevoix, Cheboygan, and Emmet Counties. In the fall, we launched a survey to learn more about how Aquavist network members would most like to participate in the group moving forward.

Thank you to all of the Aquavists who participated in our survey. Respondents highlighted their interest in learning more about many topics, including PFAS contamination, river restoration, and climate change. At the state and federal levels, members shared that they are especially interested in Line 5, the Clean Water Act, and controlling the spread of invasive species.

The majority of our respondents value connecting, collaborating, and problem solving with other members of our Northern Michigan communities. Other areas of considerable interest were opportunities to call and write to our representatives to advocate for our communities and our waters, as well attending presentations and events to learn about and engage with relevant topics and issues.

Thanks again for your participation and efforts to protect our shared water resources! We look forward to incorporating your feedback into our programming.



If you would like to join the Aquavist Network listserv, please fill out the form on our website: <https://www.watershedcouncil.org/aquavist-network.html>.



## OUR HEARTS BELONG TO THE HIGHLANDS AT HARBOR SPRINGS

On February 13, the Highlands did something incredible for the Watershed Council—they held a fundraiser for our organization and Little Traverse Conservancy. The proceeds of lift ticket sales for that Sunday were split equally between us, leaving the Watershed Council with around \$8,000. We are so grateful for their generosity and dedication to protecting our precious natural resources. Thank you to everyone who made this fundraiser a success!

## "WATERS OF THE U.S." SAGA CONTINUES

The Clean Water Act (CWA) was enacted by Congress in 1972 as the nation's primary federal law regulating water pollution. The CWA established a permitting program that prohibits an unpermitted discharge of any pollutant from a point source into "navigable waters." The text of the CWA defines the term navigable waters as "the waters of the United States, including the territorial seas" (WOTUS). How WOTUS is defined determines the geographical scope of federal jurisdiction.

Any body of water defined as WOTUS requires a permit for dredging, dirt fill, or discharges.

Despite the critical importance of knowing what WOTUS is under the CWA's programs, the scope of WOTUS has had a tumultuous history because of obscure or fluctuating agency definitions. The definition of WOTUS is one of the most fiercely contested and misunderstood rules under the Environmental Protection Agency's (EPA's) jurisdiction.

One aspect of the WOTUS definition has always been clear: It applies to U.S. oceans, major navigable rivers, lakes, and any connected waterways. What is not so clear is how to handle wetlands and loosely connected waterways, such as streams that are dry for part of the year.

The U.S. Army Corps of Engineers (USACE) and EPA first proposed a WOTUS definition in 1977, and it has faced revisions and legal challenges ever since.

The WOTUS definition was revised in 2015 by the Obama Administration to expand the definition and then in 2020 by the Trump Administration to narrow the definition, with both definitions facing swift legal challenges. In 2021, the Trump rule was overturned and is no longer in effect. The EPA and the USACE announced that they were issuing a proposed rule to re-establish the pre-2015 definition of WOTUS and are planning to unveil a new definition of what constitutes a "water of the U.S."

Meanwhile, on January 24, 2022, the U.S. Supreme Court agreed to hear a case on the scope and authority of the Clean Water Act.

Given the significance of how WOTUS is defined, again, be participating to ensure that a new proposed rule will strengthen clean water protections and meet the intent of the Clean Water Act "to restore and maintain the chemical, physical and biological integrity of the nation's waters."

## HISTORIC WIN FOR THE GREAT LAKES

On November 15, President Biden signed into law a sweeping bipartisan infrastructure package, the Infrastructure Investment and Jobs Act, paving the way for historic investments in drinking water and wastewater infrastructure, Great Lakes restoration, and core clean water priorities. The bill will invest \$1.2 trillion for infrastructure work, including authorizing \$35 billion in water infrastructure investments over five years. The new funding will be supplemented by over \$62 billion in additional appropriations to augment critical infrastructure programs and address public health threats. But what are these investments and what do they mean for us here in Northern Michigan?

**\$1 billion for the Great Lakes Restoration Initiative (GLRI), the single-largest investment in the program's history.** The bill would provide \$1 billion over five years for Great Lakes restoration efforts that clean up toxic pollution, restore wildlife habitat, reduce runoff pollution, and fight invasive species. The Watershed Council, as well as many local organizations and tribes, have received funding through the GLRI for projects to restore and protect our Northern Michigan waterways.

**Over \$70 billion for aging and crumbling drinking water and wastewater infrastructure.** The City of Cheboygan is proactively seeking funding for much needed planning, design, and construction of drinking water and sanitary sewer projects from the infrastructure dollars when they become available. Other local governments in our region may be seeking similar funding as well.

**\$15 billion for replacement of harmful lead service lines.** Michigan has among the highest per-capita rates of lead service lines in the nation — as many as 500,000 in total.

**\$10 billion for action on emerging contaminants like toxic PFAS.** So far, more than 11,000 PFAS-contaminated sites, including some in Northern Michigan, have been identified, and the Michigan Department of Environment, Great Lakes and Energy frequently adds to the list.

**\$1.9 billion for U.S. Army Corps of Engineers aquatic restoration projects,** some of which could fund projects to protect and restore Great Lakes coastal habitats and fisheries.

This historic legislation is a victory for the Great Lakes and the millions of people who depend on them for their drinking water, health, jobs, and quality of life.



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ADDRESS SERVICE REQUESTED

**JUNE**

**BEARDS BREWERY  
COMMUNITY  
OUTREACH  
PARTNERSHIP**

**JUNE**  
215 E Lake St., Petoskey

Beards Brewery is partnering with the Watershed Council through the end of June. Proceeds from Copperstar Galactica sales will support our programs to protect Northern Michigan's waters.

**LAKE CHARLEVOIX DAY**

**JUNE 13**  
8:30 a.m. to 4:00 p.m.  
Charlevoix Public Library  
220 Clinton St., Charlevoix

Tip of the Mitt Watershed and Lake Charlevoix Association, along with our partners, are hosting this event to learn more about the historical trends of shoreline management on Lake Charlevoix, the impacts of shoreline hardening, and how residents, contractors, and local governments can help protect the health of the lake.

Register for Lake Charlevoix Day at [www.watershedcouncil.org/attend-an-event](http://www.watershedcouncil.org/attend-an-event).

**JULY**

**WHALE OF A SALE**

**JULY 14-16**  
10:00 a.m. to 2:00 p.m.  
7580 S State St., Harbor Springs

This annual used boat and gear sale helps us raise money for our programs to protect Michigan's waters. Boat previews will be online July 12-13 at [www.watershedcouncil.org/wos](http://www.watershedcouncil.org/wos).

**ANNUAL MEETING**

**JULY 18**  
10:00 a.m. to 1:30 p.m.  
Stafford's Perry Hotel  
Rose Garden  
100 Lewis St, Petoskey, MI

Learn about efforts to protect our fresh waters. Lunch included.

RSVP for annual meeting at [www.watershedcouncil.org/annual-meeting](http://www.watershedcouncil.org/annual-meeting).

**MI PADDLE STEWARDS  
INVASIVE SPECIES  
PLANT TRAINING**

**JULY 25**  
6:30 p.m. to 8:30 p.m.  
Location: TBD

Come learn about kayak safety and invasive species, and explore one of the conservancy's preserves with Paddle Antrim, Little Traverse Conservancy, and the Watershed Council.

Register for training at [www.watershedcouncil.org/attend-an-event](http://www.watershedcouncil.org/attend-an-event).

**AUGUST**

**CLEAN WATERS  
CHALLENGE**

**AUG. 5-7  
KICKOFF EVENT: AUG. 6,**  
9:00 a.m. to noon  
Pennsylvania Park in downtown Petoskey

Help clean area streams, rivers, or beaches and be entered to win one of several prizes donated by Bearcub Outfitters. Register below to be eligible to win prizes.

Register for Challenge at [www.watershedcouncil.org/clean-waters-challenge](http://www.watershedcouncil.org/clean-waters-challenge).

**SEPTEMBER**

**AVIAN BOTULISM  
MONITORING**

**SEPTEMBER 1 -  
NOVEMBER 30**  
Lake Michigan shoreline  
in Charlevoix and Emmet  
Counties

Add more purpose to your beach walk by looking out for birds dead from botulism poisoning along Lake Michigan. Sign up and join our Water Reporter community to share your findings.

Register to help monitor at [www.watershedcouncil.org/attend-an-event](http://www.watershedcouncil.org/attend-an-event).

**17TH ANNUAL LAKE  
ASSOCIATION SUMMIT**

**SEPTEMBER 8**  
9:00 a.m. to noon  
Virtual

Join us virtually for our 17th Annual Lake Association Summit to learn how your organization can best connect with your audience. There will also be breakout sessions on different water quality topics. An in-person networking event will follow the next morning.

Register for Lake Summit at [www.watershedcouncil.org/attend-an-event](http://www.watershedcouncil.org/attend-an-event).

**BREWS ON THE  
BAY—OUR LAKE  
ASSOCIATION SUMMER  
NETWORKING EVENT**

**SEPTEMBER 9**  
10:00 a.m. to noon  
Petoskey, MI: Exact  
Location TBD

As part of the Lake Association Summit, attend our networking event to enjoy a cup of coffee and bagel, and chat with old and new friends.

**VOLUNTEER STREAM  
MONITORING FALL  
SESSION**

**SEPTEMBER 21**  
5:00 p.m. to 7:30 p.m.  
Alden, MI: Exact Location TBD

The training session takes place on Spencer Creek. Please dress for the weather. Refreshments provided.

Register for training at [www.watershedcouncil.org/attend-an-event](http://www.watershedcouncil.org/attend-an-event).



Our volunteers have monitored local lakes and streams for over 30 years. Join them at one of our training sessions! See [www.watershedcouncil.org/attend-an-event](http://www.watershedcouncil.org/attend-an-event) for details on registration.

