

Current Reflections

Fall 2019/Winter 2020



Lake Levels – How High Will They Go?

Despite their vastness and ageless beauty, we often forget that the Great Lakes are a living system, an ever-changing ecological process. Those fortunate enough to visit or reside along the shore of a Great Lake for any length of time are sure to recognize that the only constant associated with the shoreline is change. This was the exact beginning to a story in our 2012 *Current Reflections* on water levels. At that time we were experiencing extreme low water levels instead of the current high water levels. Regardless of whether we are experiencing extreme high or extreme low water levels, the same principal applies...the Great Lakes are a dynamic and ever-changing ecosystem.

Fluctuations in Great Lakes water levels have occurred continually since the Great Lakes formed at the end of the Ice Age. Great Lakes water levels normally fluctuate throughout the year and from one year to the next. The Lakes naturally cycle between periods of high water and low water. These fluctuations are considered vital to the health and function of the Great Lakes ecosystem.

While these fluctuations are key to what makes the Great Lakes great, they can also adversely impact those who live on or use the Great Lakes and their connecting waterbodies. High waters cause erosion, flooding, and can damage structures along the shoreline. Low water levels block access to ports used commercially and recreationally.

Researchers specializing in hydrology and climate science believe rapid transitions between extreme high and low water levels in the Great Lakes represent the “new normal.” Increasing precipitation, the threat of recurring periods of high evaporation, and a combination of both routine and unusual climate events – such as extreme cold air outbursts – are putting the region in uncharted territory.

So what are shoreline homeowners and businesses to do when we experience extreme highs (or lows) like we currently are?

While it is recognized that high and low water levels can have a significant impact, it is again important to recognize that Great Lakes water levels will always change. The shapes and sizes of the Great Lakes are not what they were 10,000 years ago nor will they remain how they are today centuries into the future. We choose to live and recreate on this magnificent resource and with

that we must understand that the Lakes undergo natural ecological processes beyond our control and even our understanding.

We cannot force the Lakes to behave in a manner that is acceptable to our current uses or lifestyles. By trying to manipulate the Lakes to accommodate our needs, we are merely creating more problems. Instead, we need to embrace the Great Lakes in their entirety. This includes accepting that at times the water will be high and at times the water will be low. It includes adapting to Great Lakes water level variability through sound planning efforts that consider variable water levels as part of anticipating vulnerabilities, preparing for extremes, and adapting accordingly.

Should your shoreline be in need of stabilization due to high water, maintaining deep-rooting, shoreline-adapted vegetation can reduce the risk of severe erosion. Beaches and mowed turf to the water's edge have very little resistance to the erosive forces of water. Conversely, using sandbags, oversized rock, gabions, and other forms of structural shore protection can increase the potential for erosion.

And remember, shoreline protection projects, including riprap, revetments, backfill, and bioengineered shore walls, require permits from the Michigan Department of Environment, Great Lakes, and Energy, and from the U.S. Army Corps of Engineers if you live on the Great Lakes or a connected waterway.

The U.S. Army Corps of Engineers (USACE) and Environment Canada jointly monitor and forecast water levels on the Great Lakes. For the most up-to-date information on current water levels of the Great Lakes, visit www.lre.usace.army.mil/Missions/Great-Lakes-Information/.

Additionally, NOAA Great Lakes Environmental Research Laboratory (GLERL) developed an interactive web-based tool that facilitates the viewing and analysis of monthly and annual lake-wide average water level data and forecasts. The tool, the Great Lakes Water Level Dashboard, is intended to improve public understanding of natural Great Lakes water level variability and the inherent uncertainty in model-based water level forecasts. The Great Lakes Water Level Dashboard can be accessed at www.glerl.noaa.gov/data/dashboard/GLD_HTML5.html.

Photo Credit: Mark Brederland, Michigan Sea Grant

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Reflections From Our Executive Director

Several years ago I wrote a column for this newsletter describing the Watershed Council's challenge communicating our diverse accomplishments and information with our different audiences. This challenge continues to grow as the amount of information shared across so many platforms is presented to each of us each day. And as emerging issues arise seemingly every few months, think PFAS, our list of topics we wish to communicate about grows.



Gail Gruenwald
Executive Director

As in past years, this winter newsletter is packed with articles retelling our work from this summer and fall. This work varies from extensive restoration work, lake-wide surveys, water quality monitoring, and a season of outreach events and education. What do they all have in common? Collectively, these individual programs combine to further our purpose – to protect the environmental quality of Northern Michigan for current and future generations.

Our hope is that this newsletter conveys to you, as our members, the value of our work. We also hope that you find this information valuable and understandable as you sort through both local topics and those that impact the State of Michigan and the Great Lakes Basin. We hope we convey how our work benefits our waters and your interests, and we try to direct you to ways that you can get involved.

Why is this important? Because you, as Watershed Council members, become the messengers for this information to others. You become the ambassadors for the Watershed Council, helping to further our mission and protect the waters we all care about.

We value your input on this newsletter and any other information you see from the Watershed Council. And as always, if something within these pages catches your attention and you want to engage further, give a call. We'd love to hear from you!

New Additions to Our Staff



Natalie

We are excited to announce two additions to our team: Natalie Walts and Garrett Greer!

Natalie joined the Tip of the Mitt Watershed Council in August of 2019 after relocating from Southeast Michigan. As Office Manager, Natalie is responsible for ensuring that the office and building are running smoothly, and will provide support to the Watershed Council's outreach and education programs. Prior to joining the Watershed Council, she was a middle school science teacher for 11 years. She earned a Bachelor of Science degree in Elementary Education from Western Michigan University and a master's degree in the Art of Teaching from Marygrove College. She grew up in Plymouth, MI, and spent many summers at her family cottage on Munro Lake in Cheboygan County. Natalie loves most outdoor activities including skiing, backpacking, kayaking, and hiking.



Garrett

Garrett joined the Tip of the Mitt Watershed Council as a seasonal employee following his summer 2019 internship. Originally from "the thumb," Garrett moved to Northern Michigan in the fall of 2017 to attend North Central Michigan College, where he was the first graduate from the college's new Environmental Studies program. Around the office he is helping with education, outreach, policy and advocacy, and watershed protection. His love for the outdoors stems from being a sportsman in the Great Lakes State. He is enthralled with both the preservation and restoration of our natural world and looks forward to assisting the Watershed Council in accomplishing those tasks in Northern Michigan.

UPDATE: Line 5

Enbridge Energy has been working hard to convince local governments and Michigan citizens that a tunnel is the best option for Line 5. However, replacement of Line 5 in a tunnel under the Straits of Mackinac is not a wise decision for the future of Michigan's environment and economy. It would allow Line 5 to continue crossing Michigan's rivers, streams, and Great Lakes for an untold number of years, putting these resources at risk and preventing the State of Michigan from aggressively addressing climate change.

Replacement of Line 5 in the Straits will not eliminate the risk to the public trust waters of Michigan. A tunnel only addresses the risk posed by four miles of Line 5. Risk to Michigan's waters, public health and safety, and our economy remain for the other 543 miles of Line 5 located within Michigan. **The pipeline over the other 543 miles of Line 5 has nearly 400 sites where it crosses a water body.**

The inland portions can pose just as great, if not greater, threat to our waters due to the basic construction, operation, and maintenance of the line. The wall thickness of the inland pipeline is significantly less. Along with a thinner pipeline, it operates at a higher pressure. It has a side seam, which the Straits portion of pipe does not have. This seam can be subject to stress cracking and could cause the inland pipe to be more vulnerable. The inland portion is also not subject to the same inspection frequency.

In addition, should the tunnel become a reality, Michigan is handcuffed to a century of continued use of fossil fuels. This will be disastrous for Michigan, both in terms of our natural resources and the economy. We only need to look at the recent extreme flooding and losses to agriculture from heavy spring rains to see the beginning cost of climate change. Changes in precipitation, coupled with rising temperatures will reduce agricultural productivity in Michigan. Rising temperatures will worsen air quality, increase pollen, and bring more threats from disease-carrying pests. We expect to see increased pollution from runoff and more harmful algal blooms threatening the health of our waters. We must ask ourselves, is this the future we want Michigan locked into?

Alternatives have been identified by independent experts at London Economics International. These alternatives, including trucking and utilizing existing infrastructure, would address the risks associated with the entire pipeline infrastructure, address Michigan's energy needs, and could be implemented with little to no impact to Michigan's industry and consumers. To read this report, visit www.watershedcouncil.org/alternatives-line5.

In the end, the tunnel project represents a real threat to our environment, our economy, and the health and wellbeing of the people of our State.

New Resource Available: Guidebook - Pipeline Permitting In Michigan

A guidebook, *Pipeline Permitting in Michigan: Involving Citizens in the Decision-making Process*, is now available for Michigan citizens, local officials, and nongovernmental organizations. The publication was produced by Tip of the Mitt Watershed Council with funding provided by the Pipeline and Hazardous Materials Safety Administration Technical Assistance Grant Program.

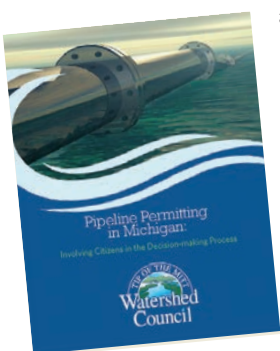
Community engagement is a vital part of many pipeline projects. Public participation contributes to better decisions because decision-makers have more complete information in the form of additional facts, values, and perspectives obtained through public input. Decision-makers can then incorporate the best information and expertise of all stakeholders. Ultimately, earlier and more productive involvement will lead to better project designs and can minimize the risks that pipelines pose.

Both State and Federal regulations provide opportunities for the public to participate in the regulatory processes for pipeline projects. Navigating through the various processes can often be overwhelming. This guidebook is designed to help

navigate that process by providing basic information about permitting for pipeline projects in Michigan and how citizens can effectively participate in the public processes.

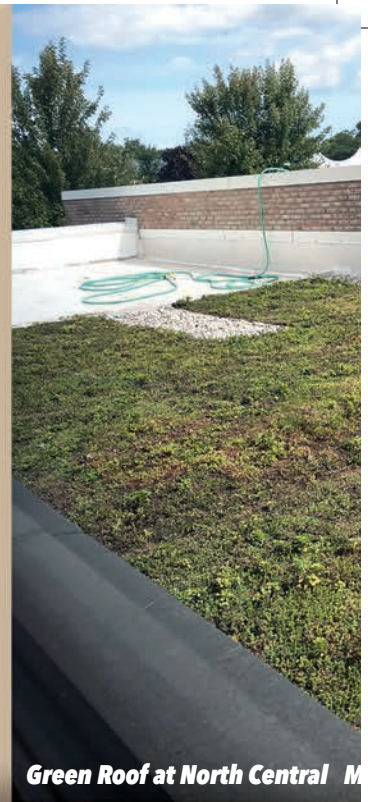
The guidebook provides information about what laws govern pipeline projects in Michigan, what public engagement opportunities exist, and how to most effectively participate in the public process to help protect Michigan's water resources and public health and safety. The *Pipeline Permitting in Michigan: Involving Citizens in the Decision-making Process* can be viewed on the Watershed Council website at www.watershedcouncil.org/pipeline-permitting. Hard copies can be requested by calling (231) 347-1181.

In addition to the publication, the Watershed Council also hosted a webinar to increase knowledge and awareness of pipeline permitting and engagement opportunities. The webinar featured presenters from the Michigan Public Service Commission and Michigan Department of Environment, Great Lakes, and Energy. A recording of the webinar is available for viewing on the Watershed Council website, www.watershedcouncil.org/webinar. The webinar was also funded by the Pipeline and Hazardous Materials Safety Administration Technical Assistance Grant Program.





Petoskey Greenway Rain Garden



Green Roof at North Central Michigan College

Little Traverse Bay Watershed and Rain Garden

The Petoskey Greenway Rain Garden at St. Francis Credit Union

This rain garden is not only receiving runoff from the nearby parking lot at St. Francis Credit Union, it has also hosted an incredible amount of monarch butterflies this summer! Thank you to the City of Petoskey for their partnership, as well as the National Fish and Wildlife Foundation and Petoskey-Harbor Springs Area Community Foundation for their support.

Watershed Council Rain Garden

If you've been past our office at 426 Bay St. in Petoskey, you might have noticed some changes to our front landscape. With support from the National Fish and Wildlife Foundation and the Petoskey-Harbor Springs Area Community Foundation, we were able to renovate our rain garden and adjoining landscape. The area was planted with a variety of Michigan native plants common to Great Lakes coastal regions. All plants were propagated from local seed sources. Next year we anticipate the landscape to fill in nicely, while keeping maintenance needs low.

Green Roof at North Central Michigan College (NCMC)

North Central Michigan College is a little greener thanks to a new green roof installed adjacent to the Iron Horse Café. As part the Little Traverse Bay Watershed Green Infrastructure Initiative, this example of green infrastructure will help to intercept rain and snow, while retaining the water in the soil medium for plant growth. As a result, much less water runs off the roof, as compared to conventional rooftops. Thank you to North Central Michigan College for their partnership!



Signage at Petoskey Greenway Rain Garden



Residential Rain Garden



al Michigan College



Bioretention/Rain Garden at North Central Michigan College

Watershed Green Infrastructure Rain Garden Initiative

North Central Michigan College (NCMC) Bioretention/Rain Garden

A rain garden at North Central Michigan College near the Jack and Dorothy Harris Health Education and Science Center was installed in September, 2019. The project is part of the Watershed Council's Little Traverse Bay Watershed Green Infrastructure Initiative. The rain garden will receive and infiltrate runoff from the nearby parking lots and road.

Both the North Central Michigan College green roof and rain garden projects were made possible with funding from the National Fish and Wildlife Foundation.

Bay View Association Rain Garden

This Bay View Association rain garden has worked hard this summer, capturing and infiltrating stormwater runoff from Bay View streets. Installed in 2015, the rain garden has filled in beautifully with a variety of native perennials and grasses that bloom throughout the season. Thank you to the Petoskey-Harbor Springs Area Community Foundation, the Great Lakes Restoration Initiative, and Bay View Association for making the Bay View Association Rain Garden Initiative possible and for helping us protect Little Traverse Bay!

Project Rain Garden

Petoskey has eleven new residential rain gardens helping to protect Little Traverse Bay! These rain gardens were installed as part of Project Rain Garden, a cost-share program made possible through support from the Petoskey-Harbor Springs Area Community Foundation. Each rain garden has a small sign that indicates it is part of the program so be on the lookout when around town! Special thanks to the homeowners who participated in the program and their help in protecting Little Traverse Bay.



Bay View Rain Garden

Michigan Swimmer's Itch Partnership Completes Third Year of Funding

The Michigan Swimmer's Itch Partnership (MISIP), a consortium of lake associations created to address swimmer's itch, is wrapping up its third year of funding from the Michigan Department of Natural Resources (MDNR). Swimmer's itch is caused by a group of parasites, called "avian schistosomes," that are normally hosted by birds and snails. All avian schistosomes live as adult worms in a definitive (vertebrate) host, and pass their eggs in the feces of their host. If the eggs land in water they hatch within an hour and the resulting free-living larvae (called miracidia) need to penetrate into the correct intermediate host (always a snail) in order for the parasite to survive. Once inside a snail, the flatworms reproduce asexually and after 3-4 weeks develop into a second free-living larval stage, called "cercariae." These cercariae leave their snail host to find a new vertebrate host. Swimmer's itch occurs when cercariae accidentally penetrate humans when they are in lake water, where they die before reaching the skin's dermal layer. One way to break the cycle is to relocate host common mergansers from lakes with swimmer's itch to lakes (usually the Great Lakes) without the intermediate snail host.

In the past few years MISIP has focused on helping lake associations reduce swimmer's itch while increasing the overall



Merganser duckling being fitted with a web tag.



Scouting for mergansers on Glen Lake.

knowledge base of the pesky parasite that causes the itch. This year MISIP funded three research projects including:

- 1) A statewide snail survey from Oakland University and the University of Dallas. Up to 50 inland lakes in Michigan were sampled. The study also aims to understand whether aquatic plants act as a deterrent to swimmer's itch cercariae.
- 2) Freshwater Solutions, LLC is researching merganser relocation effectiveness and how various schistosome species contribute to swimmer's itch.
- 3) Swimmer's Itch Solution, LLC is exploring common merganser nesting behavior and behavior after relocation.

Research priorities were driven by shared priorities between the MDNR, MISIP, contractors, and the Watershed Council. The studies will provide much-needed information important for how lake associations and other groups will choose to manage swimmer's itch. The MDNR is also updating its Common Merganser Removal Policy with clarifications requested by lakes in MISIP and by researchers.

In addition to research, MISIP provided cost-share funding to seven lakes to remove common mergansers and six lakes for assessment of their swimmer's itch.

As of press time for this newsletter no funding was allocated in the State of Michigan budget towards MISIP for 2020. Nonetheless, lakes will still be able to control and assess swimmer's itch by working directly with contractors. The Watershed Council will be available to help lakes in our service area navigate the MDNR permit process. A statewide how-to guide will be produced this fall and winter to help all lake associations understand their options and navigate the increasingly complex world of swimmer's itch. To learn more, visit www.misip.org.

Shoreline Survey Completed on Lake Charlevoix

In 2007 and 2012, Watershed Council staff and interns surveyed the entire Lake Charlevoix shoreline for nutrient pollution, habitat loss, and shoreline erosion. The Watershed Council recommends repeating shoreline surveys every 5-10 years for comparison purposes. As a result, we repeated the survey in 2018 in partnership with the Lake Charlevoix Association and private consultant ZeroGravity Aerial.

Results from the 2018 shoreline survey indicate that nutrient pollution, shoreline erosion, and other shoreline changes may pose a threat to the water quality and overall health of Lake Charlevoix. The lack of native vegetation at water's edge with potential septic leakage from parcels might be the greatest threats to Lake Charlevoix.

When compared to previous Lake Charlevoix shoreline surveys, the percentage of development along the shoreline and *Cladophora* presence was slightly higher in 2018, while erosion was similar to the 2012 survey. *Cladophora* is a branched, filamentous green algal species that occurs naturally in relatively small amounts in Northern Michigan lakes. However, high densities of *Cladophora* at shoreline locations can be an indication of high concentrations of nutrients, particularly phosphorus, entering a lake.

The percentage of development along Lake Charlevoix increased from around 85% in 2007 and 2012, to around 90% in 2018. Although a greater number of parcels exhibited *Cladophora* growth, the number of parcels with heavy growth was lower than 2012, but still greater than in 2007. The percent of parcels with noticeable patches of *Cladophora* increased from 17% in 2007, 22% of the shoreline in 2012, up to 37% in 2018. Of the parcels with some presence of *Cladophora* in 2018, 23% was categorized as "light." Erosion was observed along 35% of the shoreline in 2012 and 34% of the shoreline in 2018.

Completion of the survey is the first step to improved shoreline management. The Watershed Council will continue to partner with the Lake Charlevoix Association to present this survey report to shoreline residents and assist residents in their efforts to improve shoreline stewardship. Thank you to the Lake Charlevoix Association and the Charlevoix County Community Foundation for funding this important work.

Bear River's Lake Street Dam: Exploring Alternatives

Tip of the Mitt Watershed Council is currently coordinating an effort to explore engineering alternatives for the Lake Street dam in Petoskey. The dam is the lowermost barrier on the Bear River (River), the largest tributary to Little Traverse Bay (Bay), and is owned by the City of Petoskey. A 2018 inspection report, produced by OHM Advisors, indicated that while no structural deficiencies were identified through visual observation, monitoring, maintenance, and further review of the dam and its impact on the Bear River is warranted. The purpose of the current study is to explore future engineering alternatives for the existing concrete structure. The goal of the study is to 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. As part of the study, the Watershed Council is seeking public input through November 30, 2019. Feedback from community members who frequent the Bear River for recreation and enjoyment are encouraged to complete the survey. Input received from the survey will factor into the future management of the dam.

Please visit <https://tinyurl.com/LakeStreetDamPetoskey> to take the survey.

Over the winter, OHM Advisors will complete the engineering portion of the study, which will consider the impacts to the River and Bay under the following scenarios: complete dam removal, partial dam removal, modification of the dam, and no action. In May of 2020, the results of the study will be shared at a second public open house. The City will use the information gained through the study to inform future management of the dam.

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, and the City of Petoskey.



ELK RIVER CHAIN OF LAKES: Shoreline Survey Results Available

The Elk River Chain of Lakes were surveyed by Tip of the Mitt Watershed Council during the summers of 2016, 2017, and 2018 to document the following: algae as a nutrient pollution indicator, erosion, shoreline alterations, greenbelts, and tributary inlets and outlets. This survey was funded through the Michigan Department of Environment, Great Lakes, and Energy's Nonpoint Source Program of the United States Environmental Protection Agency. Fifteen lakes were included in the survey: Beals Lake, Scotts Lake, Six Mile Lake, St. Clair Lake, Ellsworth Lake, Wilson Lake, Ben-way Lake, Hanley Lake, Intermediate Lake, Lake Bellaire, Clam Lake, Thayer Lake, Torch Lake, Lake Skegemog, and Elk Lake.

Results are now available for shoreline property owners to review. To get your results and shoreline stewardship recommendations, call the Watershed Council at (231) 347-1181 and ask for your unique ID number. Once you have that information, you may use it to access your personalized, confidential information at www.freshwatercenter.org.

Lake shorelines are the critical interface between land and water, where human activity has the greatest potential for degrading water quality. Traditional development of shoreline properties for residential, commercial, or other uses invariably leads to impacts on lake ecosystems. The natural landscape can be altered in a variety of ways such as removal of vegetation, grading of terrain, installation of utilities, building of structures, and paving. These changes to the landscape and, subsequent activity in the shoreline area, have consequences on the aquatic ecosystem.

Sources of pollutants from lake shorelines can include nutrients, sediment, oil and grease, and other pollutants. Sources of these pollutants can include septic systems, lawns, and stormwater runoff from roads, driveways, parking lots, roofs, or other impervious surfaces.

While the shoreline survey assessed erosion and shoreline alterations as well as nutrient inputs, the Watershed Council survey techniques focused on the presence of *Cladophora*, a branched, filamentous green alga that occurs naturally in small amounts in Northern Michigan lakes. *Cladophora* is found most commonly in shallow shoreline areas of lakes, as well as streams, and can be an indicator of nutrient inputs from shoreline areas.

It grows best on stable substrates such as rocks and logs, though artificial substrates such as concrete or wood seawalls are also suitable habitat for growth. *Cladophora* prefers water temperatures in a range of 50 to 70 degrees Fahrenheit, which means that the optimal time for its growth and detection in Northern Michigan lakes is from mid-May to early July, and September to October.

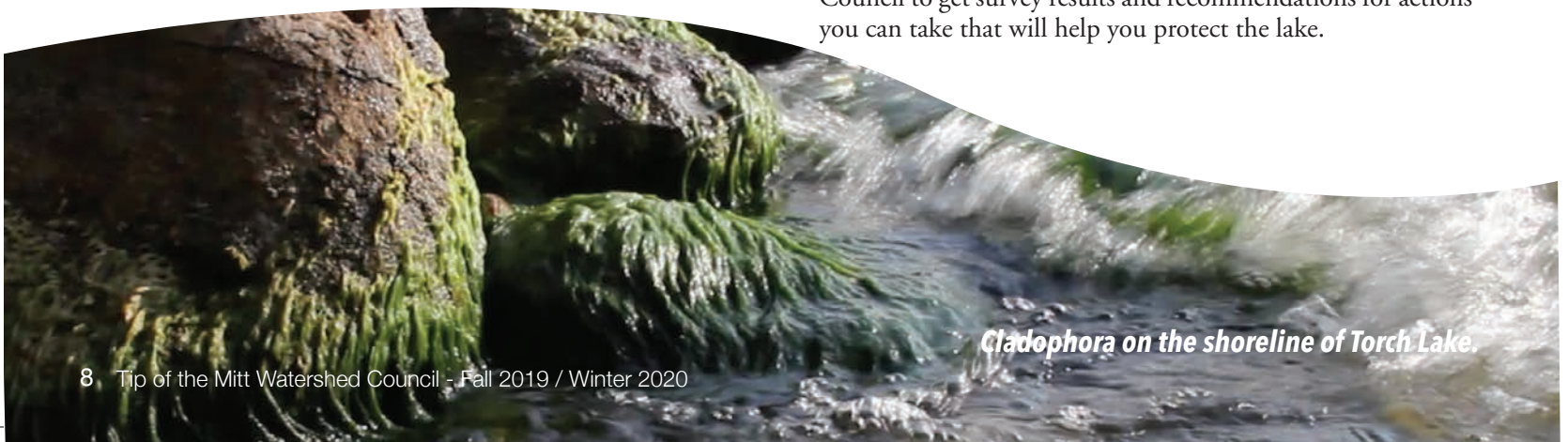
The nutrients required for *Cladophora* to achieve large, dense growths are typically greater than the nutrient availability in the lakes of Northern Michigan. This means that shoreline locations where relatively high concentrations of nutrients, particularly phosphorus, are entering a lake can be identified by noting the presence of *Cladophora*. The presence or absence of any significant growth is a powerful lake-wide screening tool. It can reveal the existence of chronic nutrient loading problems and assess the effectiveness of any remedial actions. Comparisons of the total number of algal growths can reveal trends in nutrient inputs due to changing land use, so noting the presence or absence of *Cladophora* is an important element of the shoreline survey.

Lake-friendly shoreline property management is paramount for protecting water quality and sustaining a healthy, thriving lake ecosystem. Septic system maintenance, stormwater management, erosion control, and the elimination of fertilizers, herbicides, and pesticides are among the many low-cost best management practices that minimize the impact of shoreline properties on water quality. Additionally, there is an excellent resource for anyone who wants to be a good steward of our lakes called Michigan Shoreland Stewards, found at www.mishorelandstewards.org. This program provides recognition for lakefront property owners who use best management practices.

If you own property on a lake in the Chain, call the Watershed Council to get survey results and recommendations for actions you can take that will help you protect the lake.

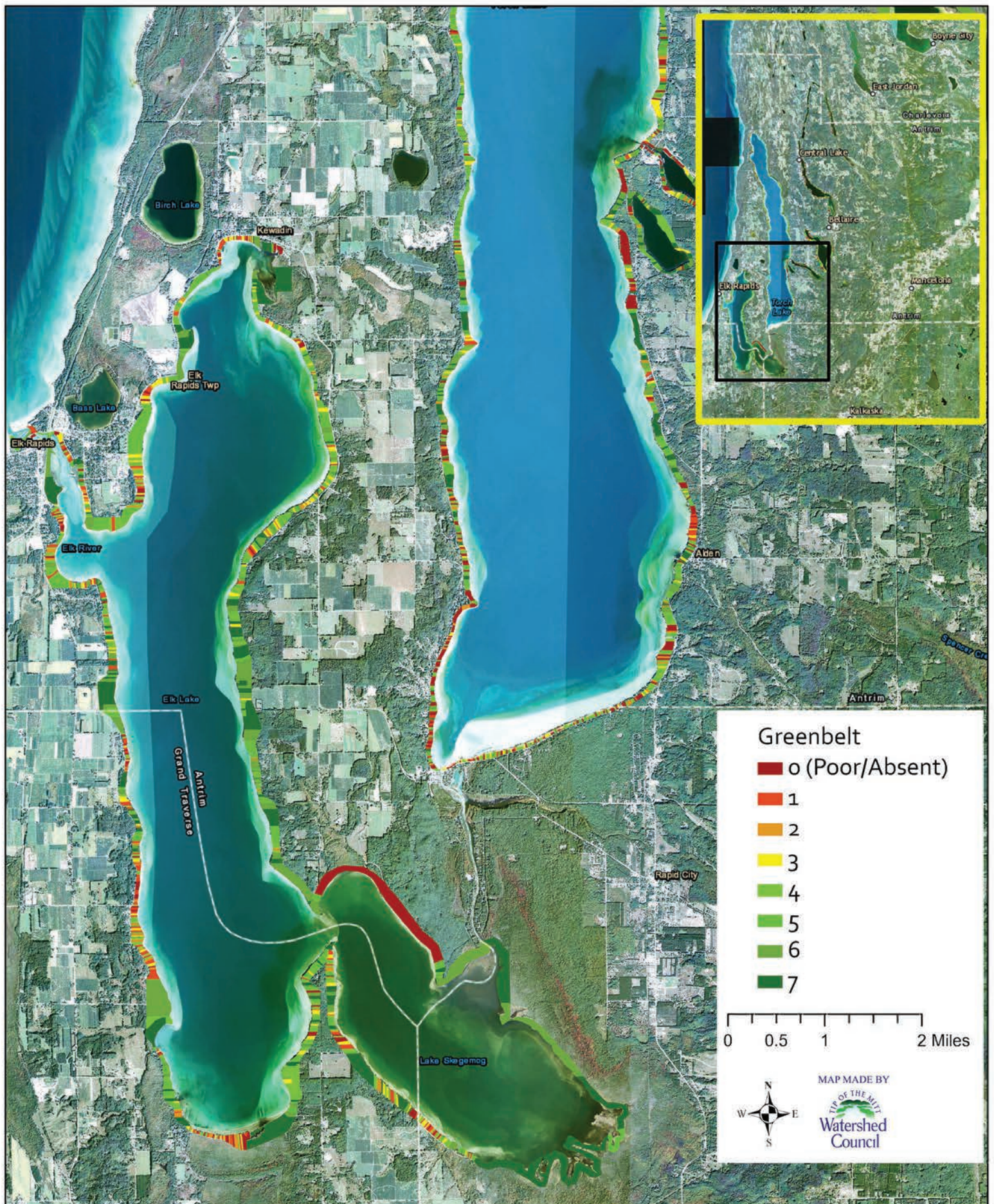
15 Lakes Surveyed

Beals Lake
Scotts Lake
Six Mile Lake
St. Clair Lake
Ellsworth Lake
Wilson Lake
Ben-way Lake
Hanley Lake
Intermediate Lake
Lake Bellaire
Clam Lake
Thayer Lake
Torch Lake
Lake Skegemog
Elk Lake



Cladophora on the shoreline of Torch Lake.

Elk-Skegemog and South Torch Lake Shoreline Survey





WATERSHED ACTION

Volunteer Experience

Our volunteer program, Watershed Action Volunteer Experience (WAVE), provides technical and financial support for water resource projects to groups of volunteers. Many teams have successfully completed their projects over the summer and here are their results:

Charlevoix County

Charlevoix County teams focused their efforts on education of all kinds. Between the Boyne Valley Lions Club and Raydernators/Boy Scout Troop #11, hundreds of storm drains were marked in East Jordan, Boyne City, and Charlevoix. The markers will serve as a reminder that any pollutants that enter the storm drains end up in local waterways. Friends of the Boyne River installed one large and four small interpretive signs at the Boyne River Nature Area. The signs will educate trail users on the benefits of wetlands and native plants. Friends of the Boyne River also worked with the Little Traverse Bay Bands of Odawa Indians and Inhabitect, LLC. to restore eroded areas of the Boyne River near Dam Road. Lake Charlevoix Association installed two large interpretive signs to explain the benefits of their shoreline demonstration greenbelt in Boyne City. They also produced informational cards including contacts for local landscapers and planting suggestions for shoreline projects.



Raydernators/Boy Scout Troop #11



Friends of the Boyne River



Boyne Valley Lions Club



Lake Charlevoix Association

Cheboygan County

Black Lake Preservation Society hosted two invasive species "blitzes" to educate landowners about invasive species. Their volunteer corps will use WAVE-funded education materials to help raise awareness and coordinate treatments for invasive species.

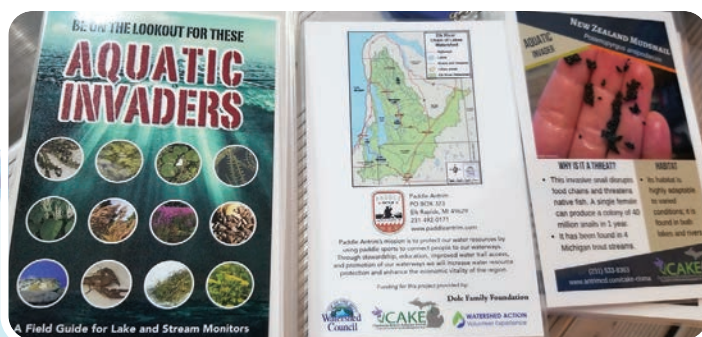
These teams were funded by the Charlevoix County Community Foundation, Dole Family Foundation, Frey Family Foundation, and Wireless Zone for Giving.

Antrim County

Paddle Antrim hosted one of the most successful MI Paddle Stewards workshops in Michigan on July 29. The workshop educated participants on how to identify invasive species. WAVE funds were used to print invasive species identification cards to aid volunteer paddlers in their detection efforts along the Elk River Chain of Lakes. This project is a great example of how local resources and state-wide efforts can work together.

Birch Lake Association's Watershed Action Volunteer Experience project came to fruition when 14 volunteers made light work of shoreline protection at Birch Lake Roadside Park in Antrim County. They installed nearly 100 feet of coir logs (coconut fiber logs that protect the shoreline) and planted a variety of shore-loving plants. The project will reduce erosion on Birch Lake and enhance habitat with native plants.

Thanks for generous donations of materials and tools from Steur Excavating, Antrim Conservation District, and North Shore Lawn Works. Thanks to Roast and Toast for powering our day and Plath's Meats for lunch. Thank you volunteers for your efforts over the past year!



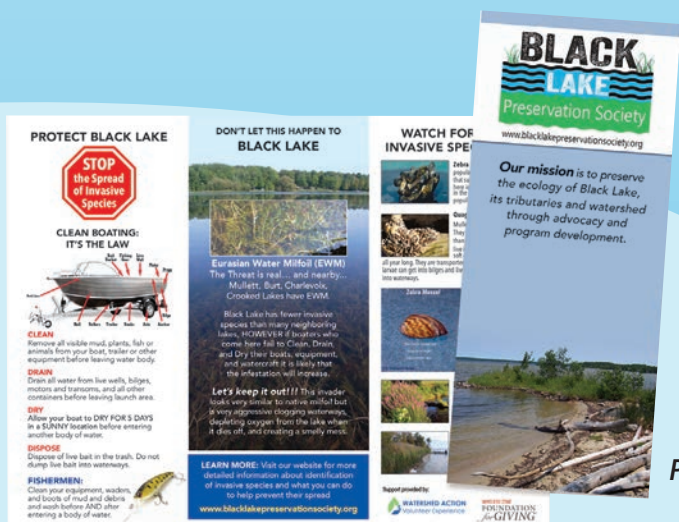
Paddle Antrim



Birch Lake Association



*Black Lake
Preservation Society*





Caroline teaching about invasive species during Waganakising Bay Day.



15th Bear River Cleanup group photo.

2019 Summer



Board member Tom Darnton helping at the water chemistry station during Students Experience Lake Charlevoix.



Staff and interns during the Watershed Council's 40th Anniversary Gala celebration.

Knute Nadelhoffer, Mark Paddock, Kieran Fleming, and Gail Gruenwald at the Mark Paddock celebration dinner at the University of Michigan Biological station.





A truck load of trash collected from the Bear River.



Two happy Bear River Cleanup volunteers.

Events

Watershed Council staff and interns enjoyed a raft trip down the Sturgeon River this August to celebrate another summer of great work!



Honorary staff member Simon helping out at the setup for the Whale of a Sale.



HEALING THE BEAR



2019 BEAR RIVER CLEANUP

Celebrating 15 Years of the Bear River Cleanup

In 2000, the Tip of the Mitt Watershed Council, and numerous other concerned citizens and community partners, created a project to restore the Bear River to its natural glory: "Healing the Bear." Our goal was to remedy the River of its historic degradation and protect it into the future. Since its inaugural year, the Watershed Council has continued to host a river cleanup on an annual to biannual basis. This year, the "Healing the Bear" River Cleanup celebrated its 15th year! Even after all this time, we are shocked by the amount of debris, trash, and recyclables that we and our many dedicated volunteers still find in the River. In addition to joining us for future cleanups, we hope you will help us spread the word that the continued use of the River (and any other waterbody) as a dumping grounds needs to stop. Removing the trash and debris is vital, but it is more important to prevent additional trash from entering the River.

We would like to thank the many volunteers who joined us for the Bear River Cleanup this year, as well as thank our supporters and sponsors who made this event possible. Over 80 volunteers participated in the 2019 Cleanup. Because of our sponsors, we were able to provide t-shirts for all of our volunteers, fresh fruit and coffee for breakfast, and a picnic lunch. The sponsors of the 2019 Cleanup included: Grain Train Natural Food Markets, Meijer, Oleson's, Odawa Casino, Petoskey Plastics, Bearcub Outfitters, Plath's Meats, Emmet County Recycling, the City of Petoskey, and the Great Lakes Commission.

Increasing Capacity for Coastal Resilience and Green Infrastructure

Tip of the Mitt Watershed Council is excited to announce a new project, *Lake Charlevoix Communities: Increasing Capacity for Coastal Resilience*. The project is made possible through a grant from the Coastal Management Program, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, and the National Oceanic and Atmospheric Administration. The Watershed Council will partner with Dr. Don Carpenter of Drummond Carpenter, PLLC, along with the cities of Boyne City, Charlevoix, and East Jordan to implement the project. Work will commence this fall.

The project will assess opportunities for integrating green stormwater infrastructure (GSI) with existing gray stormwater infrastructure in the three Lake Charlevoix communities. Gray stormwater infrastructure is the traditional type of infrastructure that relies upon pipes, ditches, and pumps, whereas GSI strives to protect, restore or mimic the natural water cycle as a means to manage stormwater. Combining GSI with gray infrastructure can provide enhanced treatment of stormwater. This project brings GSI experts, city staff, and community members

together to better understand the value of GSI and identify priority locations for future implementation. Community engagement sessions will take place in Boyne City, Charlevoix, and East Jordan. The project will ultimately result in preliminary GSI design plans and cost estimates for each municipality. These plans will guide future water quality protection efforts and position the communities to move forward with GSI for the benefit of Lake Charlevoix.

The Watershed Council was also awarded a Great Lakes Emerging Champions Mini-Grant from the Great Lakes Commission. The project will focus on overcoming barriers to GSI in the City of Cheboygan by holding educational workshops and conducting small hands-on demonstrations in the community. As a grant recipient, the Watershed Council gains access to a mentor to help the City of Cheboygan overcome GSI challenges. Claire Schwartz of Fishbeck, Thompson, Carr & Huber, Inc. of Grand Rapids will be lending her expertise to the project.

Thank You For Your Support

40th Anniversary Gala Auction Donors:

Alpine Chocolat Haus, Bahnhof Sport Petoskey, Elijah Baker, Elaine Ballou, Barrel Back Restaurant, Bay Harbor Golf Club, Bearcub Outfitters, Beaver Island Boat Company, Big Bear Adventures, Birchwood Farms Golf & Country Club Association, Boyne Country Provisions, Boyne Highlands Resort, Boyne Mountain Resort, Boyne Watersports, Jennifer Buchanan, Paula and Joe Buckman, Cafe Sante, Castle Farms, Cheboygan Brewing Company, Crooked Vine Vineyard and Winery, Kate Cwikiel, Drost's Chocolates, Ethanology Distillation, Kathleen Glass, The Grand Hotel, Gurney's Bottle Shop, Harbor Point Golf Club, Harbor Springs IGA, Harbor Yoga, Harwood Gold, Hotel Walloon, Inn at Bay Harbor, Irish Boat Shop, Jordan Valley Outfitters, Dani Knoph and Good Hart Artist Residency, Lake Art, Latitude 45 Bicycles and Fitness, Laura Holmes Photography, Lavender Hill Farm, Little Traverse Bay Golf Club Restaurant/Bar, Gary Luebke, Mushroom House Tours, My Sister's Bake Shop, Nirvana Organic Spa, North Country Cycle Sport, North Woods Yoga, Nub's Nob Ski Area, Chelsea Olivarez at Bel Fiore A Hair Studio, Outfitter of Harbor Springs, Paddles & Pedals, LLC, Petoskey Bay View Country Club, Petoskey Cheese, Pier M33 On The Cheboygan, Pond Hill Farm, Red Mesa Grill, Schulman Paddleworks, Secrets on Main, Shepler's Mackinac Island Ferry, Short's Brewing Company, Stafford's Hospitality, Inc., Symons General Store, Teddy Griffin's Road House, Tom's Mom's Cookies, Toski Sands Market and Wine Shop, Ugly Anne Boat Tours, Vernales Restaurant, Walgreens (US 131 & US 31), Walloon Lake Winery, Walmart Supercenter #2417, WaterFire Vineyards, The Yoga Cave, Yoga Roots.

Thank you to Paula Buckman for helping to organize the Gala Auction.

Bear River Cleanup Sponsors:

Grain Train Natural Food Markets, Meijer, Oleson's, Odawa Casino, Petoskey Plastics, Bearcub Outfitters, Plath's Meats, Emmet County Recycling, the City of Petoskey, and the Great Lakes Commission.

Summer Interns:

A huge thank you to our three summer interns Alex, Caleb, and Garrett for helping us complete necessary field work and data sorting. Also, an additional thank you to Garrett for helping with policy work.



Welcome New Members!

James and Patricia Aikin
Mr. and Mrs. Donald I. Atkinson
Keith and Sandy Bailey
Rob and Barb Bakotich
Susan Bayless
Mark and Helen Bierley
Mr. and Mrs. Robert Boch
Nancy Boynton
Richard Brodhead and
Christine Kuchta Brodhead
Carolyn Anne Burke
Mr. and Mrs. John Campbell
Mrs. Tracy Christopherson
Mr. and Mrs. Gary Cofer
Coldwell Banker Fairbairn Realty
Mr. and Mrs. Donald Cooper
Mr. and Mrs. Raymond D. Cooper
Jim and Hettie Cope
Mr. and Mrs. Richard F. Corrington Jr.
Rick Cullman
Patricia H. and John E. Curtis
Dr. and Mrs. Charles E. Decamp
Ken Hinton and Nancy Devon
Mr. and Mrs. John Duffey
Jim Edelman
Barbara J. Elliott
Daniel and Stephanie Ferris
Rhondi and Robert Feucht
Mr. James Fisher
Ms. Darleen Flaherty
Ingrid Flemming
Mr. Martin E. Flynn

Michael and Delene Franchi
Rick A. Franz
Global Impact
Thomas and Martha Gotshall
George and Lisa Grobar
Robert and Jan Grupp
Maryanne Hallen
Mr. and Mrs. Bruce A. Herbert
Carmen Ventocilla and Todd Hickox
Dr. and Mrs. Ervin Hire
Bob and Linda Hoff
Mr. and Mrs. James Johnson
Cecelia Johnston
Jim D. Jorgensen
Mr. and Mrs. Edward Keller
Daniel Klenczar and
Linda Kortesoja Klenczar
Mr. Jack E. Levy
Mr. and Mrs. Robert J. Long
Mr. and Mrs. William Loughrey
Mr. and Mrs. Thomas W. Lyon
Mr. Stephen H. Madigan
Jeff and Paula Malak
Mr. and Mrs. James Malpass
David N. and Mary K. McAuslan
James and Joanne McCullough
Ms. Linda H. Miller
Mr. and Mrs. Ronald Miller
Dr. Rodney Tabaczynski and
Mrs. Dinah Payne
Mr. and Mrs. Bob Pegler
Mr. and Mrs. James K. Perrin

Tony Pitts
Mr. and Mrs. Larry E. Potter
William and Sandra Powel
Mr. Kenneth S. Price
Marilyn Randall
Dr. and Mrs. Paul W. Reed
Mr. and Mrs. Walter Reynolds
Mr. and Mrs. Richard Robrahn
Bruce and Nancy Romant
Robert Schwert
Mr. and Mrs. Richard Seibert
Mr. and Mrs. Harold L. Sells
Mr. John D. Shafer
Mary Ellen Sheridan
Mindy Salzberg-Siegel and Harry Siegel
Joseph and Jill Skornicka
Barbara A. Smearman
Mr. and Mrs. Stafford C. Smith
Mr. and Mrs. Keith M. Stephens
Ruth Ann Stice
Mr. and Mrs. Alan R. Thompson
Paul L. Tripp
Rick and Michelle Tromble
Michael Turisk
Mr. Andrew F. Valenti
Larry and Karen White
Dena Wirt
Mr. and Mrs. Doug Woodhouse
John P. and Stacy Q. Wright
Mr. and Mrs. Charles F. Zimmer

New members as of 06/12/2019 – 09/30/2019

Tribute Gifts

In Honor of...

Gail Gruenwald
*Great Lakes Grand
Banks Association*

Jennifer McKay
Mr. and Mrs. Roland J. Watts

In Memory of:

Fred Otto
Lucy Bates Byers
Mary Pair
East Burt Lake Association

Peter Tropper
Darlene Wade

Nancy Lepley
Elaine and Bowden Brown

Give a Year End Gift Through a QCD

Are you 70 ½ or older and have an IRA?

Donate to the Watershed Council this year end and get a tax break without itemizing your deductions. After you turn 70 ½, you can transfer up to \$100,000 directly from your IRA to your favorite charity each year. A QCD (Qualified Charitable Deduction), counts toward your RMD (Required Minimum Distribution). The amount that is contributed through the QCD does not count towards your adjusted gross income. This strategy works now that fewer people can itemize their deductions and won't get a tax break for their charitable gifts.

You can make the transfer to more than one charitable organization, but not to donor-advised funds. The transfer from the IRA must be made directly from the IRA to the charity to count as a QCD – you can't withdraw the money first. Contact your IRA administrator for the procedure for making this transfer. Most will send the money directly to the charity. You need to let the Watershed Council know that you are sending the money from your IRA, so that we can send you a written confirmation, which you need for your next tax filing.

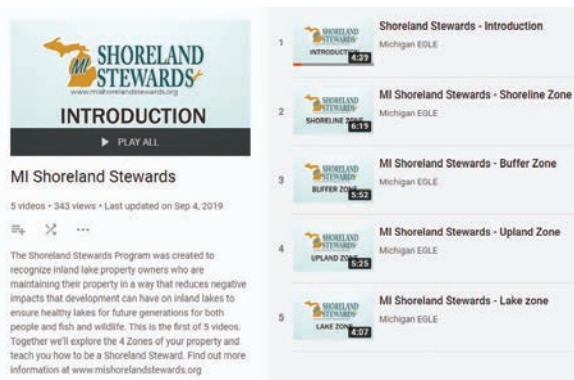
Thank you for considering a QCD to the Watershed Council this holiday season. Northern Michigan waters will benefit from your gift!

Submitted by Rick Brandi, Treasurer, Watershed Council Board of Directors



New Video Series

A new video series is available for viewing and sharing as part of the Michigan Shoreland Stewards (MiSS) program. The series is intended to help shoreland property owners understand the four shoreland zones: upland, buffer, shoreline, and lake. To learn more about the MiSS program and to view the video series, visit: www.mishorelinepartnership.org.



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This newsletter
contains information
worth sharing.

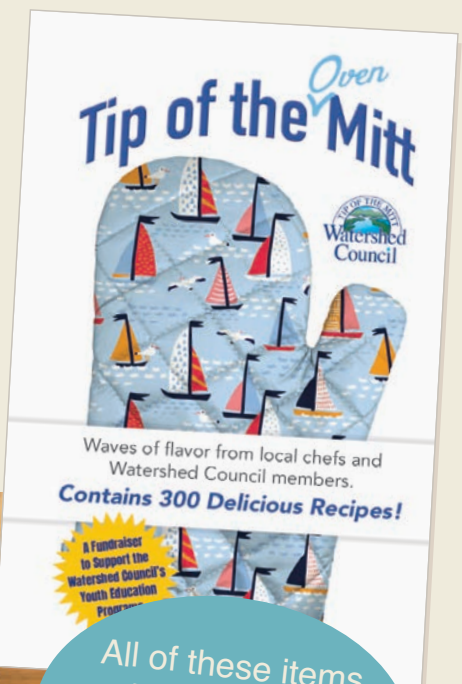
When you're done
reading it, don't
throw it out.

Pass it on!

ADDRESS SERVICE REQUESTED

Support The Watershed Council Through Gift Giving

Are you looking for a delicious recipe for a family get-together? Look no further than the Tip of the Oven Mitt cookbook. Compiled in this cookbook are 300 of the most delicious food options offered by your favorite Northern Michigan restaurants. Now you can enjoy your favorite night out, at home! The cookbook costs \$25.00. Finish off your favorite Northern Michigan recipe with a glass of wine in the Watershed Council's stemless 40th anniversary wine glass. For just \$8.00, you can help protect Northern Michigan's waters while enjoying a glass of pinot or chardonnay. In addition to the cookbook and wine glasses, we also have a few other products on our website for sale. Represent your favorite Watershed Council with our limited edition Tip of the Mitt Watershed Council trucker hat or maybe toss a Watershed Council sticker on your favorite water bottle or laptop. We also have a variety of unique notecards for sale that will help you express your appreciation for all those special people in your life. Check out all these items on our website at www.watershedcouncil.org/shop.



All of these items
make great holiday
or thank you
gifts!