

THE SEPTIC QUESTION PROJECT

Final Report for Lake Charlevoix Watershed

The Septic Question Project is a partnership between the Health Department of Northwest Michigan and Tip of the Mitt Watershed Council, funded by the Michigan Department of Environmental Quality. The goal of the project is to closely examine septic system policies for the entire Lake Charlevoix Watershed, identify any problems, and examine potential ways to solve them. The committee published a final report for decision makers that includes specific policy options to consider.

Most on-site septic systems in the State of Michigan are never inspected again once installed. Michigan is the only state in the nation without uniform standards for how on-site septic systems are sited, designed, built, installed, and maintained. Public health officials believe reported septic system failures represent only a fraction of the total number of failures statewide and many go undetected or remain unreported for years. In most counties in Michigan, after a system is built, the counties do not follow up to make sure those systems are functioning properly. Because this important follow-up is non-existent in most places, it creates a potential threat to public health and water resources.

To further support this point, in June 2015, new research was published in the Proceedings of the National Academy of Sciences of the United States of America. The study, conducted by Michigan State University, used microbial source-tracking tools to show that pollution arising from septic system discharges is likely much more severe than previously realized. Results suggest human fecal contamination is affecting 100% of the studied river systems in Michigan's Lower Peninsula.

The final report includes a simple analysis that demonstrates that potentially one third of the aging septic systems in Charlevoix County have not been replaced. Considering that typical septic systems usually have a lifespan of 25 to 30 years, those older systems still in use may have already failed or could be on the verge of failing soon. We want to see policy changes that require additional oversight to ensure failing systems are discovered before they fail. Our research and data collection point to warning signs that we can take into account, in support of making changes to oversight requirements.

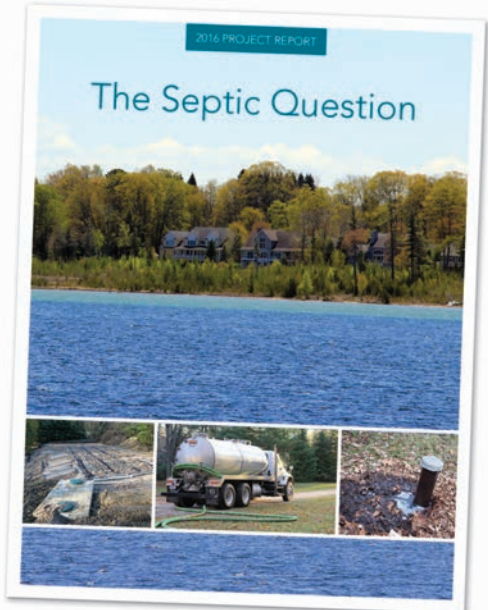
The final report is being distributed to all local officials in Charlevoix County and we will use an online survey to seek their feedback. In early August, we will sponsor an event and seek public comment. We are also hosting a breakfast for septic haulers to get their feedback. Upon completion of these events and compilation of feedback, we will meet with the County Board of Supervisors to continue the discussion and encourage action tailored to specific needs in the Watershed.

Our intent is to make a change that is positive, not punitive or burdensome for citizens, businesses, and local governments. We researched what is working in other areas of Michigan and the United States and interviewed individuals in charge of implementing those policies. The report summarizes each policy option, provides interview responses, and outlines the advantages and disadvantages for each of the following:

- Maintain the Status Quo
- Time of Transfer Inspection Ordinance
- Mandatory Pumping Ordinance
- Mandatory Inspection Ordinance

We also address the use of a pilot program, where appropriate, and overlay districts. For a copy of the report, contact Grenetta Thomassey at 231-347-1181 ext. 118 or email grenetta@watershedcouncil.org.

The Septic Question Report and the surveys for citizens and local officials are available online at:
www.watershedcouncil.org/septic-systems





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Reflections From Our Executive Director

One of the challenges for any organization or business is to communicate accomplishments and information with their audience. This is a particularly difficult task for an organization like the Watershed Council. The mission of protecting water may sound simple enough, but the work we do to accomplish this mission is diverse and somewhat complicated. As you can see, this newsletter is packed with articles retelling our work from the past several months. This work varies from water quality monitoring and research, to fighting against Great Lakes diversions and fish farming, to encouraging natural shorelines. What do they all have in common? Collectively, these individual programs combine to further our purpose – to protect the environmental quality of Northern Michigan's waters for current and future generations.



Gail Gruenwald
Executive Director

Our hope is that this newsletter conveys the value of our work to you. We write about activities and topics we feel are important to those that value Northern Michigan's waters. We hope to convey how our work benefits our waters and your interests, and we try to direct you to ways that you can get involved with us in protecting these resources.

Recognizing that your lives are likely as complicated as ours we realize that absorbing, understanding, and then engaging in our work may be a challenge. Our hope is that we tell our story in a way that is meaningful and helps you to understand these complicated issues. We also hope that you take advantage of our other communication tools – our websites, press statements, and the dozens of publications available to you.

Why is this important? Because you, as members, become the messengers of this information. You become the ambassadors for the Watershed Council helping to further our mission and protect the waters you care about. You become the force that helps to move these ideas forward in the eyes of the citizenry and in government.

We value your input on this newsletter and any other information you see from the Watershed Council. Please provide us with your feedback so we can continue to improve our communications programs. And as always, if something within these pages catches your attention and you want to engage further, give us a call. We'd love to hear from you!

Upcoming POD Collection Events

CHARLEVOIX COUNTY

Saturday, September 10, 2016
9:00am-1:00pm
Boyne City Road Commission Garage.
Just east of Boyne City Public School
football field on M-75.

ANTRIM COUNTY

Saturday, September 17, 2016
10:00am-1:00pm
In front of the Antrim County Courthouse
205 E. Cayuga Street, Bellaire, MI

EMMET COUNTY

Wednesday, October 12, 2016
7:00am-4:00pm
McLaren Northern Michigan, Petoskey Campus
416 Connable Ave, Petoskey, MI 49770
Use hospital circle drive off Mitchell Street.

CHEBOYGAN COUNTY

Wednesday, October 19, 2016
10:00am – 2:00pm
McLaren Northern Michigan, Cheboygan
Campus. Use entrance north of the
Emergency Department
748 S Main St, Cheboygan, MI 49721

For information about what is accepted and how to prepare to drop off your unwanted meds, visit www.pillsinthepod.com.



Watershed Council Awarded \$641,000 to Battle Zebra and Quagga Mussels

Starting in the early 1990's, Michiganders watched powerless as a shelled scourge moved inland from the Great Lakes. Soon thereafter, boat ramps were clogged, beaches were blanketed, and lake ecosystems were radically changed. Since then, our inland lakes have struggled to adapt to life with this ecological burden. The scourge's identity? The zebra mussel (*Dreissina polymorpha*), a small mussel native to the Black Sea.

While zebra mussels are one of the best-known aquatic invasive species in the Great Lakes region, there is a relatively new invader, the quagga mussel (*Dreissena rostriformis bugensis*), which is also affecting the health of our lakes. Once a rare find, quagga mussels are now the dominant invasive mussels. Unfortunately, both of these nonnative mussels have had a devastating impact on their kin, the native *Unionid* mussels. The native mussel population has declined by 95% not only due to competition for food, but also because the nonnative mussels can colonize the native species' shells, thereby inhibiting life functions.

Among all of this ecological turmoil, there is a glint of hope for restoration. The Watershed Council has been awarded a Great Lakes Restoration Initiative grant to evaluate a new control method for zebra and quagga mussels. The biocontrol product Zequanox® will be applied to three acres of lake bottom in a Northern Michigan lake. Zequanox® has been proven, in both laboratory and lake environments, to selectively control zebra and quagga mussels while posing little threat to other aquatic organisms. Every aspect of the environment, from phytoplankton communities to chemical water quality parameters, will be assessed before, during, and after the treatments. The main objective of the study is to evaluate invasive mussel mortality and native mussel recovery in areas treated with Zequanox®.

Zequanox® is not a chemical; rather it is composed of dead bacterial cells. The common soil bacterium *Pseudomonas fluorescens* is grown in Bangor, Michigan by Marrone Bio Innovations. The product is desiccated prior to shipment, which kills the bacteria. Once the bacteria are ingested by zebra or quagga mussels, they interfere with the mussels' digestive processes, eventually killing them.

Zequanox® is not a chemical; rather it is composed of dead bacterial cells.

In the industrial sector, Zequanox® has been used since its approval by the U.S. Environmental Protection Agency (EPA) in 2012 to clear zebra mussel buildup from intake pipes and other infrastructure. In 2014, the EPA approved an expanded label that included use in open waters. To date, no open water applications have occurred, although some studies have used curtain barriers to evaluate the product in lakes. The Watershed Council's upcoming project will take this control method to the next level, integrating control into the lake ecosystem. Although the project area is small when compared to lake size, this research will contribute to the body of knowledge surrounding invasive mussel control, moving us one step closer to a day when entire lake ecosystems can be restored.

The project will be conducted in partnership with the United States Geologic Survey, Michigan Natural Features Inventory, local lake associations, and the University of Michigan Biological Station, along with other organizations.

Waukesha Diversion Approved

On June 21, the Great Lakes – St. Lawrence River Basin Water Resources Council (Council), representing the governors of the eight Great Lakes states, approved the City of Waukesha's request to divert Great Lakes water. Waukesha is the first community located entirely outside the Great Lakes Basin to receive a diversion of Great Lakes water since the Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact) became federal law in 2008.

Under the Compact, all diversions of Great Lakes water are banned. An exemption to this ban may be requested only if the community shows it lacks a viable, safe, and sustainable water supply. The City of Waukesha has long relied on a deep aquifer groundwater supply that contains high levels of radium, a naturally occurring radioactive carcinogen, which exceeds federal health standards.

The Council approval contains a series of conditions including:

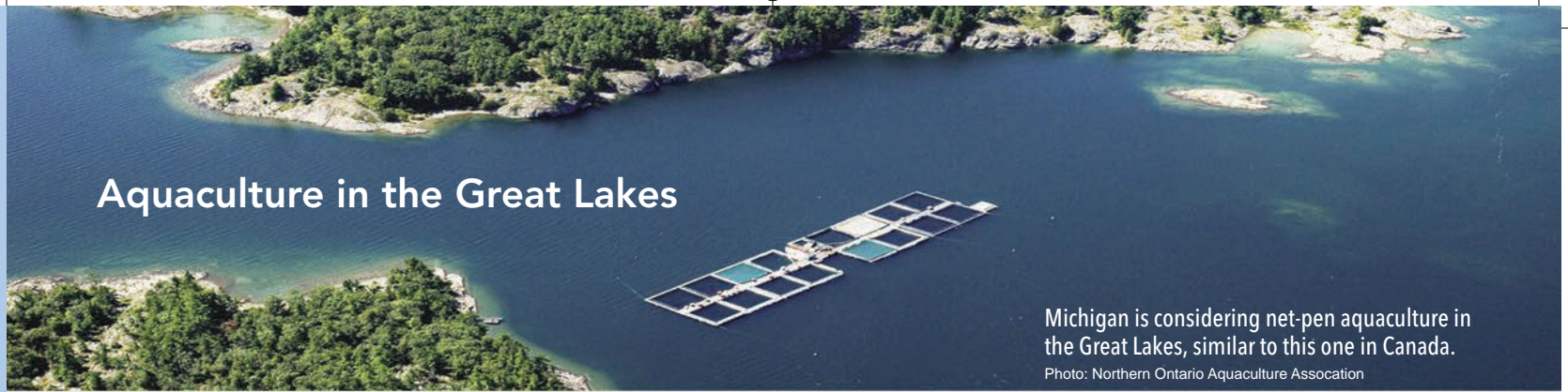
- reducing the amount of water to 8.2 million gallons per day (MGD) as opposed to the proposed 10.1 MGD;
- cutting the area that Waukesha could serve with Lake Michigan water in almost half, limiting it to the city's current service area and town islands;
- continuing implementation and enforcement of Waukesha's water conservation and efficiency plan with the goal of a 10 percent demand reduction;
- implementing a comprehensive pharmaceutical and personal care products recycling program;
- submitting public annual reports that document the daily, monthly, and annual amounts of water diverted and returned to Lake Michigan; and
- strengthening the enforcement capability of any governor, or the Council, to take actions necessary to compel compliance if Waukesha or the Wisconsin Department

of Natural Resources fail to carry out the conditions placed on the proposal. This includes the ability of any governor to request an audit and inspection of how this diversion is being managed and enforced.

We are pleased that the original diversion application was significantly narrowed. We have no doubt that the extent of public engagement across the Great Lakes states, together with the advocacy efforts of the Watershed Council and our partners, contributed to improvements in the diversion proposal ultimately approved by the Council.

We had hoped the Council would further strengthen some conditions to ensure compliance with the rigorous requirements and underlying principles of the Compact. As a result, Great Lakes advocates will need to be vigilant in making sure that the City of Waukesha and the State of Wisconsin honor the terms of the agreement. Effective implementation of the Great Lakes Compact will hinge on rigorous enforcement of the conditions approved. We expect that the Council and its members will act promptly if Waukesha and Wisconsin do not meet every requirement imposed by the Council.

This is the initial diversion request since the Compact was adopted in 2008. As such, we have learned some valuable lessons, particularly regarding the process. We discovered it was very difficult for the public to participate in the regional process and there was no meaningful opportunity for the public to comment after conditions and revisions were proposed. We applaud the State of Michigan for their leadership, as one of the few entities that conducted their own technical review of the application, and for conducting their own public engagement process that encouraged participation by the citizens and Tribal governments of Michigan. Moving forward, we strongly encourage amendments to the Compact review and decision-making process to include improved opportunities for the public to participate in a meaningful and timely way throughout the entire process.



Aquaculture in the Great Lakes

Michigan is considering net-pen aquaculture in the Great Lakes, similar to this one in Canada.

Photo: Northern Ontario Aquaculture Association

This spring, the State of Michigan Quality of Life agencies issued a recommendation to prohibit commercial fish farming operations in the Great Lakes because of several environmental and economic risks.

The Watershed Council applauds this recommendation. We previously advocated against establishing privately owned net-pen operations in public waters of the Great Lakes due to concerns with fish waste and other discharge, disease, as well as the effect escapees can have on the native fish population.

In 2014, the State of Michigan received two proposals to establish privately owned net-pen operations in Lakes Huron and Michigan. Net-pen aquaculture, also known as fish farming, is the practice of raising fish in an underwater net or structure that serves as a pen. There are currently no commercial net-pen aquaculture operations in Michigan's open waters of the Great Lakes. To determine how to proceed and respond to the proposals, a scientific advisory panel was established by the Michigan Departments of Natural Resources (MDNR), Environmental Quality (MDEQ), and Agriculture and Rural Development (MDARD). The panel evaluated the scientific, environmental, economic, and regulatory considerations regarding potential Great Lakes aquaculture.

Based upon the reports from the scientific panel, as well as stakeholder input, the Michigan Quality of Life agencies (MDNR, MDEQ, MDARD) recommended against pursuing commercial net-pen aquaculture in the Great Lakes at this time. The agencies felt that commercial net-pen aquaculture posed significant risks to fishery management and other types of recreation and tourism. The agencies also stated that the State of Michigan lacks both the regulatory authority and funding to implement a net-pen aquaculture program that would protect the Great Lakes.

The recommendation by the State agencies can be considered a win for the Great Lakes. However, it is just a recommendation. It is crucial that the State Legislature and Governor Snyder work to pass a ban that will keep these fish farms out of our Great Lakes for good.

Several bills currently sit in the Michigan House of Representatives and Senate that would allow the practice in the Great Lakes if passed into law. Additional bills that would ban the practice in the Great Lakes also sit in both chambers. We are calling on the Legislature to act on the bills to prohibit net-pen operations in the Great Lakes so that the administration's policy is clearly and unambiguously incorporated into state law.

AQUAVIST NETWORK

Watershed Management Plans Update

In prior newsletters, we told you about the creation of two brand new cooperative watershed management plans in our local service area. Both are in Cheboygan County, and new Advisory Committees have formed around these efforts.

The 2016 Duncan and Grass Bays Watershed Management Plan was written after two years of fieldwork and local focus groups were conducted to collect information about the Watershed and form the foundation of the new Plan. Additionally, the Duncan and Grass Bays Watershed Plan Advisory Committee met four times to review various versions of the Plan and submit comments and feedback. The formal partner list was also finalized, giving committee members the opportunity to be listed as formal partners in the new Plan and also on future publications related to implementation of

the Plan and projects. Being listed as a formal partner is helpful in the funding process and improves chances to receive grant funding for Plan implementation projects.

This new Plan was recently submitted to the Michigan Department of Environmental Quality (MDEQ) for approval, which will also include approval from the U.S. Environmental Protection Agency.

The next new plan that will be submitted for approval is for the Burt Lake Watershed, which includes the Sturgeon, Crooked, and Maple Rivers. A new Advisory Committee to assist with plan development for this Watershed has met twice. The Committee has had the opportunity to answer a survey about the new Plan, which is being written now. We will hold at least one more meeting prior to submitting this Plan for approval, and we will keep you posted about our progress.

For more information about Watershed Management Plan Advisory Committees, please contact Grenetta Thomassey at 231-347-118 ext. 118 or grenetta@watershedcouncil.org.

OUR POSITION

Crude Oil Transportation in the Great Lakes

In March of 2016, the Tip of the Mitt Watershed Council Board of Directors adopted a policy position regarding the transport of crude oil within the Great Lakes. Our goal is for there to be no transportation of crude oil in, on, or under the Great Lakes. To achieve this goal, the Watershed Council is advocating for a prohibition on the transportation of crude oil by vessel on the Great Lakes and for the decommissioning of Line 5, owned and operated by Enbridge Energy. Whether by pipeline or vessel, an oil spill in the Great Lakes would be devastating to Michigan's natural resources, the health of our citizens, and our economy.

Six American and six Canadian refineries operate in the Great Lakes Basin and there are 25 refineries operating in the eight-state, two-province region. As a result, large quantities of crude oil move into or through the Great Lakes and St. Lawrence River Basin every day. There has been a tremendous increase in crude oil production in recent years, particularly from the Bakken Formation in North Dakota and from oil sands in Alberta, Canada. If we continue to see growth in oil production in North America, there will be more and more pressure to transport crude oil to market. Transporting greater volumes of oil will only serve to increase the risk to the Great Lakes ecosystem.

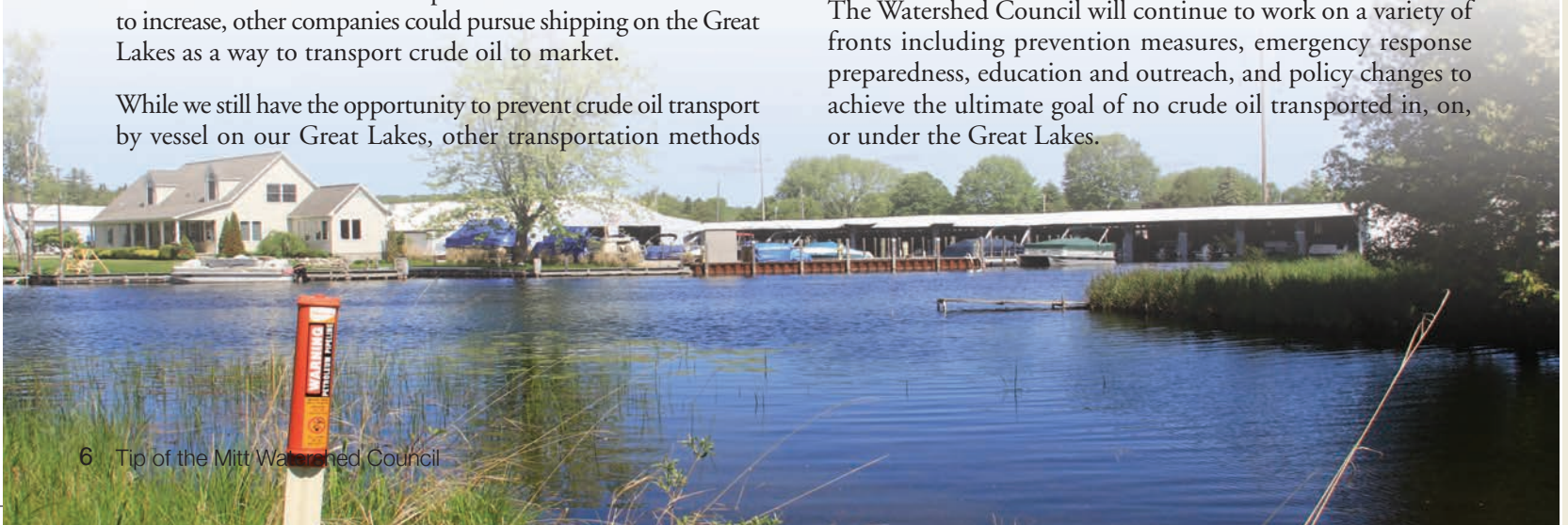
While petroleum products are shipped on the Great Lakes in large quantities, crude oil is not currently transported via vessel in the U.S. portion of the Great Lakes. But that may change. In 2013, a Wisconsin company proposed to establish a facility in western Lake Superior to ship crude oil by barge throughout the Great Lakes to Midwest refineries and markets beyond. While this proposal has been shelved for now, it could be revived later. In 2014, tankers left Canadian ports carrying bitumen (a dense, highly viscous, petroleum-based hydrocarbon that is found in deposits such as oil sands) and traveled down the St. Lawrence River. If domestic production of crude oil continues to increase, other companies could pursue shipping on the Great Lakes as a way to transport crude oil to market.

While we still have the opportunity to prevent crude oil transport by vessel on our Great Lakes, other transportation methods

that pose a risk to our waters are already present. An incident or failure on Line 5 in the Straits of Mackinac is considered to be a low-probability, high-consequence event. That means it does not have a high likelihood of occurring, but if it does occur, the impact can be catastrophic. At this time, the Watershed Council is unable to confirm the structural integrity of Line 5 due to lack of access to information, particularly inline inspection report data. In addition, there is currently limited capability to effectively respond to a failure on Line 5 in Northern Michigan due to a lack of resources, for instance emergency response equipment and personnel, and situational conditions such as being located in the open waters of the Great Lakes. As a result, we believe Line 5 should be decommissioned.

However, recognizing the economic and political realities surrounding Line 5, we acknowledge this will not occur immediately. Therefore, to prevent an oil spill and enhance preparedness capabilities to be able to effectively respond to a rupture or spill, the Watershed Council supports and is also advocating for a number of near-term actions. These include, among many others: an independent analysis of inline inspection data to assess structural integrity of the pipeline; completion of a comprehensive and independent risk assessment and alternative analysis for the portion of Line 5 in the Straits of Mackinac; requiring approval of all spill response plans by the federal and state agencies responsible for responding to a spill; a pipeline water crossing survey to assess the risks of existing pipelines running under the State's rivers, streams, and lakes; and an increase in emergency response capabilities in Northern Michigan including stockpiling of equipment, training, and personnel.

The Watershed Council is working towards these goals through a variety of means including serving on the Michigan Pipeline Safety Advisory Board and Local Emergency Planning Committee, legislative advocacy, working directly with federal, state, and local governments and the pipeline operators, and conducting education and outreach. While we are starting to see results from our work, there is still much more to be done. The Watershed Council will continue to work on a variety of fronts including prevention measures, emergency response preparedness, education and outreach, and policy changes to achieve the ultimate goal of no crude oil transported in, on, or under the Great Lakes.



Enbridge Emergency Response Improvement Announced

Watershed Council staff recently attended a stakeholder briefing hosted by Enbridge to announce upcoming improvements for emergency response to a potential spill on the Line 5 pipeline. Enbridge commissioned a third party to conduct a capability assessment of Enbridge's available emergency response measures in the Straits of Mackinac. Based upon the results of the assessment, Enbridge will be purchasing new equipment specifically designed for containment and recovery of oil in open water and ice. This approximately \$7 million investment in equipment will occur over the course of the next two years.

Time is of the essence in the event of an oil spill. It is imperative to have adequate equipment, along with properly trained personnel, to respond quickly. We have expressed concern over their ability to effectively respond to an oil spill on Line 5 in Northern Michigan due to a lack of resources, such as emergency response equipment and personnel, and situational conditions like being located in the open waters of the Great Lakes. Procurement of this equipment is a positive step forward by Enbridge. We will continue to evaluate response capabilities and work with Enbridge and other emergency responders to ensure we are as prepared as possible with response measures in Northern Michigan.



Enbridge will be purchasing new equipment similar to that shown above specifically designed for containment and recovery of oil in open water and ice. (Photo: AllMaritim)



Michigan Pipeline Safety Advisory Board Update

In 2015, Michigan Governor Rick Snyder issued an executive order creating the 16-member Michigan Pipeline Safety Advisory Board (MPSAB). Watershed Council Policy Director Jennifer McKay serves on the MPSAB representing the environmental community. The board is charged with advising State agencies on matters related to pipeline routing, construction, operation, and maintenance to ensure safety, upkeep, and transparency of issues related to the State's network of pipelines. The Board has met four times. Work to date has focused on two recommendations from the Michigan Pipeline Task Force Report released in July 2015: an independent risk analysis and an independent alternatives analysis for the Line 5 pipeline located in the Straits of Mackinac.

The risk analysis will identify the consequences of a worst-case scenario spill. This information will be used to establish the amount of insurance or financial assurance Enbridge Energy Partners will be required to maintain and to help guide decisions about the future of the pipeline. The alternatives analysis will

comprehensively compare alternatives to the existing pipeline, including constructing a new pipeline, utilizing existing infrastructure, or using other transportation methods such as vessels, tanker trucks, and rail.

The State issued two requests for information and proposals (RFIs) for prospective contractors who are interested in performing the analyses. The Board and members of the public provided input to the agencies in developing the RFIs. The State of Michigan, through the Michigan Agency for Energy, the Michigan Department of Environmental Quality, the Michigan Department of Natural Resources, and the Department of the Attorney General, will be responsible for selecting and overseeing contractors for each analysis.

Watch for more updates over the next year on how the risk and alternatives analyses are progressing, as well as opportunities to comment on the draft reports.

Natural SHORES

Shorelines. No lake is complete without one. All too often shorelines are seen as separate from the lakes they surround. Yet, if you take away the "naturalness" of the shoreline, you are altering much more. Natural shorelines are critical to the lake ecosystem and their vegetation is key.

The grasses, flowering plants, ground covers, shrubs, and trees that grow up to the water's edge and advance into the shallows of the lake provide:

Shade. As water temperatures increase, dissolved oxygen levels decrease. Less dissolved oxygen means the lake cannot support as rich or abundant aquatic life. Shade is important to keep lake water temperatures cool.

Natural Shorelines provide:

Habitat. From the massive white pine that serves as a stately perch for bald eagles, to the bulrushes that break the water's surface and give support to the emerging dragonflies, natural shorelines provide habitat to hundreds of shoreline-dependent species.

Natural shorelines help keep our Northern Michigan lakes:

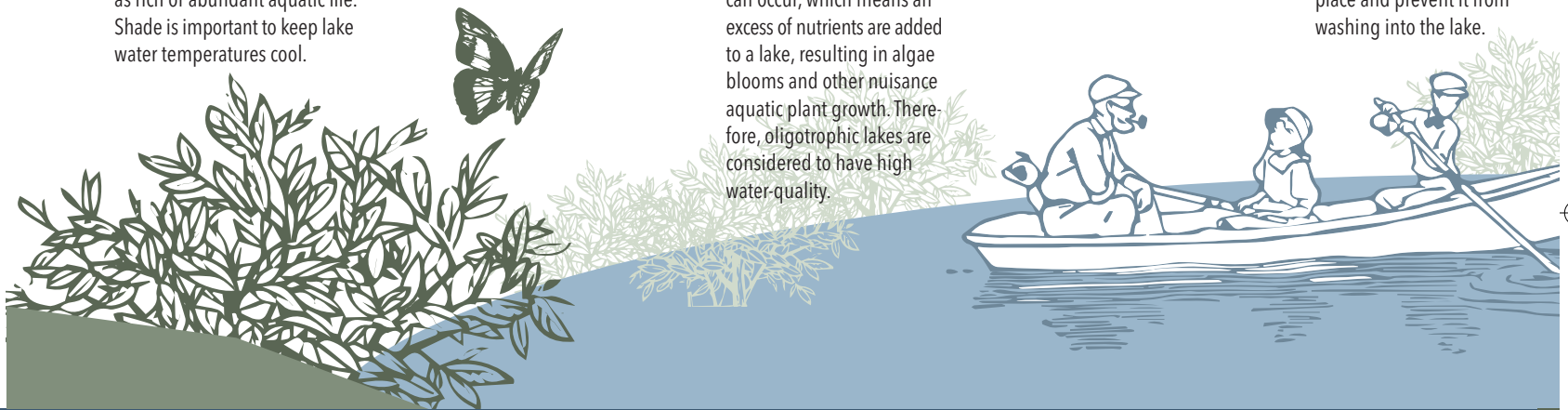
Oligotrophic. Shoreline vegetation both filters and absorbs pollutants such as nutrients and sediments. Without natural shorelines, the process known as 'cultural eutrophication' can occur, which means an excess of nutrients are added to a lake, resulting in algae blooms and other nuisance aquatic plant growth. Therefore, oligotrophic lakes are considered to have high water-quality.

Natural shorelines provide many opportunities for:

Recreation. The nearshore areas provide some of the best spots on the lake for swimming, birdwatching, fishing, kayaking, and nature observation.

Natural shorelines are the best defense against shoreline:

Erosion. The deep roots of native plants are better adapted to living under dynamic conditions. Their complex root structures help to hold the soil in place and prevent it from washing into the lake.



Shoreland Stewards website: Now Live!

After many months of brainstorming, development, and refinement, the Michigan Shoreland Stewards Program website made its debut on April 29th at the Michigan Inland Lakes Convention in Boyne Falls, Michigan. As part of the Michigan Natural Shoreline Partnership (MNSP), the program provides recognition for lakefront property owners (riparians) who are protecting inland lakes through best management practices on their property. Tip of the Mitt Watershed Council, a MNSP partner, played a lead role in spearheading the statewide campaign and worked closely with a group of Northern Michigan's lake associations in the process. We are happy to report that all signs indicate our collective efforts are paying off! Initial feedback from lake associations, inland lake property owners, nonprofit organizations, and resource agencies has been very positive. To date, nine lake associations have registered, and 19 riparians have taken the online survey and received the following Shoreland Stewards levels: 14 gold, 4 silver, and 1 bronze.



Many thanks to the Lake Charlevoix Association, Elk-Skegemog Lake Association, Pickerel-Crooked Lake Association, Mullett Area Preservation Society, Crystal Lake and Watershed Association, and Glen Lake Association for their invaluable contributions to the program.

If you are an inland lake riparian, be sure to check out www.mishorelandstewards.org to learn more.

SHORELINES

Natural shorelines help retain the look and feel of our Northern Michigan:

Landscape. Anyone who has spent time on one of our lakes knows the view: cedar and birch-dominated shorelines. When natural shorelines are replaced with lawn, these scenic vistas are lost.

Natural shorelines provide vital habitat for:

Insects. Many beneficial insects spend their early life cycle stages in the lake. They depend upon the aquatic vegetation in the nearshore areas, submerged logs, leaves that have fallen into the lake, and shoreline plants to thrive and complete their life cycles.

Natural shorelines prevent:

Nuisance Species. Geese and ducks flock to areas where they have a wide-open view and lush green grass to graze on and leave behind their droppings.

Fact: In one week, any adult goose can produce up to 15 pounds of droppings!

Natural shorelines are an essential part of the lake:

Ecosystem. To put it simply, healthy lakes depend upon natural shorelines.

Natural shorelines show that you are a good shoreland:

Steward. By keeping your shoreline natural, you are helping protect our waterways. To learn more about how to protect your lake, visit: www.mishorelandstewards.org

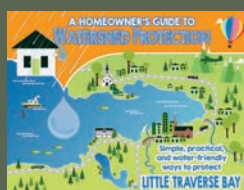


Shoreline Protection Resources

The Watershed Council has a growing collection of informational handouts and reference materials available online and in print at the Freshwater Center. Here are a few highlighted resources specifically for shoreline property owners:

A Homeowner's Guide to Watershed Protection

This 20 page booklet was developed to promote low impact development (LID) strategies for managing stormwater runoff to eliminate pollution entering our local waters. Readers can explore LID options such as rain gardens, green roofs, permeable pavements, greenbelts, bioswales, native plants, and rain barrels. This publication is focused on the Little Traverse Bay Watershed. A version for Lake Charlevoix will be published this fall.



Northern Michigan Native Plants

A perfect pocket guide to take to the nursery or share with your landscaper when planning a greenbelt for your shoreline property.

Visit the Watershed Council website for information about these topics:

Native Plants

<http://www.watershedcouncil.org/native-plants.html>

Low Impact Development

<http://www.watershedcouncil.org/low-impact-development-lid>

Shoreline Restoration

<http://www.watershedcouncil.org/shoreline-restoration.html>

Aquatic Invasive Species Identification

<http://www.watershedcouncil.org/aquatic-invasive-species.html>

The Freshwater Center is open during business hours for self-guided browsing. These resources, as well as many others, are available to download at www.watershedcouncil.org and hard copies are available by stopping by our office or calling 231-347-1181.

CITIZEN SCIENTISTS WANTED!

Help collect important data to measure the health of our streams.

Mark your calendars, tell your neighbors, and recruit your friends! Our Volunteer Stream Monitoring program is in need of volunteers. The next session will begin September 17.

Learn about the various aspects of our stream monitoring program, general macroinvertebrate biology, and the equipment used to collect important data about the health of our local streams. A portion of the training will also focus on invasive species identification. The classroom-style training is followed by a hands-on practicum on the Bear River so volunteers can "get their feet wet" before going into the field.

The following weekend, on September 24, volunteer teams collect a representative sample of the aquatic macroinvertebrate population for later identification and also note general stream conditions. Each team monitors two sites on the same river or stream.

Finally, on October 2, volunteer teams will gather at the Health Education & Science Center Building in Room #335 at North Central Michigan College to sort and identify the aquatic macroinvertebrates that were collected.

Streams are monitored twice a year, in the spring and fall, making this a great volunteer opportunity for people that want to make a big impact but have limited time to volunteer. **We are especially in need of volunteers for the Boyne River, Stover Creek, and Mullett Creek.** For more information about the training, please call 231-347-1181 or email matt@watershedcouncil.org



SAVE THESE DATES!

September 17, 2016
Volunteer Stream Monitoring
TRAINING DAY

9:00am - 2:00pm
Tip of the Mitt Watershed Council office
426 Bay Street, Downtown Petoskey

September 24, 2016
Volunteer Stream Monitoring
FIELD DAY

9:00am - 2:00pm
At various streams within our service area.

October 2, 2016
Volunteer Stream Monitoring
INDOOR IDENTIFICATION DAY

12:00 Noon - 3:00pm
North Central Michigan College,
1515 Howard St., Petoskey
Health Education and Science Building,
Room 325



Welcome Summer 2016 Interns!

This summer we are lucky to have three amazing interns: Brandon Hunt, Michael Ewing, and Abbie Hawley. Brandon and Michael are working on shoreline surveys and water quality monitoring with the Watershed Protection team, and Abbie is assisting our Policy team at meetings and events while gaining insight on environmental issues and legal policy.



Brandon

Brandon attended Michigan State University (MSU) for his undergraduate degree in Environmental Studies and Sustainability with two minors in Geographic Information Systems and Sustainable Agriculture and Food Systems. After speaking with his professor Chris Grobbel, a past Watershed Council employee, he decided an internship with the Watershed Council would be a great way to spend the summer enjoying the beautiful outdoors while simultaneously making a difference in the surrounding community. For Brandon, Northern Michigan is unlike anywhere in the world with its small towns, beautiful water, and open spaces. He hopes to continue working in the natural resources field with conservation or community outreach programs and organizations. Brandon enjoys golfing, hiking, playing soccer, volleyball, Frisbee, and doing pretty much anything else under the sun!

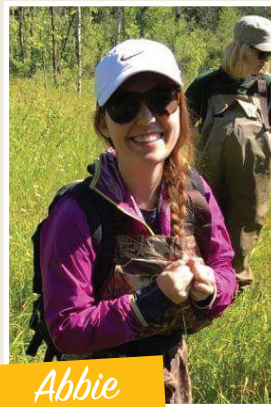
Michael also received his undergraduate degree from MSU in Environmental Sustainability. During his time at school, Michael discovered a desire to help mitigate some of the negative effects human interactions have on the Great Lakes region. Growing up along the shores of Lake Michigan, and thanks to many family adventures, he was inspired to protect and

preserve nature for future generations. Michael hopes to continue expanding his natural knowledge and trying new things in order to find his dream job, one that he will enjoy doing every day. In his free time, Michael loves to play and coach hockey, ride bikes (fast!), play disc golf, ride boards on cement, snow, and water, and anything else that is challenging and outside.



Michael

Abbie attended the University of Michigan for her undergraduate degree in Organizational Studies before continuing her education at Michigan State University College of Law with an emphasis



Abbie

on environmental law and litigation. Abbie grew up in Northern Michigan and has always had an appreciation for the outdoors. She loves to play music, take walks with her 3-year-old husky Odin, and take advantage of the ample opportunities to enjoy and appreciate nature. After finishing law school, Abbie will sit for the bar next summer. She hopes to work in a legal position at a nonprofit either here in Michigan or out west.

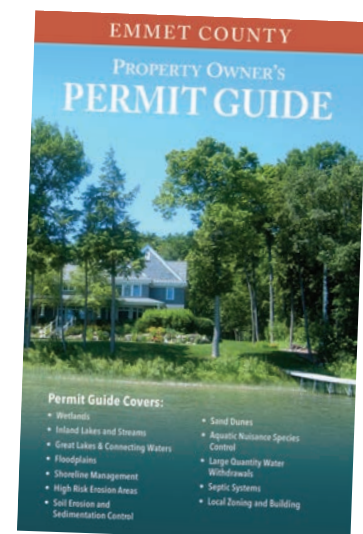
Although Abbie is a Wolverine at heart, we have never had three interns from the same university (let alone an esteemed Michigan university like MSU) all interning at the same time!

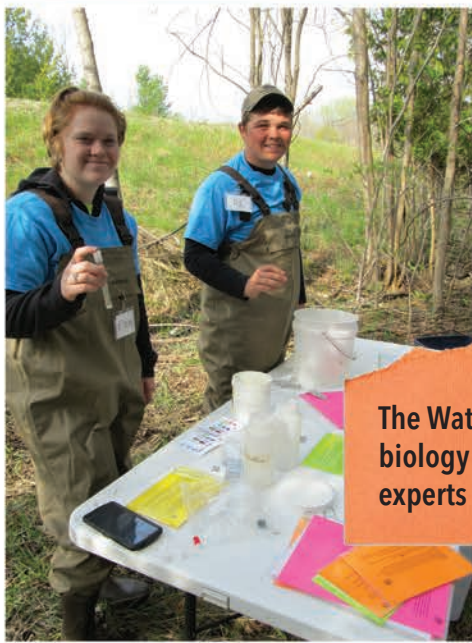
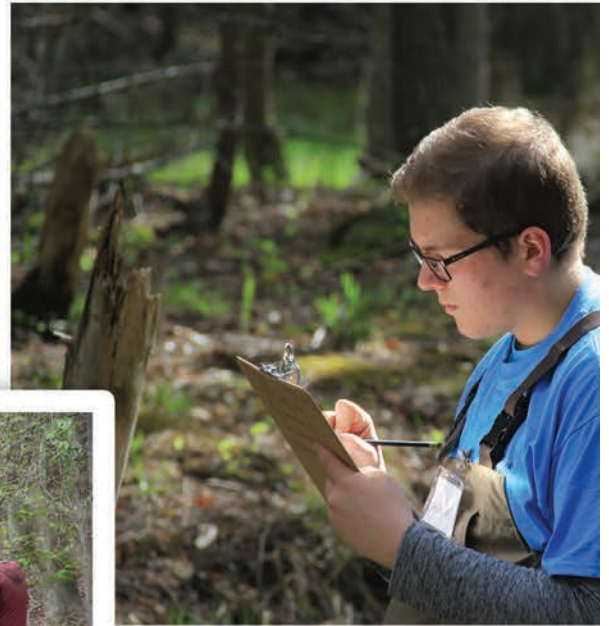
NEW RESOURCE

Emmet County Property Owner's Permit Guide Available

A Property Owner's Permit Guide is now available for the residents, local officials, and development community within Emmet County. The Permit Guide was produced by Tip of the Mitt Watershed Council, with funding provided by the Petoskey-Harbor Springs Area Community Foundation, to help protect our water resources.

The Permit Guide will help property owners determine what permit is needed, which government agency to contact, and the basic permit requirements for a variety of land use development activities. The Emmet County Property Owner's Permit Guide can be viewed on the Watershed Council website at www.watershedcouncil.org. Hard copies of the Permit Guide can be requested by calling 231-347-1181 or emailing Jennifer McKay at jenniferm@watershedcouncil.org.





A total of nine high schools participated in the spring Watershed Academy:

- Alanson
- Elk Rapids
- Boyne City
- Pellston
- Onaway
- Bellaire
- Mackinaw City
- Harbor Springs
- East Jordan

The Watershed Academy is a program that engages high school biology students and provides an opportunity for them to become experts in their watershed.

Youth Programs

Developing good stewards for tomorrow.





Over 300 middle school students from the Lake Charlevoix Watershed participated in this year's Students Experience Lake Charlevoix .



Students learn about their watershed, invasive species, macroinvertebrates, water chemistry, water quality monitoring, and more. This program is hosted in partnership with the Lake Charlevoix Association and the Beaver Island Boat Company.



The 2nd Annual Waganakising Bay Day was held on June 26th. The family-friendly water festival provided a number of hands-on activities for kids to learn from environmental experts on wildlife, water quality, stewardship, and recreation.



Welcome New Members

3/16/16 - 6/16/16

Dr. and Mrs. Melvin Czechowski
Mr. Arthur Francis
Robert Newberry and Lynn Jancek
Mr. and Mrs. Victor L. Krisko
Jack and Julie Marlette
Dennis and Wendy Richardville
Matthew and Jessica Sandler
Denise Holmes and Stephen Sawyer
Professor Geoff Schladow

Memorial Gifts

In Memory of Hoppy Hopkins
Mrs. Lewis E. Hopkins

In Memory of Buzz Jenks
Lindy and Gary Buffington
Paulina U. Ryan

In Memory of Molly Pierrepont
John C. Jansing

In Memory of Robert B. Aikens
Millicent G. Wallin

Special Gifts

In Recognition of Friends of O'Neal Lake*
David Burfield

*Tip of the Mitt Watershed Council is the nonprofit fiduciary for the Friends of O'Neal Lake.



Protect the water you love for the people you love

If you've ever spent time watching a sunset on Lake Michigan, fishing on our inland lakes, or paddling a winding river, you know that Northern Michigan is full of inspiring and beautiful waters. What better legacy to leave your loved ones than clean water and protected special places?

One of the most profound ways to make an impact on the future of Northern Michigan's waters is to make a planned gift to Tip of the Mitt Watershed Council. Gifts of life insurance, annuities, or remembering the Watershed Council in your will may enable you to achieve your financial and estate goals while helping to preserve what you love most about our region for future generations. These gifts often enjoy beneficial tax incentives as well.

A planned gift can be made outright or after the donor's lifetime. Planning options include:

Will or trust: A charitable bequest lets you designate a specific portion of your assets to the Watershed Council, or the part of your estate that remains after your loved ones are provided for.

Retirement Plan Assets: Assets such as 401(k)'s, 403(b)'s and IRA's may be subject to high tax rates, which make them ideal for charitable giving. As a 501(c)(3) nonprofit organization, the Watershed Council pays no taxes on your gift, allowing your entire gift to support our work.

Life Insurance Policy: You may make a gift of an existing life insurance policy or include the Watershed Council as a beneficiary of your personal or group life insurance policies. This may make you eligible for an income tax deduction.

A gift in honor of an event or a loved one: Some people name the Watershed Council as the recipient of memorial gifts received after the death of a loved one. Others ask friends and family to make a contribution to the Watershed Council in honor of a personal occasion such as a marriage anniversary or the birth of a grandchild.

Every gift to Tip of the Mitt Watershed Council makes a difference, no matter how large or small. For more information about our many planned giving options, please contact Gail Gruenwald at 231-347-1181 or email gail@watershedcouncil.org.



Thank You...

Libby Ives for preparing Elk Rapids Chain of Lakes shore survey GIS parcel data.

Mackenzie Dix for assisting with GIS project.

Dave Crowley for donating signal flares for safe field work on the Great Lakes.

Habitat Landscape Comany, LLC for maintaining our office landscape at the Freshwater Center.

Watershed Academy volunteers for the spring session: **Greg Waltz, Jeff Dykehouse, Lauren Dey, Caroline Keeson, Christine Steensma, Mrs. Fritz, Dave Cummings, Mike Lynch, Melissa Hansen, Ashley Cousens, Bethany Springsdorf, Nelson Thompson, and Matt Haberkorn.** Watershed Academy teachers: **Brooke Groff, Alan Talcott, Kelsey Bricker, Anna Walker, Becky Lipchik, Scott Steensma, Tom Baeckeroot, Matt Carter, and Brook Vieau.**

Charlevoix Public Library for donating the conference facility and **Tom's Mom's Cookies** for donating five dozen delicious chocolate chip cookies for our Watershed Academy Summit.

In celebration of Earth Day this Spring, our friends at the **Grain Train Natural Foods Market** generously donated 5% of sales from the day to the Watershed Council. We are extremely grateful for this contribution to our organization.

Have you recently moved?

If the post office is forwarding your mail to you, then chances are you have a forwarding sticker on your newsletter. While this service is offered by the post office, it won't last forever. Mail forwarding only lasts up to 12 months. Avoid missing future issues or our newsletter by calling 231-347-1181 with your new information or email kate@watershedcouncil.org.

UPCOMING EVENTS

Burt Lake Pontoon and Presentations

August 3, 2016

1:00 p.m. - 4:00 p.m.

Leave from Maple Bay Boat Launch

Join the Watershed Council staff and Burt Lake Preservation Association to learn more about the state of Burt Lake and its Watershed while enjoying a pleasant pontoon ride on Burt Lake. Pre-registration is required. Instructions on where to meet will be provided at time of registration. To register or for more information, please call (231) 347-1181.

Healing the Bear - Bear River Cleanup

August 13, 2016

9:30 a.m. - 1:30 p.m.

Meet at the Bear River Shelter, Quaintance Ave., Petoskey. The entrance is across from City Hall.

Join us for this fun event as we remove trash along the river from Walloon Lake Village Park to the Petoskey Waterfront. Volunteers of all ages and abilities are invited to walk, wade, or canoe as they pick up trash and debris from the area surrounding the Bear River. Canoes and people willing to search for items along the bottom of the river are especially encouraged to attend this year. If you plan to bring a canoe, please let us know when you call in so we can assign the appropriate section of the River to you.

Breakfast, lunch, and t-shirts are free for volunteers! Meet at 9:30am at Petoskey's Bear River Shelter. **Pre-registration is encouraged** to help us plan for this event and to guarantee you a t-shirt. To register or for more information, please call Matt at (231) 347-1181 or email matt@watershedcouncil.org.

ACUTE: New Video and Fact Sheets Available

Educational resources to help understand the TCE Plume in Antrim County

The Watershed Council participates in a stakeholder group known as Antrim County United Through Ecology (ACUTE), a collaboration formed in 2003. ACUTE works for community consensus regarding the management of a toxic plume of trichloroethylene (TCE) groundwater contamination. The plume extends from Mancelona towards the Schuss Mountain Ski Resort and is the result of an orphaned industrial site.

The Michigan Department of Environmental Quality (MDEQ) worked with the community in 2001 to establish and fund the Mancelona Area Water & Sewer Authority (MAWSA), which provides safe drinking water to residences affected by TCE. Additionally, MDEQ invested nearly \$11 million over the years to manage the plume and has committed another \$2 million moving forward. This funding will extend water mains to new areas and hook up homes to municipal water if TCE is detected in residential wells. This also covers funding to the Health Department of Northwest Michigan for regular sampling of residential wells, MDEQ monitoring of the well network and groundwater supplies, and additional technical improvements. In 2015, Antrim County contributed \$250,000 toward the work.

Recently, two important educational resources were produced. First, the Watershed Council partnered with ACUTE, Antrim

County, and the Three Lakes Association to produce an educational video for the Antrim County website. This video features solutions in place to keep fresh water plentiful in the region and was funded, in part, by Freshwater Future and the Watershed Council. Second, MDEQ has published a user-friendly and comprehensive set of fact sheets about this issue. To obtain a copy of these fact sheets, contact Grenetta Thomassey at 231-347-1181 ext. 118 or grenetta@watershedcouncil.org or visit the Antrim County website at www.antrimcounty.org.





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Stay connected and up-to-date



Facebook

www.facebook.com/watershedcouncil

Offers a mix of news, updates, events, action alerts, and more.



Instagram

@TIPOFTHEMITTWATERSHED

Offers a pictorial view of our work, the scenic beauty of water, and more.



YouTube

www.watershedcouncil.org/videos-presentations

Over 40 informational videos to help you protect our water resources and get acquainted with our programs and projects.



E-Newsletter and E-invitations

Click the "Sign Up" tab on our Website home page.

Sign up to receive our e-newsletter and e-invitations to events and workshops.

NOTE: We respect your desire to receive email only from the Watershed Council. We do not share email addresses.

Great Lakes Restoration Initiative Act

In April, the U.S. House of Representatives passed the Great Lakes Restoration Initiative Act of 2016, a bill that is an integral piece of federal Great Lakes restoration efforts. The bill, H.R. 223, authorizes the Great Lakes Restoration Initiative (GLRI) at \$300 million annually over the next five years. The Initiative supports efforts to restore the health of the Great Lakes by investing in projects to restore habitat and wetlands, clean up toxic pollution, combat invasive species like Asian carp, and prevent runoff from farms and cities. In January, similar legislation passed out of committee in the U. S. Senate.

Over the last seven years, the U.S. Congress has invested over \$2.2 billion through the GLRI in more than 2,900 projects in Great Lakes states. These projects have restored more than 150,000 acres of fish and wildlife habitat, opened up fish access to more than 3,800 miles of rivers, helped farmers (in combination with other programs) implement conservation strategies on more than 1 million acres of rural working lands, and accelerated the cleanup of toxic hotspots.

Federal restoration efforts are producing significant results throughout the Great Lakes Basin, including here in Northern Michigan. Thanks to a GLRI grant, the Watershed Council has been able to repair road crossings, restore streambanks, and install rain gardens to reduce sedimentation and nutrient loading in the Little Traverse Bay Watershed. Most recently, the Watershed Council received over \$640,000 to address invasive zebra and quagga mussels in inland lakes within our region (see page 3).

Although we have made progress, the Great Lakes still face serious threats and much more work remains. We thank the House for their leadership in sustaining the GLRI into the next administration and urge the Senate to take action by either taking up the House-passed bill or the Senate legislation immediately.

The stormwater retention system on the North Central Michigan College campus is just one example of the Great Lakes Restoration Initiative projects completed by the Watershed Council in recent years.

