

THE LAKE GUARDIAN



FALL 2022

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Visioning for Fall 2022

Tom Darnton

Since early summer, a three-person team from LCA, Tip of the Mitt Watershed Council and Land Information Access Association has been visiting each of the 10 planning commissions with responsibilities for our Lake Charlevoix shoreline. Our three-person team arrives, makes a brief presentation on the need for and history of shoreline protection and then asks questions. The result is dialogue about the actual experiences of our townships and cities as they adopt and enforce shoreline regulations that balance development and lake protection. What are we up to? We are in the first steps of a process to develop a vision for Lake Charlevoix.

The combined efforts of the various public and nonprofit organizations working

to maintain the lake in a natural state have not been able to prevent rapid development of our shoreline. Our community response to the high water of 2019 and 2020 resulted in numerous shoreline hardening projects. As the water receded in 2021, a large amount of stone placed around the lake became apparent. We need to do better. The question is how?

From what we know and what we experienced around the lake, environmental protection happens best through community consensus. We have a watershed management plan produced through a consensus process, the Lake Charlevoix Watershed Management Plan. The Plan is maintained on the Tip of the Mitt Watershed Council website, <https://www.watershedcouncil.org/lake->

[charlevoix-watershed-management-plan.html](https://www.watershedcouncil.org/lake-charlevoix-watershed-management-plan.html). It contains a wealth of detail about conditions in the watershed, warnings about risks and ideas for protection. It states a goal, protecting the water quality of the watershed, as the only way to protect the quality of Lake Charlevoix. But what does a protected Lake Charlevoix look like? We think it is time to develop such a vision.

Our experience teaches us that our local planning commissions are the places where community standards are developed, interpreted, and enforced. So, with a grant from the Charlevoix County Community Foundation, matched by our own resources, we engaged with Tip of the Mitt Watershed Council and Land Information Access Association in a listening exercise. By the end of October, we will have been to each of the 10 planning commissions, not to talk but to listen.

By January, we will have processed our notes and impressions. We intend to return to the Planning Commissions to report the observations and suggestions which emerge from our listening. We will also be formulating the next step towards developing a consensus vision for a future Lake Charlevoix that continues to be a place of natural beauty and inspiration. Please stay tuned.



Lake Charlevoix Day 2022

PHOTO CREDIT: JOEL VAN ROEKEL

FALL 2022
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PHOTO CREDIT: JULIE STRATTON

President's Corner

My connection to Charlevoix traces back to the late 19th century when my great grandfathers arrived here. They came to exploit the forests and the fish populations and moved on when those resources were exhausted. I find it ironic that we are now working to re-establish a balance that existed for hundreds of years before my ancestors turned things around in just a few decades.



Shoreline protection has been an important mission of the Lake Charlevoix Association for the past 50 plus years. A watershed management

approach has been an important component of our mission for more than a decade. One result of this effort to establish a watershed wide conservation strategy was the adoption of shoreline protection ordinances by all 10 of the jurisdictions sharing responsibility for some portion of the Lake Charlevoix shoreline.

These ordinances were not passed based on aesthetic notions. They were adopted because scientists had identified the critical role our natural shoreline plays

in maintaining a healthy lake. An important feature of a healthy lake is the presence of a broad spectrum of wildlife, plants and animals. Our lake needs to be suitable for recreation, but we also want it to be home to a wide assortment of wildlife. Owners of waterfront lots have the privilege and responsibility to preserve and protect these natural shorelines. I am one of those fortunate people who is privileged to own shoreline property. Just as we must manage our property so as not to negatively impact our neighbors to the side and back, so must we manage our property to avoid behaviors that negatively impact the lake. Our challenge is to find a way to manage development in balance with nature.

At LCA, we know that many permits were sought and granted in the crush caused by the convergence of record high-water and EGLE's diminished capacity due to Covid-19. We also suspect that certain riparian owners with access to equipment have dumped stone along their shorelines without bothering with the permit process. The end result was a failure of our shoreline protection system to protect the lake.

The damage has been done. Our only choice going forward is to revisit the biological foundations of shoreline protection and think about how we can do a better job of it. I repeat, we don't do shoreline

protection because we like the looks of it. We do shoreline protection because it is essential to preserving the quality of the watershed.

*Tom Darnton,
LCA President*



SPRING NATIVE Plant Sale

We are excited to announce that the Lake Charlevoix Association, Walloon Lake Association and Otsego Conservation District have formed a partnership to host a 2023 Spring Native Plant Sale.

The plant offerings include individual plugs or kits consisting of pre-mixed flats, geared explicitly toward shoreline planting conditions. This provides you the opportunity to purchase local native plants to help strengthen the resilience of your shoreline in a beautiful way. We look forward to seeing you there and speaking about native plants and sustainable greenbelts. Stay tuned for more info on next spring's event!

Mission:

*Protect the natural quality and beauty of Lake Charlevoix.
Promote understanding and support for safe and shared lake use.
Advocate sensible and sustainable practices for lake use and development.*

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www.lakecharlevoix.org
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Keeping Lake Charlevoix *Blue*: An LCA Septic Study Update

Dan Mishler



Logan and Sophie orient the crew and collect data on iPads

LEAKING SEPTIC TANKS ARE PROBABLY THE LAST THINGS THAT COME TO MIND WHEN YOU LOOK OUT OVER LAKE CHARLEVOIX THE BEAUTIFUL. HOWEVER, THEY HAVE BEEN ON THE MINDS OF THE LAKE CHARLEVOIX ASSOCIATION, TIP OF THE MITT WATERSHED COUNCIL (TOMWC), AND CENTRAL MICHIGAN UNIVERSITY FOR MORE THAN A YEAR. TO ADDRESS THEIR CONCERNS, A COLLABORATIVE MULTI-YEAR SEPTIC STUDY WAS BEGUN THIS SUMMER ON OUR LAKE.

Caroline Keson, Monitoring Programs Coordinator of TOMWC and two of their summer interns have been busy collecting data from suspected hotspots along our shoreline. Water was sampled at 396 points along the shoreline from kayaks with a conductivity probe. High conductivity is a strong indicator of excess nutrients in the water and positive results were found in 30 locations. Samples were collected at these hotspots and will be analyzed by CMU for nutrient types and concentration levels.

Moving water and weather conditions can obscure the source of nutrients along a shoreline. To that end, permission was sought from owners to sample on land to better locate the actual source of any nutrients. We are encouraged that 65 people gave us permission to sample their property. A land probe will be used as a first indicator, followed by collecting water samples from just below the ground surface. These samples will be analyzed for levels of



Crew gearing up for monitoring

human enteric (gut) bacteria to determine if a leaky septic system is at fault.

As with several previous projects, the LCA has been able to make use of summer interns working with TOMWC. The upside of this approach is that we get enthusiastic, competent young people who can help us complete projects that are beyond the scope of volunteers, while expanding their expertise in their chosen field. Evan Joneson, a CLEAR Fellow with the watershed council, reported the following, "This summer, I was able to help Caroline Keson rewrite the methodology behind the council's septic sampling and monitoring program. It was a great experience for me to see what it was like to do research and outreach to determine best practices and see our preparation and work come to fruition. The fieldwork that followed was a great learning experience that taught me so much about the world of water quality conservation."



Anna and Evan sample water close to shore

The Great Lakes News Collaborative reports estimates of 330,000 failing septic systems in the State of Michigan. These failing systems contaminate lakes, rivers, and ground water. The upside of this project is that it addresses the twin goals of protecting the high water quality of Lake Charlevoix and the development of protocols for future studies of septic failures.

As has been previously reported, this study is a multi-year project with funding from LCA and the Charlevoix County Community Foundation.

Protecting the Shoreline Naturally

Joel Van Roekel with much assistance from Jennifer Buchanan

IN EARLY OCTOBER A STRETCH OF THE EAST JORDAN TOURIST PARK SHORELINE BECAME THE SITE OF A MUCH NEEDED RESTORATION EFFORT. A TWO-DAY PROGRAM WAS LED BY THE TIP OF THE MITT WATERSHED COUNCIL (TOMWC) IN COLLABORATION WITH THE MICHIGAN NATURAL SHORELINE PARTNERSHIP. IT BROUGHT 23 CONTRACTORS AND REPRESENTATIVES FROM LOCAL AND STATE GOVERNMENT TO LEARN THE WHY'S AND HOW'S OF BIOENGINEERED SHORELINES.

Jennifer Buchanan, Associate Director of TOMWC said, “The workshop was designed as a continuing education training opportunity to help shoreline contractors learn more about the proper use of rock in designing resilient shorelines for high energy lakes.”

The workshop emphasized the use of bioengineering as a method of shoreline restoration. These projects are designed to restore shoreline function using natural materials including native plants, coir (coconut fiber) logs, and fieldstone. When designed properly, these projects can withstand waves and ice push.

According to Buchanan, “With time, the fieldstone will collect sand and organic material between the nooks and crannies and create more shoreline. This shoreline... will be fortified with plants and fieldstone that flex and yet stabilize providing water quality and habitat benefits all the while.”

Funding for the shoreline restoration came from a DNR Aquatic Habitat Grant Program.

This project is the result of many hands working many hours over many years. The LCA is grateful that there are so many people who believe that Lake Charlevoix is “Ours to Protect.”



A filter layer or base of small stone overlays the slope.



A woven coir blanket is draped over the sand slope, coir log, and large toe stones are placed in a trench to form the base of the slope.



In the spring, the LCA will install native plants throughout the coir logs and the woven coir blanket. As these plants become established, they will “creep” toward the water’s edge.



A leisurely cruise along our Lake Charlevoix shoreline can be a memorable way to spend your day. Unique cottages, wonderfully creative landscapes, and a multitude of plants along the water's edge are there to enjoy. While your eyes are more likely to be drawn to the lake-side homes, tall trees and abundant boulders, for Lindsey Bona-Eggeman and her team from CAKE/CISMA, their eyes are on the plants.

Lindsey is the Program Coordinator for the Charlevoix, Antrim, Kalkaska, and Emmet / Cooperative Invasive Species Management Area. Their mission is to protect the natural resources, economy, and human health of Northern Lower Michigan. In addition to the four counties, they partner with more than 30 environmental groups and organizations for outreach, education, and restoration.

CAKE/CISMA plays an important role in the ongoing battle against aquatic invasive species on our inland lakes. While there are several aquatic invasives of concern, non-native Phragmites has been a problem on Lake Charlevoix for more than a decade. Many of the large stands of Phragmites have been removed or reduced but it is a tenacious plant whose presence does not bode well for a shoreline.

When a stand of Phragmites establishes itself, it can displace the diverse communities of native plants. It can also reduce quality habitat for wildlife, alter the natural shoreline, and develop into dense stands up to 15 feet in height. They reproduce through both seeds (up to 2,000 per plant) and rhizomes that can grow to more than 60 feet long and burrow six feet down.

To learn more, the CAKE/CISMA website (cakecisma.org) is both highly informative and has a "Site Visit" request link.

The following is from a conversation with Bona-Eggeman last month:

JVR: Besides the great information on your website, is there anything else you would like people to know?



LB-E: CAKE can't tackle invasive species on our own. It takes all of us. We need individual property owners to take some initiative on their own properties. We can provide guidance and help with early detection and a rapid-response, and maintenance when we are alerted.

JVR: Why can't we just eradicate Phragmites?

LB-E: Eradication tends to focus on when something is first discovered. Once an invasion happens, we are often stuck with it. Often, we work to figure out how to reach a balance with an invasive so that it doesn't take over everything. We look to see how it is functioning in the ecosystem.

JVR: What should people do if they think they spot an invasive on their shoreline?

LB-E: Take some really good pictures. Send them to Michigan Invasive Species Information Network (misin.msu.edu) or email me at lindsey.bonaeggeman@macd.org or click on "Request a Site Visit" on our web page.

JVR: What do we need to keep in mind in dealing with aquatic invasive?

LB-E: Weeds are notorious for being pesky and are adapted to press on and survive. It often takes two to three years to get ahead of the curve.



WHAT IS A LAKE?



Ours to protect.

THE CISCO

A Fish for All Seasons

Joel Van Roekel

THE CISCO OR LAKE HERRING HAS PLIED THE WATERS OF LAKES MICHIGAN AND CHARLEVOIX FOR CENTURIES. ITS HISTORY IS ONE OF BOUNTY, WITH 19,000,000 POUNDS HARVESTED ANNUALLY BEFORE 1940, AS WELL AS NEAR EXTINCTION DUE TO OVERFISHING, THE INTRODUCTION OF RAINBOW SMELT, SEA LAMPREY, AND THE EXPLOSION OF ALEWIVES. THE CISCO CRASHED SO DRAMATICALLY IN THE 1960'S THAT SIX OF EIGHT MAJOR FORMS OF DEEP-WATER CISCO ARE NO LONGER FOUND IN LAKE MICHIGAN.

In a surprising turn of events, it appears that the Cisco are making a comeback in Lake Michigan and Lake Charlevoix. This population uptick has caught the interest of the Michigan DNR Fisheries Division as well as other agencies, universities, and environmental groups. Several studies are under way to better understand the Cisco's spawning locations, diet, and migration habits.

The Cisco have surprised researchers with an unusually rapid shift in their diet. Historically, Cisco ate zooplankton and small invertebrates, both abundant in Lake Michigan and Lake Charlevoix. The introduction of the Zebra and Quagga Mussels changed all that. The Cisco were forced to forage for larger prey and in an ironic twist of fate, now consume both the alewives that were once competition and the invasive Round Goby that followed the Zebra and Quagga mussels from the Caspian Sea.

To better understand the migration habits of the Lake Michigan/Charlevoix Cisco, scientists from the Michigan DNR and the US Geological Survey have



PHOTO CREDIT JOEL VAN ROEKEL

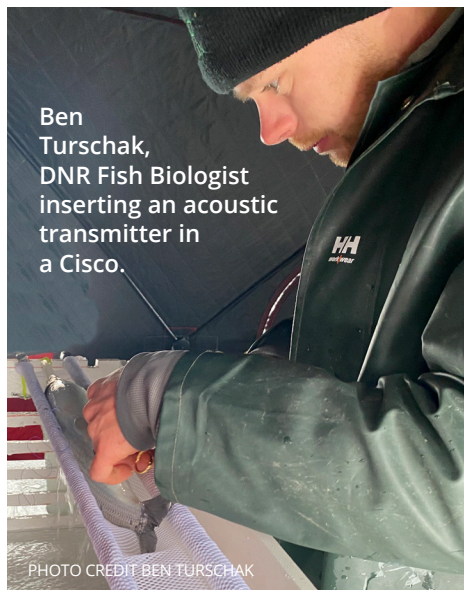
Acoustic Transponder

begun a movement study using acoustic telemetry. Small transmitters are surgically implanted, and a grid of acoustic receivers record data from each individual whenever they swim within range of a receiver. Results of these studies will be reported in future issues of The Lake Guardian.

The resurgence of the Cisco has been noticed by sport fishermen who have had great success year-round. Over the past seven years, more than 26,000 catches have been recorded in the Pine River Channel and off our coast in Lake Michigan, with thousands more landed in Lake Charlevoix.

Surprisingly, similar levels of success are enjoyed by ice anglers. For reasons that are not completely understood, schools of Cisco are found from the Coast Guard station all the way to Boyne City throughout the winter season.

A conversation with local guide Jim Chamberlain produced some surprising answers. He said, "There is not another Cisco ice fishery up north that competes in terms of quantity. Every fish we catch is a Michigan Master Angler fish. A 16-inch Cisco is considered a master angler fish and we consistently catch 22, 24, 25 -inch fish."



Ben Turschak, DNR Fish Biologist inserting an acoustic transmitter in a Cisco.

PHOTO CREDIT BEN TURSCHAK

ATTENTION: TAGGED CISCO (LAKE HERRING)

Cisco movement study: Please release tagged fish!

PROJECT SUMMARY

Cisco (Lake herring) in Lake Charlevoix were implanted with acoustic tracking devices in January 2022. These fish are being actively tracked by scientists at the US Geological Survey and the Michigan DNR to better understand movement to and from Lake Charlevoix and to improve our understanding of the expanding population in northern Lake Michigan. Only a small number of fish were tagged and keeping as many in the water as possible is important to the success of this project.



PHOTO CREDIT BEN TURSCHAK

What does a tagged cisco look like?

- Bright green tag implanted below dorsal fin
- ID number and "Release and Report" printed on tag
- If caught, note ID number and call **203-231-5289**
- If harvested, **please report** and retain tracking device (implanted in the body by the stomach)

For more information, please call 203-231-5289

The news these days is filled with so many reports of environmental disasters and threatened ecosystems. It is great to be able to share stories of resiliency and adaptability in environmentally trying times.



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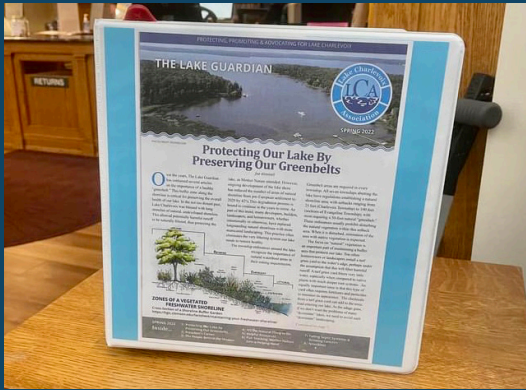
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Literature

**LOOK FOR THE LCA BINDERS
LOCATED AT EACH OF THE LIBRARIES
IN OUR SURROUNDING COMMUNITIES**

You can view simple, practical, and water-friendly ways to protect Lake Charlevoix at the Boyne City, Charlevoix, and East Jordan libraries. Please note that we will be updating the information regularly and we would love to have a few good volunteers help with that task. Contact Peggy Smith @ jps197@comcast.net to learn more.



News Bites

PHOTO CREDIT: DANIEL A. DUNCAN,
DUNCANSTUDIOSBOYNECITY.COM

With Much Appreciation: We applaud retiring LCA Board Member Joel Van Roekel and sincerely appreciate your hard work and efforts. Thank you for your many wonderful years of dedication!

Welcome: The LCA welcomes new Board Member and Treasurer, Howard Warner. We look forward to collaborating with you on many upcoming lake protection projects.

Thank You: Protecting our beautiful Lake Charlevoix would not be possible without the support of our members and volunteers. Thank you for backing our mission. Our member numbers are up, and engagement continues to grow through our social media presence. In addition, we've had a noticeable uptick in Tribute contributions. What an incredible way to pay homage to a favorite person in your life.

Year-End Donations: The LCA is a 501c3 and always appreciates being included in your year-end giving. Your tax-deductible donation funds lake protection for Lake Charlevoix. You may donate on our website, <https://www.lakecharlevoix.org/support-us.html>, or donate with the enclosed envelope.

License Plates: If you would like an LCA license plate for the front of your vehicle, please contact us at info@lakecharlevoix.org. \$10 for local pick up or \$15 to ship.



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