

President's Letter

As I take my first steps into the position of President for the Three Lakes Association, I am deeply aware of the immense debt of gratitude I owe to those who have come before me. In the years that I've been associated with TLA, I've had the privilege of knowing and working with several of these Presidents, including Al Priebe, Ed Oshaben, Len Franseen, Jack Norris, Dick Garcia, Bob Bagley, and Dean Branson.

I want to thank Dean Branson, our immediate Past-President, for his four years at the helm of TLA. Dean brought extraordinary collaborative skills to the role, encouraging people of like mind, and organizations with overlapping missions, to work together to address the many issues that face our watershed. In collaboration with the Elk Skegemog Lakes Association, for instance, Dean was the "face" of the Three Lakes Association and a large part of the inspiration to launch a multi-faceted investigation into the reasons for, the implications of, and the possible means of remediation of, the heavy siltation and sand deposition observed over the last several years in both the Rapid River and the Grass River.

For those of you who don't know me, here's a little background. My family's roots in this region go back over a hundred years. Both of my father's grandfathers were pastors who served in the Alden Methodist Church in the early 1900s. My grandfather, Earl Norris helped his father, the Reverend Myron Norris to build a cottage on the south shore of Torch Lake. My uncle, Brad Norris, later built his home on that same spot. My father, Jack Norris, has actively worked for the past fifty years, or so, to keep the waters of our region clean. I am a third-generation Three Lakes Association member, inheriting, as it were, the attitude of stewardship and responsibility for the health of our lakes. I have grown up knowing that these waters and this beautiful region are temporarily placed in my keeping, that I have a sacred duty to care for them, and that I am to pass them on in at least as good condition as I received them, if not better.

My home is an ancestral home, located along the Rapid River. I live in Rapid City which lies at the southern tip of Torch Lake, in Clearwater Township, the only TLA township in Kalkaska County. All the other seven TLA townships – Milton, Torch Lake, Central Lake, Forest Home, Custer, Kearney, and Helena – lie in Antrim County. I mention this because there is a misconception that TLA interests are shared only by those who live on the shoreline of our lakes. I am not a lakeshore resident. I live in the woods, up from the river. But, I understand the meaning of the term "watershed," and I know that what I do on my property ultimately does have an effect, positive or negative, on the waters of our region.

It is my intention to continue in the same collaborative spirit that Dean has modeled for us, pressing ever forward in the mission to preserve and protect the waters of Lake Bellaire, Clam Lake, and Torch Lake, as well as the waterways that connect them, and drain into them and out of them – in other words, our watershed. Dean has promised to continue serving on the Board as our immediate Past President, and to "come alongside" and assist me as I learn the "ins and outs" of the job. With support like that, I'm ready for the challenge. What a wonderful way to "pass the torch"!

Best,
Tina

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The Mission of the Three Lakes Association is to provide leadership to preserve, protect, and improve the environmental quality of the Elk River Chain of Lakes, especially Torch Lake, Clam Lake, and Lake Bellaire, for all generations



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Grass River Sedimentation Project: Stream Hydrology Experts Using High-Tech Instruments

During the week of September 23rd, a team of stream hydrology experts and a few TLA volunteers conducted the field work necessary to validate a Soil-Water Assessment Tool (SWAT) model built for Grass River last year. This validation project was one of the recommendations from a group of "Shanty Creek Watershed Stakeholders" last winter. The field work involved...

- Accurately measuring stream flow rates of several streams at different locations on the same day
- Measuring the levels of water above sea level in Lake Bellaire & Clam Lake
- Measuring elevations at dozens of road-stream crossings on Shanty Creek, Cold Creek, and Finch Creek
- Measuring cross-sectional profiles of Grass River at multiple locations on the river that has become wider and shallower over the past few decades

The flow rates and cross-sectional profiles of the larger streams were measured using an Acoustical Doppler Current Profiler device, and the elevations at specific locations were measured using a surveyor's Global Positioning System capable of accessing the signals from 17 different satellites. The team of experts were from the following four organizations:

- MSU Geology Department: Anthony Kendall, Study Director: Lon Cooper Graduate Student, and Blaze Budd
- Grand Traverse Band of the Ottawa & Chippewa Indians Stream Biologists: Brett Fessell and Frank Dituri
- Tip of the Mitt Watershed Council: Kevin Cronk
- Brockport College-State Universities of New York: Professor Paul Richards (built the SWAT model in 2011)

This field work was co-sponsored by TLA and Elk-Skegemog Lakes Association (ESLA). Similar field work was conducted on Rapid River as part of ESLA's 2012 Rapid River Sedimentation Project. Besides validating the 2011 model, the project will pinpoint and prioritize specific activities to reduce the accumulation of sediment in these rivers. We expect to receive a report from the hydrology experts by the end of the year, which will then be used to apply for grants to pay for the implementation of the sediment-reducing activities.



Effects of Aquatic Nuisance Species on the Behavior of Recreational Freshwater Users

Prepared by:

Darrick N.T. Evensen, Selmin Creamer, Richard C. Stedman, and T. Bruce Lauber
Human Dimensions Research Unit Department of Natural Resources, Cornell University

Editor's note: Our Executive Director participated in the Traverse City focus group April of this year. This summary contains excerpts from the full report, which when approved by the US Army Corps of Engineers, will be available later this fall on our website.

Executive Summary

This report summarizes the findings from a series of focus groups conducted as part of the United States Army Corps of Engineers/Cornell University "Recreation Impacts of Aquatic Nuisance Species to the Great Lakes and Mississippi River Basins" cooperative agreement. The overall purpose was to describe how and why aquatic nuisance species in the Upper Mississippi River, Ohio River, and Great Lakes basins may affect recreational behaviors of angler, boaters, and beachgoers. Understanding the ways that recreationists may respond to the presence of aquatic nuisance species and the particular effects of these species that may lead to this response is necessary for understanding the impacts of aquatic nuisance species on recreationists. This work, therefore, could be used as a foundation for later research on the economic impacts of aquatic nuisance species on recreationists.

Conclusions

Aquatic nuisance species have potential to influence many of the factors cited as affecting anglers, boater, and beachgoer behavior; nonetheless, for each recreation group, there were additional important factors affecting behavior that are unrelated to aquatic nuisance species. For example, catch rate and fish size were vastly important factors affecting angler behavior (and, to a slightly lesser extent, boater behavior) that could be influenced by the effects of aquatic nuisance species. Likewise, water clarity, personal and family health and safety, and visual beauty, were central factors affecting boater and beachgoer behavior that could be affected by aquatic nuisance species. Weather, seasonality of recreation, and access, on the other hand, were key factors affecting behavior across all three user groups that have little to no connection to the effects of aquatic nuisance species. In each user group (i.e., anglers, boaters, and beachgoers) the factors that were cited most often by focus group participants as affecting fishing, boating, and beachgoing behavior were related to the potential effects of aquatic nuisance species.

Even though the focus group participants seemed to be affected primarily negatively by aquatic nuisance species, the behavior changes that accompanied the effects of nuisance species frequently showed resilience and willingness to adapt rather than a level of concern or frustration that would lead to disengagement from an activity. Substituting different locations or activities for current

ones was a frequently cited approach to dealing with aquatic nuisance species.

In conclusion, aquatic nuisance species seem to have the capacity to affect fishing, boating, and beachgoing behavior in a wide range of ways, directly and indirectly. Some of the effects of aquatic nuisance species, and Asian carp in particular, can be expected to cause certain individuals to cease certain forms of recreation. Children specifically may be engaging in less fishing, boating, and beachgoing if their guardians know that Asian carp are present. Many interviewees, nonetheless, presented a strong resiliency and willingness to adapt to whatever new conditions arise. Very few interviewees disagreed, however, that the presence of Asian carp and other nuisance species would lead to a diminished recreational experience. Those who were not overly concerned about the presence of the giant fish generally responded with the half-hearted comment that even if it affected others badly, their form of recreation would be less affected. The vast majority of the focus group participants identified themselves as people who care not only about recreating, but about the greater ecosystem in which they live. People were not concerned about simply their own diminished experience, but also the diminished beauty and diversity of the natural world.

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Donne Gundle-Krieg
Duane and Jim Meyer
Dennis and Lorna Harrell
Ruth Ann Silvernail

2012 High School Internship Program

By Lorna Harrell and Leslie Meyers

Every summer since 2003, the Three Lakes Association (TLA) has sponsored a student internship program. The purpose of the program is twofold: 1) to enhance TLA's knowledge of Lake Bellaire, Clam Lake and Torch Lake and 2) to deepen the interns' appreciation of the extraordinary water resources of Antrim County. Through a series of activities, the interns learn scientific field procedures and analyses while interacting with several scientists, agency representatives, and TLA volunteers. Further, the students spend a minimum of 60 hours in the program, prepare and present their findings both in writing and orally for which they receive ½ credit hour of science for their high school transcripts.

The interns during 2012 were Sierra Kintigh (16) and Alec Stilwell (16), both students at Bellaire High School, and Zachary Pedersen (14), an incoming first year student at Elk Rapids High School.

Specific activities undertaken by the interns and presented in chronological order included:

- Sampling macroinvertebrate populations in Shanty, Cold, and Finch Creeks as indicators of water quality
- Conducting a time-flow study for Shanty Creek to document stormwater flow events
- Conducting an aquatic plant survey of Lake Bellaire, Clam Lake and Torch Lake aimed at determining locations of Eurasian water milfoil (EWM), an invasive species
- Assisting with the installation and initial evaluation of fish shelters in the three lakes
- Participating in electrofishing in Shanty, Cold and Finch Creeks

- Characterizing the plume entering Torch Lake from its main inlet at Clam River, and
- Enhancing public awareness of Antrim County's water resources by working at TLA's booth at the Antrim County fair and other events.



These activities are documented in further detail in the report. Collectively, these activities provided the interns and TLA with a water quality "sampler," reflecting conditions in the watershed and waterways during the summer of 2012.

As with the internship program in previous years, many individuals, organizations and agencies supported the 2012 program work in various ways. TLA gratefully acknowledges help from The Watershed Center Grand Traverse Bay (macroinvertebrates), the Antrim Conservation District (facilities), Tip of the Mitt Watershed Council (flow meter), Friends of Clam Lake and Torch Lake Protection Alliance (volunteers, boats), the Michigan DNR (electrofishing), and numerous TLA volunteers (time, boats, field guidance). Leah Varga, a recent biological sciences graduate of Connecticut College, served as the intern team's research associate, working with the students on the aquatic plant survey and fish shelters.

The complete report will be available on our website www.3lakes.com October 16, 2012.

TLA Science Education Outreach Program

By Patricia Roush, Chairperson, TLA Education Committee

This summer, Three Lakes Association's Board of Directors voted to reinvest in the Science Education Outreach Program (SEOP) for the fifth year. Year Five materials were delivered to the schools in mid September. All science teachers in our four districts (Bellaire, Central Lake, Kalkaska and Mancelona) are, again, invited to apply for funding to enhance their curriculum. Each teacher who receives our support is required to report to TLA as to how the enhancements we have provided impacted their students.

Over the first four years of SEOP, TLA has awarded funding that has provided 287 pieces of science equipment, 23 field trips, Science Teacher conferences for 22 teachers, 15 framed maps of the Elk River Chain of Lakes, a smart board, 16 Inland Seas Schoolship excursions, etc. For a complete list, please refer to the power point on our website. Total funding to date is \$44,000.

This year, the Board of Directors invited every school in the four districts to attend our August 28th board meeting. The purpose of the invitation was to update them on our program, to solicit their support and to generate ideas for improvement. Patricia Roush, Education Chairperson, gave a short presentation on the outreach program followed by discussion. School administrators from every district attended the meeting. Each administrator was provided with a packet of information that included all of the application materials given to their teachers as well as other materials.

After the presentation, the principals and superintendents were asked for their thoughts and ideas about the program and how it could

be improved. Each one expressed their thanks and appreciation for the outreach program and a few said they weren't as aware of the program as they will be now. All agreed that they would help to make sure their SEOP teachers deliver a thorough report to TLA in June or earlier. One suggestion to that end was to ask teachers to give a signed copy of the feedback agreement, which is part of the application, to their building principals so that they would know which of their teachers applied to the SEOP. A note to that effect was added to the teacher packets before they were handed out. Mancelona superintendent, Jeff DiRosa, asked that TLA provide him with a list of the items and opportunities that his science teachers have received.

All four districts gave TLA an open invitation to present to their boards of directors. Finally, there was a discussion of another untapped resource within TLA and that is all the scientist members in our organization. It was agreed that TLA would canvas its membership and provide each district with a list of members who would be agreeable to presenting to a science class or being a knowledgeable voice in a classroom activity. (Refer to the "Call for Expertise" in this newsletter.)

The grant application deadline is November 15th and selection of grant recipients will be completed no later than early January 2013. Approved grants will be reported in the January newsletter. Once again, I thank the TLA board and the membership for your continued support of this program. The teachers and students we have helped are grateful as well.

Bay Harbor Cement Kiln Dust Leachate Problem: Final Remedy

by Dean Branson

Editor's Note: This is the sixth article in TLA Newsletters about this controversial issue and a unique public process for significantly influencing environmental regulatory decisions that affect our region. The first article about this issue appeared in the July 2009 issue, which included TLA's rationale for becoming actively involved in the creation of, and participation in, the Regional Stakeholders Group. Four additional update articles were published in TLA's quarterly Newsletters in 2010, which are archived on our Website: www.3lakes.com. Since October 2010, DEQ and CMS were engaged in negotiations regarding a final remedy of this issue, which also included time spent obtaining EPA approval, and the adoption of a prerequisite new standard by the State of Michigan (PA 198, and amendments to Michigan's Part 201 Environmental Remediation Law) for residual mercury seeping from groundwater into surface water.

On July 24, 2012, officials from Michigan's Department of Environmental Quality (DEQ) and Attorney General's office summarized the key provisions of a negotiated Agreement (contract) with CMS Energy to protect water quality in and around Bay Harbor affected by cement kiln dust leachate. The audience for this synopsis and Q&A session was the representatives from a dozen organizations that actively participated in monthly meetings of the Regional Stakeholders Group (RSG) over a two-year period.

The primary focus of the RSG monthly meetings was to develop written, community-based, non-adversarial, and specific recommendations to DEQ, EPA, and CMS for permanent solutions to this very public and controversial environmental problem. The DEQ and Attorney General officials in attendance at the July 24th gathering acknowledged that they were significantly influenced by the RSG's recommendations as they negotiated the final Agreement. In fact, they explained that the RSG's recommendation provided the initial framework for starting the negotiations.

Essentially the problem involved the ongoing treatment and disposal of large volumes of groundwater contaminated with cement kiln dust leachate collected daily along the Bay Harbor shoreline of Little Traverse Bay. This groundwater is very alkaline (pH values of 11 to 12) and contains unacceptable concentrations of toxic metals, especially mercury. The root cause of this problem is the

very large piles of cement kiln dust buried in several old quarries that created some very scenic and valuable property on which the upscale Bay Harbor Resort was built.

When groundwater mixes with the buried cement kiln dust on its way to seeping into the bay, a leachate is formed with unacceptably high pH levels and concentrations of mercury at the shoreline. For a period of time some of the beaches in this area were closed for swimming by the Health Department due to the high pH values along the beaches...a situation that has now been corrected.

Interim corrective actions began in 2005 and cost CMS Energy hundreds of millions of dollars. Additional costs to comply with the negotiated contract for the foreseeable future may cost CMS more than \$250,000,000. A portion of these funds was spent characterizing the nature and extent of the leachate problem, and building & operating two comprehensive groundwater collection systems, one in the East Park area and another in the Bay Harbor Development area. Another portion was, and will continue to be spent treating and disposing of the collected leachate. Possible options for disposal of the collected leachate included the construction and operation of two new dedicated on-site wastewater treatment facilities using state-of-the-art mercury capture technology. Although a few truckloads of collected leachate each day are still being disposed of in an injection deep well, CMS's short-term goal is to successfully treat all of the collected leachate (about 100 gallons per minute) in their new on-site facility.

The final negotiated contract does not completely satisfy all of DEQ's or CMS's objectives, nor the objectives of all organizations represented in the Regional Stakeholders Group. However, the contract appears to be protective of health and environment in a cost-effective manner. TLA and the vast majority of the RSG organizations seemed pleased that the final remedy includes provisions for:

- DEQ to oversee compliance with the Agreement in perpetuity.
- DEQ to impose economic penalties for non-compliance, especially for mercury concentrations that exceed the limits.
- CMS to provide financial assurance of their capability to continue operating the leachate collection systems, and the treatment & disposal systems, and operating the installed mercury monitoring

systems (hundreds of mercury-flux monitoring wells) for the foreseeable future.

- CMS to improve the existing leachate collection pipelines, improve the storm-water management in the Pine Court Area, and install groundwater diversion wells.
- The problem to be managed with on-site remedies (minimal, if any, trucking of collected leachate), and no disposal well in Alba.

During the July 24th informal meeting, DEQ expressed a willingness to investigate and possibly implement a simple electronic communications system for annually communicating brief interpretative summaries of information from their overseeing activities to interested stakeholders. At least they may poll the stakeholder organizations to gauge the level of interest in receiving such a brief synopsis of CMS's previous year's work at the site. This communication would be in addition to DEQ posting details on their Website for the Little Traverse Bay CKD Release Site. As one of the primary stakeholder organizations, we anticipate that we would receive these electronic communications.

Call for Science Expertise

At the request of school administrators in the four districts we serve with the TLA Science Education Outreach Program (see article in this issue), the board agreed to invite you, our members, to offer your expertise and experience to students studying your field of science. The schools would like to be given a list of those former/present scientists who are willing to talk to a class or participate as an expert resource person in a science activity.

A list of "experts" will be given to the science teachers in Bellaire, Central Lake, Kalkaska and Mancelona with an invitation to call on the appropriate volunteer. Please include your full name, your area of expertise and your phone number and/or email address. The list will be compiled and delivered to each teacher by mail or email. If you are a part-time resident, please give the months you are here and could help. If you are a fulltime resident, please include that information, too.

If you would like to volunteer, please send an email to or call Patricia Roush at proush@torchlake.com or 599-2198.

Fish Shelters Project: Update

by Dean Branson and Fred Sittel

As this article is being written, a set of three fish shelters has been installed at each of 19 locations that were permitted by the DEQ for these five lakes; Torch Lake (3), Clam Lake (3), Lake Bellaire (3), Intermediate Lake (4), and Elk Lake (6). The DEQ permit identifies 82 locations where fish shelters may be installed from 2012 to 2017. A map showing the locations and GPS coordinates of each set of fish shelters can be downloaded from our Website: www.3lakes.com/FishSheltersMap.

This project is a perfect example of a very successful collaborative partnership with the following seven environmental organizations under the auspices of an Elk River Chain of Lakes-Watershed Plan Implementation Team:

- Friends of Clam Lake
- Intermediate Lake Association
- Elk-Skegemog Lakes Association
- Three Lakes Association
- Antrim Conservation District
- The Watershed Center-Grand Traverse Bay
- Tip of the Mitt Watershed Council

Part of the driving force for the success of this project has been a common belief and vision that fishing could be improved in these lakes by installing fish shelters that attract game fish and provide sanctuary for small fish. While fish shelters will help fishermen find the fish, other possible future projects are aimed at improving fishing by increasing fish populations and include improving shoreline fish habitat, stocking more fish, and improving habitat in tributary streams where some fish species spawn.

The idea of installing fish shelters in lakes is not new, but the need to first obtain a green light from a Michigan Department of Natural Resources (DNR) fish biologist, and then obtain a permit from the Department of Environmental Quality (DEQ) for each lake is new. There are historical maps showing the location of fish shelters installed long ago, and over the years there were stories of “Do-It-Yourself” fish shelters which often included Christmas trees and on rare occasions even an old car.

In 1977 the DNR collaborated with a Master Degree student from CMU, Bruce Pelletier to evaluate different fish shelter designs in Torch Lake and Lake Bellaire. The research conclusions reported in Bruce Pelletier’s thesis were basically the same as Leah Varga’s observations this summer based on multiple scuba dives on the newly installed fish shelters, i.e. fish rapidly colonize these structures, especially the wooden crates filled with brush. One big difference was in the design of the new shelters compared to those installed and evaluated by Bruce Pelletier, which included one type made from bundles of old tires. More recently fish shelters were installed in Elk Lake in 1991, in Lake Bellaire in 2005, in Hubbard Lake, and in Lake Charlevoix. The Elk River Chain of Lakes project team collaborated with the DNR on the design of structures made from all natural materials, such as hardwood and burlap bags filled with field stones and tied with hemp rope...no concrete blocks. Based on the DNR biologist’s suggestion, we are installing three different structures at each location; a hardwood crate filled with brush, a five-foot tall, fabricated hardwood structure called a slab tree, and a tree stump with its root ball intact.

One of the big challenges of this project is to make sure enough weight has been attached to each shelter to assure that it sinks when



deployed. A wooden crate filled with brush weighs about 290 pounds and requires at least an additional 150 pounds of fieldstone to make sure it sinks. Each slab tree is fabricated with about 140 pounds of poured concrete at its base.

Thanks go to our many volunteers for hundreds of hours spent gathering materials and building and deploying these shelters and to the individuals and organizations that donated money to help obtain permits and purchase lumber, nails, cement, special drill bits, natural hemp rope and other items. In addition the project team would like to recognize donations of materials and services by the following individuals and businesses:

- Dan Anderson & Joe Kessner for their assistance and use of their shelter-deploying pontoon: courtesy of D.R. Anderson services for boat-lifts and docks.
- Starbucks-Traverse City for donating used coffee bean bags for field stones.
- Lee Folsom for field stone; ballast weight for crates and stumps.
- Jim Goetz and Fred Vermeersch Farms for tree stumps and field stones.
- Phelps Sawmill, and Honey Hallow Wood Products, wood slabs for building stab “trees.”
- Alden Lumber-Central Lake for storing rough-cut lumber for wooden crates.
- L & R True Value Hardware-Bellaire for hemp rope.

If you are interested in volunteering to help construct and/or deploy fish shelters, please call 231-350-7234, or send us an email note: info@3lakes.com. For more information about this Fish Shelters Project, a flyer and PowerPoint presentation with underwater photos of installed fish shelters are posted on our Website: www.3lakes.com under Projects & Reports.

Public Outreach

by Leslie Meyers

Three Lakes Association undertook several educational opportunities this summer including a few “firsts.” As education is an important part of our mission, we stepped outside the proverbial box and took TLA on the road, and we took it “viral.”

In conjunction with our standard summer educational events, we set up a booth at each session. The first event, “Got Fish,” attracted not only 120+ attendees but also featured a set of fish shelters awaiting deployment. The second event, “Antrim County Underground,” boasted equal attendance as the first, and brought the TCE Plume 3-D model out of storage. Because of the manned booth at each event, we attracted several new members, collected over \$120 in donations to the Fish Shelter Project and encouraged a few members to become more active as volunteers.

One “first” this summer was setting up a working booth at the Antrim County Fair. The three-day event drew a crowd of over 2000! Thanks to a dozen TLA volunteers, we provided education and information to most. Scaled down versions of the Fish Shelters were built and set up in a fish tank, complete with minnows, and served as our main draw. There wasn't a kid (from 2-80) that could resist seeing what was going on in the tank. Once they were engaged by our Fish Shelter Program partnership, they became educated about Eurasian water milfoil, the importance of macroinvertebrate populations in our streams, the Science Education Outreach Program and our high school internship program. As an added bonus, Governor Snyder stopped by the booth on Thursday while it was manned by the Interns. He expressed concern over the Eurasian water

milfoil issue as it is also affecting the lake at his summer home. According to one Fair Director, “If there had been a Blue Ribbon for educational booths, TLA won hands down.”



Interns Zach Pederson, Alec Stilwell, and Sierra Kintigh share information with Governor Snyder

Our website, www.3lakes.com underwent a transformation and update this summer. Thanks to member KC Babb, numerous hours were invested to reorganize, update and add valuable information. The intent was to make it fresh and much more user friendly. If you haven't visited lately, please do.

We expanded the use of our Facebook page, too. By regularly posting updates, we have tripled our “likes.” These new “friends” represent a mixture of all generations. Are you a Facebook fan? Check us out at www.Facebook.com/3lakes.

We finished off the summer with a booth at the Bellaire Harvest Festival. Over 200 people visited us. Local Cub and Boy Scouts were on hand to run several activities including the pancake breakfast which led to most of them also stopping by the TLA booth. Several Scouts were very excited about the fact that in a few years they can have a chance to be a high school intern. Two of the troops asked if we had volunteers to assist with their water and environmental badges.

TLA will continue to share our message in as many ways as we can. In order to do this, we need your help. Can you spare a few hours to help? Let us know. Remember, you don't need to be an expert to help spread the word.

Membership Counts!

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Arlene Westhoven Explaining Macroinvertebrates



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Fish-Shocking in Shanty Creek



The Clam River Plume