TLWA

THREE LAKES WATERFRONT ASSOCIATION

LAKE STEWARDS SINCE 1967

Our Lakes – Our Responsibility: Fall 2023

President's Forum **Invasive Species-Who Cares?** by Fred Knoch

What is an invasive species? To some of us the answer is obvious. To others the answer is nebulous, and to yet others the answer is indifference. I thought I knew the answer. I, and others in the TLWA, have been waging battle against invasive species for 56 cumulative years. Our efforts have been towards remediation and education. I thought I had it all figured out, until I watched a recent documentary on PBS, the topic of which being invasive species. It made me think about my own perceptions of invasives and how they relate to the mission of the TLWA.

The definition of invasive species which I held as being most prominent in my ideation is this: a biological species occupying an ecological region in which it did not evolve. The species is therefore not indigenous to the area and has been introduced, either intentionally or accidentally. Simple, right? The documentary introduced me to an altogether different concept, one more subjective: An invasive species is one that humans do not like. An example of this concept is perhaps the Poison Ivy plant, indigenous to North America, but despised by humans, therefore invasive. An alternative example is a species introduced to an ecological system in which they are not indigenous (invasive) but are liked by humans. The perfect example is Hawaii, approximately 95% of everything one sees in Hawaii is an invasive species, but these are liked by humans, so tolerated. These seemingly contradictory concepts play out in the Three Lakes Chain.

Let's take an example of Eurasian Water Milfoil, not indigenous to the Chain, introduced by humans accidentally, disliked by humans, a no brainer, definitely invasive!

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Why is EWM disliked by humans? Unchecked, the weed grows aggressively and forms mats on the surface of the water which impedes aquatic recreation. Boats cannot easily traverse the mat, one cannot swim through it, it is an eyesore, and perhaps the greatest impact on humans, the reduction of property values. In response to this threat, the TLWA has pursued an aggressive program of containment and control to remediate the weed's impact. We have used all the weapons at our disposal. Prevention of AIS entering the lakes through the Clean Boats/Clean Waters landing inspectors, early detection of the weed through the cadre of Adopt Your Shoreline volunteers, hand harvesting using SCUBA divers and dive team, diver assisted suction harvesting (DASH), contracting professional remediation services, and finally application of herbicide. These are very costly weapons both financially and time consuming (over 1100 volunteer hours in 2022).

Let's take other examples. The Pale-Yellow Iris and the Purple Loosestrife are both not indigenous to our ecosystem (invasive) but are liked by humans. Is this similar to the Hawaiian ecosystem, where invasives are tolerated because they are liked? I have knowledge of individuals who decline to remove Pale Yellow Iris from their shoreline because they like the beautiful flower. The Purple Loosestrife has similar appeal. So, we have a problem, how do we convince riparian owners that these beautiful plants are not wanted? Both plants are harmful to the ecosystem in that they compete with the indigenous plants and often displace those to the point of eradication. Yellow Iris displaces the Blue Flag Iris, Purple Loosestrife propagates so profusely it crowds out native species.

So how does this difference in subjective human acceptance of the invasives affect how the TLWA attacks the problem? EWM not only is disliked by humans as an invasive but occurs in the public domain (the lake). The TLWA can therefore attack the problem on behalf of the public in general. The other invasives occur on individual riparian property, which must be honored. Remediation then falls upon the individual riparian owner to accept these plants as invasives and deal with them as their conscience dictates. The TLWA is always available to assist riparian owners in the management of these difficult invasives.

In the end, the TLWA can only be as effective against invasive species as the membership allows. We seem to have a unified approach to EWM which is accepted and applauded by the members, but the remediation of the "liked"" invasives is proving to be troublesome. Remember, we are all seeking a common goal of preserving the quality of the water which we value so highly. So, what is the answer to the question: Invasive Species-Who Cares? I hope the answer is: All of us! With that, I will take leave and I will see you on the water!

Fred
(*I'll be watching your shoreline.*)

BITS & PIECES

A. At the TLWA 2023 Annual Meeting representatives from the Wisconsin Valley Improvement Company explained the history of the WVIC and how it impacts the water level on the Three Lakes Chain. Burnt Rollways Dam is the only one in the state that has a boat lift that can handle 50 ft boats; **B.** Board members continue to meet monthly throughout the year in the lower level of the TL Library along with those that 'zoom'in; **C.** Several board members in June used their muscle to move various items used in our projects from the Three Lakes Town storage shed after a request to vacate. The TL Lions Club offered some of their space in their storage shed down the road to TLWA; **D.** TLWA Board Members, Paul Matthiae and Lynn Zibell, were recognized with Stewardship Awards by the Oneida Co Land & Water Conservation group. Presenting the award was Stephanie Boismenue.

VIRGIN LAKE HERBICIDE TREATMENT DELIVERS AMAZING RESULTS

by Jon Willman

The headline is true. For those of us on Virgin Lake, the results of the ProcellaCor herbicide application are nothing short of miraculous. No Eurasian Water Milfoil is visible from the surface or underwater at this time.
The story goes like this – over the last several years, a 12-acre area on the South end of the lake infested with EWM became so thick, we were unable to hand harvest the plants. The area was marked with buoys asking boaters to stay out. Three years ago, Onterra began a twice yearly "sub point-intercept survey" designed to monitor the percentage of EWM growth in the area compared to other native aquatic plants. The results showed new EWM growth had basically "taken over" the 12 acres in the three survey years. The result of the uncontrolled growth was "surface matting," which makes it almost impossible to swim, fish, kayak or boat in the area. Last Fall, armed with the latest survey data, the TLWA, Onterra and Virgin Lake riparians all agreed to apply to the Wisconsin Department of Natural Resources for a permit to treat the 12-acres with a relatively new herbicide called ProcellaCor.

The WDNR granted an application permit last Winter. More than half the approx. $20,000 treatment cost was paid by a grant from the WDNR with TLWA covering the remaining costs. Volunteers on Virgin Lake agreed to conduct all the pre and post treatment water sampling

The application of the chemical treatment of Virgin Lake began at 6am on June 16th.

required by the WDNR. With all the pieces in place, a contractor was selected and the treatment was scheduled for this past Spring. As part of the permit requirements, all riparians on Virgin Lake received notice of the upcoming treatment by TLWA in April.

Most of the designated application area of Virgin Lake has actually been treated with herbicides before. The most recent being nine acres in May of 2015 using a product called DMA-4. The treatment was minimally effective and the EWM quickly recovered. The ProcellaCor used in June is a new generation herbicide designed to specifically target Dicots – a type of plant which includes EWM.

Bubbles appeared days later on the treated Eurasion Water Milfoil.

Unfortunately, it also kills other Dicots such as native Northern water milfoil and Coontail. The good news is it has minimal or no effect on other aquatic vegetation such as Lilly pads, grasses and broad leaf aquatic plants. Testing has also shown fish, amphibians and reptile populations are unaffected.

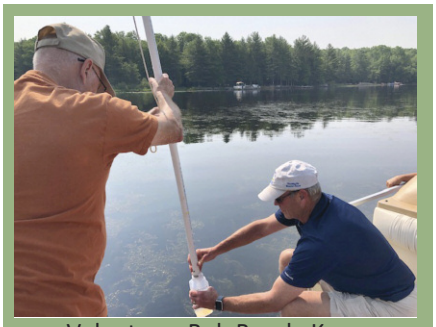
On Friday June 16th, the herbicide applicator mixed 2 1/2 gallons of ProcellaCor in a tank with 400 gallons of lake water. Using a specially designed boat with GPS navigation, the specified concentration of herbicide was "injected" throughout the designated treatment area.

June 19th, the dive team hand harvested EWM from areas adjacent to the treatment area. There seemed to be little change to the appearance of the EWM population outside the treatment area. June 26th, we again hand harvested outside the treatment area and found the EWM plants appeared to be turning brown and becoming fragile. The last hand harvesting dive of the summer took place on July 3rd. Our predive survey on July 2nd, revealed no EWM plants near the application area and very few plants visible from the surface in the far NE corner of the lake – a usually densely populated area. The team dove this area and found all the EWM plants in various states of dying and decomposition. Not only had the ProcellaCor killed the EWM in the 12-acre application

***Results** continued from page 3*

area, it also appeared to have dramatically decreased the EWM population in the other 249 acres of Virgin Lake and Julia Creek.

Our observations in early July were proven correct by weekly volunteer surveys of the entire lake. No EWM was visible from the surface. On August 14th, we dove the NE corner again looking for any EWM growth which might not be visible from the surface. We were concerned about new growth from the roots of the dead plants. We found none. We continued to survey the lake and as of September 14th, the lake and Julia Creek remains free of EWM. Our observations were verified by Onterra during their Fall survey completed on September 15th. Once their sub-point intercept survey of the 12-acre application area has been analyzed and compared with previous years' observations, we'll have more information to share.



Volunteers Bob Borek, Kerry Griebenow, Linda Woiak, and Lynn Zibell collected 31 post treatment water samples between June 15th and August 25th.

The question on everyone's mind seems to be "how long will the lake remain free of EWM?" It's not a simple answer. The experts are confident the 12-acre treatment area will remain clear through the summer of 2024. The rest of the lake is a bit of a guessing game. The EWM control outside the treatment area was a pleasant, but not totally unexpected surprise. With EWM, it's all about the roots. It's been proven the green part of the plant can die while the roots survive and regrow. At this point all we can do is wait, hope and prepare.

The water temperature was also taken at 3 ft. intervals down to 24 ft. in a deep area of Virgin Lake each time samples were taken.

On behalf of all the Virgin Lake property owners, I'd like to thank TLWA, Onterra and our dedicated group of volunteers for their continued support and cooperation. The divers and support crew have enjoyed a well-deserved break from our weekly hand harvesting trips. That said, we'll be back on the water next Spring watching for the first signs of new EWM growth and ready to take action.

Clean Boats Clean Waters

by Bob Agen

The 2023 Fall Report

For the first time in several years, we had three paid boat inspectors. Our two Three Lakes high school students and our returning senior did a great job this summer combining for 1345 hours. Remember, that is 1345 hours inspecting boats and engaging boaters. I hope to have all three back for 2024. Our small (10) but dedicated volunteers logged 306 hours this past year.

While seven landings did receive our attention, most of the hours took place at our busiest landings. In total, 3433 boats were inspected. The Townline landing led the way with 1099 inspections followed by the Burnt Rollways Lift and Dam with 1030. The landing next to the Sunset Grill restaurant saw 718 boats inspected and the Big Lake landing near CW Smith Road had 500 inspections. The remainder took place at the Medicine Lake landing off Highway X, the Laurel

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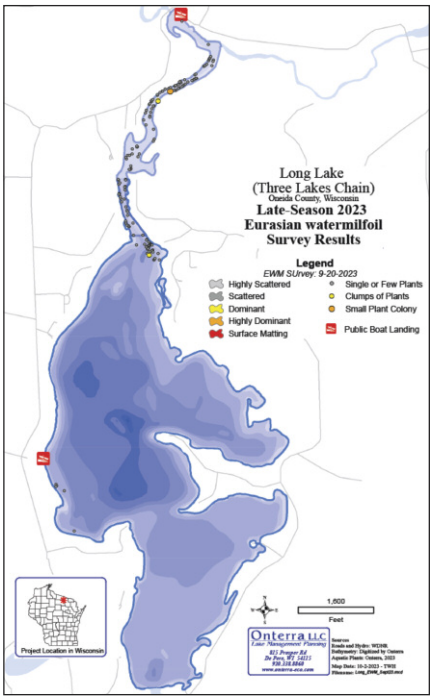
FALL SURVEY OF VIRGIN AND LONG LAKES by Todd Hanke, Onterra,LLC

Onterra ecologists conducted the late-summer EWM mapping survey on Virgin Lake on September 15, 2023. A monitoring component that took place during the visit was the replication of a sub point-intercept survey within an area of interest located directly in the site of the 2023 herbicide treatment application area. The data collected during this survey will be compared to pre-treatment replications of the survey which were completed in 2021 and 2022. Through the completion of the mapping survey and the point-intercept survey, no occurrences of Eurasian watermilfoil were located within Virgin Lake. Members of the Dive Team have reported observing and removing a few EWM plants near the newly replaced culvert. Onterra did not observe any additional EWM plants in this vicinity during the recent survey, but noted the presence of a few native milfoils on the northern part of the lake. There is currently no management technique that results in the eradication of EWM from a lake

Onterra records the lake vegetation gathered while surveying Virgin Lake.

with an established population like Virgin Lake. Therefore, it is expected that some amount of EWM persists in Virgin Lake and will be closely monitored in 2024. A formal report will be issued during spring of 2024 that details all of the EWM monitoring and management activities that took place in association with the 2023 herbicide treatment in Virgin Lake.

Onterra completed the late-summer EWM mapping survey on Long Lake on September 20, 2023. Three survey crews were on the water and searched all littoral areas of the lake for EWM including the stretch of the river channel leading to the Burnt Rollways dam. Many occurrences of EWM were mapped within the river channel and was similar to what was mapped in the area during 2022. In the main body of Long Lake, several single or few plants occurrences and one clump of plants were mapped in the northeast end of the lake in the same area where EWM has been monitored for the past few years. Four isolated single EWM plants were located along the western shores of Long Lake



south of the public boat landing. Overall the EWM population in Long Lake was similar between the 2022 and 2023 late-summer mapping surveys.

Lake Campground landing and the landing on Big Fork Lake off Four Mile Creek Road.

Volunteers and paid inspectors did remove several suspected samples of EWM from boats at the lift and a volunteer did remove a confirmed sample of EWM from a trailer at the Sunset Grill landing. However, no new major outbreaks of invasives were reported. Looking to next year, I hope to have three paid CBCW inspectors and of course will welcome back my volunteers.

Mini Grant Awarded to TLWA

The Three Lakes Community Foundation (TLCF) is pleased to announce that we have voted to provide the Three Lakes Waterfront Association with a $250 Mini Grant to support the 2023 Clean Boats Clean Water program. Three Lakes is fortunate to have many wonderful natural resources that residents, visitors, and guests enjoy year round.

“The Chain of Lakes is one of the most important natural resources and we are pleased to support your efforts,” stated Ginger Verch, vice chair of TLCF.

Lake Management Plan

by Norris Ross

Tensions

Lake ecosystems continually change over time. This is normal. The question is whether the change is directional and overly influenced by human activities?

All studies of lakes asking this question have generally concluded that the residential density per mile of shoreline is the key indicator of the lake ecosystem quality. Thus, shoreline development density and the activities in the developed structures have great influence on the quality of the lake ecosystem. The Public Trust Doctrine (the water belongs to all of us) and the uses of the near shore land reveal many tensions when the lake ecosystem is studied. No one item affecting the lake ecosystem by itself generally creates a great deal of "tension," but collectively they can create a great deal of tension within the total ecosystem.

Not all tensions will be discussed here, but some current tensions are all emerging at the same time and need to be highlighted.

The Lake Management Plans for all the lakes in the Three Lakes Chain contain color coded maps of the development status on all the near shoreline areas. These maps are now going on ten years old. If the studies are repeated in the near future, the color-coded maps will likely look very different for many of the lakes. The ratio of developed to undeveloped shoreline has clearly changed in recent years. The tension between development vs. natural shoreline has increased. Many lake-lots have been divided into smaller lots as the scarcity and value of lots has increased. We know that this increase in density will affect the lake ecosystem. How is it possible to mitigate or decrease the tension?

The next resulting tension occurs when the development results in the human uses of the property. How big is the development? How big is the septic? Is it a full-time residence? Is it a summer getaway used only several months a year? Will it be used as a rental property and as an income generator? All of these human decisions will create many more tensions in the lake ecosystem. They might also create more tension in the human ecosystem? How can this part of the ecosystem be studied and influenced? All of the near shore activity of lake residents and visitors will have large impacts on the quality and nature of the ecosystem moving forward. Leaving the tensions of the big city only to experience the same ones in the Northwoods can be frustrating. Offshore, the activities and use of the water will obviously have effects on the lake ecosystem dynamics. Ever increasing horsepower in boat motors and the overall size of the boats make for more potential impacts on the water ecosystem itself. Current follow-up studies might reveal some of these changes. Conflicts of differing types of "water enjoyment" arise and create more human tensions. Large boats traveling too close to shore are creating visible tensions as well as erosions. Conflicting activities during certain times of the day and over-lapping locations for these activities result in frustrations and more tension at times (i.e., large waves and fast boats vs. silent sports, fishing and other quiet activities).

Other human activities have greatly affected the lake ecosystem in more visible terms. Aquatic invasive species are being moved from place to place during many human activities. Eurasian Water Milfoil (EWM) is the poster child of a dramatic change that can occur when it is spread from lake to lake and town to town. But equally altering the lake ecosystem is the spread of microscopic organisms from place to place via boat ballast water of various types. These unwelcome microbes can substantially affect the balance in the lake ecosystem. All of these invasives can greatly affect enjoyment of the lake as well as affecting property values. The list of tensions is long when considering many other small sounding ones which have cumulative effects on our lakes.

Are we loving our lakes to death? Identifying the tensions that are already developing is one thing. What can be done to prevent the destruction of the lakes we love? Just as the ecosystem is a delicate

complex so may be the actions required to prevent a total collapse. This is a complex problem.

Every lake user and owner can take steps to help their own surroundings from becoming part of the problem. The TLWA has worked hard trying to get the message out – but it is difficult to get to the "visitors" just visiting and passing through. Join in the crusade – talk to visitors. Let them know what it takes to be good stewards of the lake while still having fun in the water.

As a TLWA member you have a wealth of information that is foreign to visitors. Spread our messages in a neighborly way!

Follow good steward practices yourself. Create the buffer zone on your shoreline that you have been putting off! Create a natural environment around your dock and waterfront areas. Forget about the beautiful lawn down to the water's edge.

Also, as we move forward, we must start telling our local and state elected officials what we see as problems. Let them know what you think should happen in the "Northwoods" so far from parts south! They do not know of our issues unless many residents start telling them!

Try to do your part to lower the tensions in our Chain ecosystem whenever you can. Get involved if possible. TLWA needs all the help and support it can get to try keep the Three Lakes water ecosystem in a healthy state for all to enjoy.

Frequent Complaint:
"Fishing is not what it was 30 years ago – the Chain is dead." *

by Norris Ross

1. The Chain has changed a great deal in 30 years! The number of people on the Chain, development around the Chain, and fishing pressure has greatly changed the "amateur" occasional angler's chances.
2. The Chain is far from being "dead." Some guides might say it is dead because they cannot get "amateur" anglers to get fish easily. They take clients to "fertile" lakes where fish are abundant. These lakes are no secret and are not a part of the Chain for the most part.
3. Ninety-five percent of fish caught without a guide are caught by 5% of the anglers. Most of the "5%" could make a living as a guide but choose not to.
4. The "5%" only fish when the fishing is "good." Good is based on their diligent studies and current "tips" from their buddies who are also a part of the "5%."
5. TLWA does not conduct fish studies nor fish related projects on the Chain. This is DNR's domain and not allowed by lake associations for the most part. Fish studies are conducted every year by the DNR, and all of the results are available on the DNR website.
6. There are no simple answers to these type questions nor is there a simple place to go and learn about fishing. Those who are good at it are life-long students of the sport and probably could not tell you where they "learned" it.

* A non-data opinion you probably do not want to consider.

Adopt Your Shoreline

by Dave Wheeler

Volunteers Needed!

Aquatic invasive species (AIS) are non-native plants, animals, or pathogens that can harm the ecology, economy, and human health of Wisconsin's lakes and streams. AIS can disrupt the natural balance of aquatic ecosystems, outcompete native species, reduce biodiversity, and degrade water quality. For example, Eurasian watermilfoil can form dense mats that block sunlight, reduce oxygen levels, and impede navigation. Zebra mussels can filter large amounts of water, alter the food web, and damage pipes and boats. AIS can also affect recreational activities such as fishing, boating, and swimming, and cause economic losses for tourism, fisheries, and property values. According to a

AIS Volunteer Dinner.

2009 study by the University of Wisconsin-Extension, AIS cost Wisconsin residents and businesses about $200 million per year in lost revenue and increased management costs. Therefore, it is crucial to prevent the introduction and spread of AIS in Wisconsin's waters.

One of the most effective ways to combat AIS is through the involvement of volunteers who can monitor and control the presence and impact of these invaders. Volunteers can help by conducting surveys, collecting data, reporting sightings, removing or treating AIS, educating others, and following best practices to prevent the transport of AIS. For instance, volunteers can inspect boats and trailers for any attached plants or animals and remove them before leaving a waterbody. They can also drain any water from their equipment and dispose of any unwanted bait in the trash. Volunteers can also participate in various programs and initiatives that support AIS management, such as the Clean Boats Clean Waters program, which trains volunteers to educate boaters about AIS prevention; the Citizen Lake Monitoring Network, which trains volunteers to collect water quality data and monitor for AIS; the Purple Loosestrife Biocontrol program, which trains volunteers to rear and release beetles that feed on purple loosestrife; and the Wisconsin First Detector Network, which trains volunteers to identify and report new or emerging AIS.

By volunteering for AIS monitoring and control, individuals can make a significant difference in protecting Wisconsin's water resources and preserving their natural beauty and value. Volunteers can also gain valuable skills, knowledge, and experience in aquatic ecology, citizen science, and environmental stewardship. Volunteering for AIS can also be a

AIS Workshop

rewarding and enjoyable way to connect with nature, meet new people, and contribute to the common good. Therefore, it is important to encourage more people to get involved in AIS monitoring and control and to recognize and appreciate the efforts of those who already do.

Anyone who is interested in volunteering for AIS monitoring and control can contact me or their TLWA Lake Captain listed in this newsletter for more information. We are also looking for replacement Lake Captains on Big Stone and Townline Lakes. These volunteer positions recruit, train and retain volunteers to monitor their lakes for AIS. They also periodically check their lake's perimeter for AIS and record their observations. Being a Lake Captain is an excellent way to meet your lake neighbors.

Join the fight against aquatic invasive species: Volunteer today!

A THANKFUL LAKE CAPTAIN

by Gary White

When Long Lake lake captain, Jack Werner, asked me if I would be interested in becoming his replacement, I was apprehensive to say the least. Many questions were floating in my head. I only said yes knowing Jack would help me out. The mission of our waterfront association was also a major factor. As all of us know the Three Lakes Chain is a valuable resource that needs the stewardship from everyone.

My many doubts were erased by the volunteers that came forward when opportunities arose. My gratitude to the following individuals and groups. First, Marty, Lois, and Jack for serving at the dam. Barb and others that alerted me when they found invasive plants on walks. The big issue for Long Lake was the appearance of Eurasian water milfoil. The team that dives weekly on our lake is outstanding. The team was made up of divers, volunteers on the pontoon, and kayakers and included the following individuals: Fred, Scott, Mike, Kerry, Jon, Linda, Rick, Jim, Mike, Sue, Bev, Vicki, Lorna, Karen, and Joe. I want to thank them all.

As one can see, a lake captain never faces any issue alone. If opportunities arise to volunteer please do so.

LAKE CAPTAINS

Big Fork Lake	**Kathy Olkowski**	**715-891-0367**	**kathleenrunner@yahoo.com**
Big Lake	**Steve Laszewski**	**920-562-0321**	**steve.laszewski@foth.com**
Big Stone Lake	**OPEN**		
Crystal Lake	**Jeffery Goelz**	**414-526-6703**	**jgoelz454@hotmail.com**
Crystal Lake	**Lionel Kliss**	**715-891-4673**	**lrkliss@gmail.com**
Deer Lake	**Jay Teagle**	**630-460-5362**	**jay.teagle@yahoo.com**
Dog Lake	**Gene Baltz**	**715-546-8109**	**gfbaltz@att.net**
Fourmile Lake	**Mike Gray**	**920-850-8091**	**mike.gray@valmet.com**
Fourmile Lake	**Lori Gray**	**920-850-8091**	**lagray1520@gmail.com**
Island Lake	**Doug Scheffen**	**715-891-5238**	**dougscheffen@aol.com**
Lake Julia	**David Mitzner**	**715-546-2583**	**david.mitzner165@gmail.com**
Laura Lake	**Charles Brady**	**651-408-2505**	**bradycharles@msn.com**
Laura Lake	**Mark Wallesverd**	**920-344-0698**	**walsvrd@gmail.com**
Little Fork Lake	**Mary O'Hara**	**715-546-8107**	**mcohara@att.net**
Long Lake	**Gary White**	**920-251-7388**	**garykarenwhite@charter.net**
Maple Lake	**Ron Bennett**	**815-351-7573**	**rjbennett247@gmail.com**
Medicine Lake	**Dick Wilder**	**715-891-3396**	**nwilder56@gmail.com**
Medicine Lake	**Nancy Wilder**	**262-424-3750**	**nwilder56@gmail.com**
Moccassin Lake	**Ryan Lamon**	**715-546-3351**	**ryan@watercraftsales.com**
Planting Ground Lake	**Norris Ross**	**715-546-2250**	**norris999ross@gmail.com**
Range Line Lake	**John Folaron**	**414-687-5900**	**john.folaron@outlook.com**
Round Lake	**Gwen Hutchins**	**608-556-1234**	**hutchinsfoundation@gmail.com**
Spirit Lake	**John Lake**	**619-980-7654**	**jrlncal@sbcglobal.net**
Thoroughfare	**Paul Matthiae**	**715-891-6154**	**pjmatthiae@gmail.com**
Townline Lake	**OPEN**		
Virgin Lake	**Bob Borek**	**715-546-3457**	**bobborek18@gmail.com**
Whitefish Lake	**David Wheeler**	**309-696-9855**	**darkhorse53@gmail.com**

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www.facebook.com/threelakeswaterfront
for information about our lakes and association!

TLWA
THREE LAKES WATERFRONT ASSOCIATION

Fish Sticks

by Jason Pertile, Three Lakes Fish and Wildlife Assn.

The Benefits of Woody Debris in Lakes

Woody debris, such as fallen trees, branches, and logs play a significant role in shaping benthic zones in aquatic ecosystems. The benthic zone refers to the bottom or substrate of a body of water, including the sediment and associated habitats. There are many benefits of having woody debris in lakes of northern Wisconsin. It provides habitat and shelter for a variety of aquatic organisms. Small invertebrates, fish, and other aquatic species use the spaces between and underneath woody debris for protection from predators and breeding sites.

As woody debris decomposes overtime, it releases organic matter into the water providing a food source for benthic organisms, including bacteria, fungi, and detritivores (organisms that feed on decaying organic material). These organisms are essential part to the food chains within the ecosystem of our waters Algae also attach to the surfaces of woody debris and form the base of the aquatic food chain. This algae growth can be an important food source for herbivorous organisms in the benthic zone.

In some cases, conservation and restoration efforts intentionally add woody debris "fish sticks" to aquatic ecosystems to enhance habitat for native fish and other aquatic species mentioned above. These efforts are particularly common in areas where woody debris has been removed due to human activities like shoreline viewing areas or creating beaches/swimming areas on lake front properties.

"Fish sticks" refers to a practice of using wooden structures, logs, or whole trees anchored to shore and submerged into lakes. The purpose of placing these structures in lakes is to create a more favorable environment for fish, which can produce several other benefits to lakes.

1) **Erosion control:** these structures help by breaking up wave action and stabilizing the lakebed, which is becoming vitally important due to the increase in size of boats and waves on our area lakes.

2) **Habitat enhancement and shelter:** provides refuge for fish and spawning habitat for some fish.

3) **Fishing areas:** by providing focal points for fish, these structures can help concentrate fish populations in specific areas, making it easier for anglers to catch fish.

The placement and design of these structures must be approved by the Wisconsin Department of Natural Resources (WDNR), and be in line with the specific needs of the fish species in the area. They are not to interfere with spawning habitat of walleyes. Improper placement or overuse of such structures can have unintended consequences. They are part of a broader

fisheries management plan which is why Nathaniel Lederman, Oneida County Fish Biologist, must give site approval to each site before any supplemental action takes place.

Not only has the Three Lakes Waterfront Association built a partnership with the WDNR but also with the Three Lakes Fish &

Wildlife Association. They are providing the volunteer manpower to work with landowners and install fish sticks in the Three Lakes waters and obtain site approvals by working with Nathan. This year six sites have been approved, including the three state-owned islands on the chain. The focus of the islands will be to prevent further erosion by securing the banks and establishing young tag elder growth along the edges of these islands.

If you are interested in having a part of your shoreline utilized for fish sticks, please contact Jason Pertile at upnorthguideservice1@gmail.com, as site approvals must be done before September 1st each year. Typical installation occurs the following winter depending on ice conditions. If you have naturally fallen trees please consider leaving them in their natural state and enjoy the benefits or letting Jason know as they could be utilized in other approved areas of the lake.

TLWA PROMOTES EDUCATION IN NATURAL RESOURCES by Lynn Zibell

The mission of the Three Lakes Waterfront Association is to maintain the health of the Three Lakes Chain and surrounding lakes. To help do this, the TLWA board felt it important to further the education of Three Lakes high school students in the area of natural resources. Since 1989 we have given a 2-year scholarship to a graduating senior who has the intention of going into natural resources. This year's recipient is Ruth Jankovic.

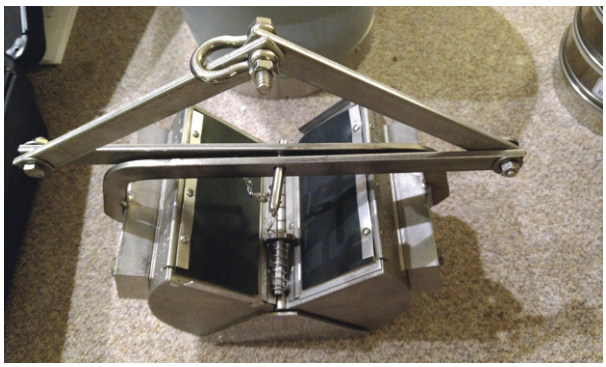
In thanking TLWA, Ruth said, "Many people overlook what our environment does for us, but I find a passion and cannot wait to pursue it with your help."

* * * * *

TLWA board member Ed Cottingham awarded Ruth Jankovic the 2023 TLWA scholarship recipient.

For the last several years, under the guidance of Three Lakes high school science teacher Al Votis, students gather and analyze water samples from area creeks and lakes using science equipment listed below and donated by TLWA at a cost of approximately $10,000.

- Horizontal water sampler
- Ponar bottom dredge for hard lake bottoms
- Ekman bottom dredge for soft lake bottoms
- Secchi Disc
- YSI Oxygen/Temperature/Conductivity Meter
- Swoffer Model 3000-13 Open Stream Current Velocity Meter
- Flow velocity meter
- Assorted dip nets, plankton nets, tub and buckets



Ponar dredge for hard bottoms

CLEAN WATER TAKES MUSSELS: A PEEK BENEATH THE WAVES TO WATCH FRESHWATER MUSSELS AT WORK

by Stephanie Boismenue, AIS Coordinator & Conservation Technician,
Oneida County Land & Water Conservation Dept.

Native freshwater mussels are inconspicuous, clean-water champions of our aquatic ecosystems. As filter feeding grazers, they continuously take in water through a siphon to feed on organic particles suspended in the water. As the water passes through their gills, it filters out not only their food, but also harmful bacteria, algae, pollutants, excessive nutrients (primarily nitrogen and phosphorus), and even metals, all of which accumulate in their tissues. The clean, enhanced water is then flushed through their exit siphon and back into the water column. A single freshwater mussel can filter at least 10 gallons of water a day. More mussels means more clean water. This results in improved water quality, improved food webs, and overall healthier lakes, rivers, streams and creeks. The critical role that mussels play in keeping our aquatic ecosystems clean and thriving is just as vital as pollinators are to the food we eat.

Student, Vinnie Terlizzi, displays this big guy, a Fluted Shell Mussel.

But, exactly how fast can mussels in our local waterbodies clean the water? The answer to this question came on a cold, gloomy day in September, when ten students from Mr. Votis' Global Science Class from Three Lakes High School, got out of the classroom and into the field to study stream ecology. Ninemile Creek was their sampling site and field station for the day.

One of projects was to study freshwater mussels. For the first half of the study, the students conducted a timed mussel survey to identify and quantify the mussel species in Ninemile Creek. Before they began the survey, the students received mussel monitoring training utilizing the Department of Natural Resource's Wisconsin Mussel Monitoring Program survey protocols. The









students then spread out in the creek, with their mussel collection bags in tow, and searched the sediment for mussels. They kept their eyes open for aquatic invasive species (AIS) as well. Within the twenty minutes, they collected 150 mussels and identified 9 different species that includes: Eastern Pondmussel, Fatmucket, Flutedshell, Giant Floater, Plain Pocketbook, Round Pigtoe, Spike, Three-ridge, and Wabash Pigtoe.

For the second half of the study, they conducted an experiment to see firsthand the changes in water clarity as a result of the mussels filter feeding behavior. The students filled two clear 50 liter containers with equal amounts of sediment and creek water. They carefully placed the mussels in

A tank shows the creek water with mussels in it and the other shows it without.

As their day progressed, students saw how mussels clarify creek water.

just one of the two containers of murky water and started timing the filtering process at 10:55 a.m. The students then carried on with the rest of their stream studies and stopped by the tanks often to evaluate the filtering process. By 1:15 p.m., the water in the mussel-filled tank was crystal clear and the water in the controlled tank was still murky. In fact, the time-lapse photos taken showed no change in the murkiness of the water at all. At that point, we ended the study before the mussels ran out of oxygen. The mussels were quickly, and gently, returned to the creek. No mussels were harmed during the survey or experiment!

Paul Matthie, far left joined the young scientists who helped with the mussell survey. Mr. Votis, far right is the science teacher at Three Lakes High School.

The extreme change in water clarity that occurred during the 2-hour and 20 minute study demonstrated how the mussels act as tiny water-treatment plants because of their constant filtering of microscopic organisms and debris out of the water, cleaning lakes, rivers, and creeks in the process. The study provided a better understanding of the crucial role mussels play in cleaning and enhancing aquatic ecosystems. The study also provided an opportunity for the students to engage in a conversation about the devastating impacts that AIS, such as zebra mussels, can have on the freshwater mussel populations.

For the rest of the day, the young scientists collected stream data including water chemistry and stream flow, searched for aquatic invasive species, studied shoreline structure, collected macroinvertebrates and viewed them under their microscopes, and removed trash from the creek. Mussel monitoring data is reported to the Wisconsin Mussel Monitoring project in INaturalist.

This Global Science field day took place on September 13th, on Ninemile Creek, in Oneida County, WI. Instructors were Mr. Votis from Three Lakes High School; Paul Matthiae, volunteer instructor; and Stephanie Boismenue, Aquatic Invasive Species Coordinator & Conservation Technician, Oneida County Land & Water Conservation Department.

Please note: Freshwater mussels and clams are protected species in Wisconsin and it is illegal to harvest live mussels and clams from inland waters of the state. Of the 52 mussel species that occur within Wisconsin's lakes, rivers, streams, and creeks, 24 mussels are listed as threatened, endangered, or of special concern.

Purple Loosestrife

by Paul Matthiae

Purple Loosestrife Control – Year 5

Three Lakes Waterfront Association has now completed its fifth year of attempting to control the spread of the invasive Purple Loosestrife (PL) plant on Planting Ground Lake. A native of Europe, PL was largely introduced through commercial horticulture services. PL thrives in moist and saturated soils, and shallow waters such as shorelines. PL out competes native vegetation and will eventually form large dense patches that can spread covering landscape scale acreage. The plant has little if any value to native fauna.

Our primary control technique remains using Cella beetles as a biological control agent. Cella beetles have been introduced from Europe (after thorough vetting by the USFWS) because they feed exclusively on PL. We raise the beetles in net cages where they feed on transplanted PL plants. The beetles are prolific, producing multiple generations within 6-8 weeks of captivity.

Timing is everything. Our severe late winter conditions set back plant growth at least two weeks. We also believe that the protracted Canadian wildfire smoke further retarded PL growth. So, by early July our plants were only 3' – 3 ½ feet tall (instead of 5'+) and our rapidly expanding crop of beetles and their larva were on the verge of killing many of our plants and their own food sources.

It was time to move the plants, along with the eggs and larva they supported, and all of the free flying beetles in the cages. While a crew was being organized to make the move to the lake, several board members made a second reconnaissance trip. The first reconnaissance in late June was unsuccessful, the wild growing PL were not visible. Two weeks later the plants were just visible and beginning to bloom.

What we found was truly heartening. Large patches were limited to two locations, all other locations were single plants or small clusters of 2-4 plants. The many larger patches present four years ago were gone! On July 21st, with the assistance of Oneida County AIS staff and TLWA volunteers, the beetles were captured (would you believe with sniffer bottles and vacuum cleaner), 110 plants were bagged in nylon netting and loaded on three pickup trucks for travel to Planting Ground Lake. Four hours later, via pontoon boat and canoe, the plants and beetles were placed and released among the invading PL. If the beetles continue to be as effective as they have been in the last four years we may achieve substantial control of this invasive in a few more years.

Without shoreline restoration, geese appreciate "city" lawns in the Northwoods. They also leave quite a few "presents" for owners to enjoy cleaning up!

TLWA WEBSITE RESIGN by John Ray

Webmaster Paul Wussow decided to step back from his 14 years of designing, implementing and maintaining the TLWA.org website and supports a redesign and upgrade of the site with new technology to bring us into the future. We extend our sincere gratitude for Paul's dedication during that formative period of our internet presence and his assistance in the changeover.

The newly designed site will offer enhanced security, options for online donations and membership dues payment, membership status, calendar of events and the latest news. The cache of information users have learned to expect will continue to include links to TLWA publications, Onterra Research reports, special projects such as Clean Boats/Clean Waters, Shoreline Monitoring, AIS updates, Volunteering, Fish Sticks, etc. In addition, we plan to provide a full range of links to representative agencies for those questions that arise when living and playing on the water. Maps of your favorite lake and a live camera feed are also under consideration.

The revised architecture will provide ease of navigation for the user and new applications will present an efficient way to maintain and update the website. The functionality and enhanced content will drive more traffic to the site to help spread the TLWA message to our local and extended communities. The target date for the new site launch is early February 2024.

A CHANGING OF THE GUARD by Ed Jacobsen

The Three Lakes Waterfront Association has had a very strong, informative, and all-encompassing website. That website has been managed extremely well by our long time board member, Paul Wussow. Paul assumed the job of web master fifteen years ago, when the internet was the wild west of information presentation. Logos, websites, identities and domains could be stolen, squatted upon, hacked and infiltrated by the least sophisticated internet criminals. Paul not only prevented that from happening, but made the website the one place members could go to get the latest information on

anything waterfront-wise. In the eight years of my presidency the board simply took our webpage for granted. "Paul will handle it". Not one of us knew the slightest thing about webpages or how they worked, but Paul quietly administered ours and that was all we wanted.

In that time websites had to accommodate computers, later they were reformulated for tablets, then phones, then iphones and all that came as the information age grew and expanded. Paul adapted our website as these changes occurred. We are all grateful to Paul for all that he did to help us get to the point we are at today.

We will soon have a new webmaster and Paul will have some free time to look back at all he did to keep us abreast of radically changing times. Thanks Paul Wussow!

TLWA SHIRTS & HATS

TLWA shirts and hats are available at Northland Clothing Company in downtown Three Lakes. The shirt depicts the Three Lakes Chain of Lakes and TLWA logo. Available in grey. $25/shirt or hat

Think Christmas!

Membership Update and new Online Payment Options

by John Ray

It might interest you to know that the Oneida County Land records lists 2260 lakefront properties on the Three Lakes Chain. Of these, there are 1766 unique mailing addresses and therefore a sizable pool of individuals that have a vested interest in maintaining the quality of our lakes. We'll call them the "Lakefront Community". Our membership base historically hovers around half of this community. The Fall 2023 Membership drive included email notifications to all current and past members to notify them of their renewal dates and provided a link to make secure online payments through our new vendor "Square".

All in all, many organizations would be quite satisfied with this degree of participation but I believe we can and need to get everybody on board the "TLWA Lakefront Community" boat. Maybe it is just a matter of getting the word out. In Q4 of 2023, TLWA will mail a brochure to all property owners that do not have an email address on file as one way to reach out to these "persons of interest".

What more can be done? There is tremendous knowledge, experience and acumen within our current member ranks and if you are reading this article right now, I am talking about your skills. Perhaps you have experience in membership activities and you want to volunteer to help our organization grow. One idea that has been bandied about and may take root is creating a "Membership Ambassador" for each lake similar to the "Lake Captains" of shoreline monitoring fame. The Ambassadors' main goal is to knock on doors (kayak up to a pier?) and talk to people extolling the benefits of joining our community. Maybe you are a "people person" and thoroughly enjoy making new acquaintances. Perhaps you have experience and love "cold call" sales; only in this case you have a great product for sale at a bargain price and everyone wants one. If you are interested in learning more about becoming a Membership Ambassador or have ideas to increase our participation email me at tlwa_membership@icloud.com.

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For information regarding important issues impacting our lakes and Your own lake property, visit the TLWA website at: **www.TLWA.org** or contact TLWA by emailing jaketheoilguy@yahoo.com