Winter
2016

Vol. 51 No. 1

THE MICHIGAN RIPARIAN

www.mi-riparian.org

Riparian (ri-'pair-ee-en) adj. Relating to or living or located on the bank of a natural watercourse, such as a river, or of a lake or a tidewater.

DEVOTED TO THE MANAGEMENT AND WISE USE OF MICHIGAN'S LAKES AND STREAMS Published Quarterly

Published and designed specifically for waterfront property owners and enthusiasts

Big Sable Point Lighthouse was honored as 2013 Featured Lighthouse of the Year for the Great Lakes Lighthouse Festival. This 112 foot black and white striped lighthouse is located on the shores of Lake Michigan at the Ludington State Park.

THE MICHIGAN RIPARIAN

www.mi-riparian.org

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THE MICHIGAN RIPARIAN is the only magazine devoted exclusively to the protection, preservation and improvement of Michigan waters and to the rights of riparian owners to enjoy their water-front property.

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The Michigan Riparian
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FROM THE PUBLISHER

The Latest Happenings in and Around Our State

If you are a year-round Michigander, you might miss the warmer weather our southern and western-bound friends enjoy, but our determination to 'stick it out' is rewarded with Michigan's unique winter beauty. The picture of the snow-covered dunes at Ludington State Park on the front cover is a great example of what I mean.

We would love to hear the story of your winter adventures. Why not send us a picture or two--whether it's ice fishing, skating, snowshoeing or, if you are really up for it, taking a refreshing polar plunge. In fact, we have listed some of the most popular polar plunge sites in Michigan. Why not consider getting involved with the Special Olympics through this event? Just think of your fame when we publish your polar plunge photos (see page 11 for more details)!

The goal of *The Michigan Riparian* magazine is to create more awareness of the benefits of good stewardship of our inland waters, provide you with information regarding the latest issues affecting our waters, and entertain you along the way. We provide you with current legal and policy-oriented articles as well as new and ongoing challenges facing riparians. Be sure to read Scott Brown's MLSA feature on page 25 about the critical need for legislators to develop a policy to adequately fund aquatic invasive species management.

In the fall 2015 issue of *The Michigan Riparian,* we featured a story from the Tip of the Mitt about Michigan pipelines. We have continued to showcase that hot topic with an in-depth pro and con view about pipelines from both sides of the issue. See page 20 and read how Enbridge and FLOW each weigh in.

Follow Cliff Bloom's Attorney Writes feature to get his perspective on the growing problem on Torch Lake. The hundreds of sand bar partiers on Torch Lake on the 4th of July have had extensive coverage in the news and are a growing concern each summer for lake residents. See page 5 for details.

Our Michigan inland lakes are vulnerable and are threatened by exotic invasive aquatic species. We have provided two articles with several photos and details about them. Read about the threat of crayfish on page 7; and page 18 will provide you with everything you need to know about common invasive aquatic plants in our inland lakes.

We hope you enjoy this issue of *The Michigan Riparian* magazine, and don't forget to make plans to attend the annual conference this spring. Details on page 28.

I hope 2016 finds you and yours happy and healthy! Happy New Year!

-publisher, Sharon Wagner
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"I Can No Longer Even Enjoy My Lake..."

By: Clifford H. Bloom, Esq.
Bloom Sluggett Morgan, PC
Grand Rapids, Michigan
www.bsmlawpc.com

Are you a riparian who owns a waterfront property with a sandbar off your shore where many boat owners gather on weekends during the summer? Or, were you one of the unfortunate lakefront property owners on Torch Lake in the vicinity of the thousands of boats that congregated *en masse* during the nightmare party that occurred over the 4th of July weekend in 2015? If so, you may be one of the many riparians throughout Michigan who ponder whether their waterfront problems have become so severe that selling their inland lake waterfront property is the only solution. If so, you are not alone.

Tolerating a crowded inland lake during a Michigan summer is one thing. Enduring significant numbers of boats congregating together on a sandbar or other areas on an inland lake with dozens, hundreds or even thousands of people partying, drinking heavily, playing loud music and generally disturbing the peace is quite another matter. Such situations have often been referred to as the "party barge" or "sandbar from hell" problems. Unfortunately, there typically is no easy solution to these problems.

Riparians faced with these problems potentially have both civil remedies and government remedies. Unfortunately, the civil remedies are likely impractical and ineffective. Under the Michigan common law, boaters have the right to temporarily anchor on the riparian bottomlands of another to engage in navigable conduct. Clearly, anchoring for a limited period of time for fishing, seeking shelter in a storm or simply enjoying the scenery is generally allowed. Anchoring on the bottomlands of another for long periods of time for partying is likely not permissible under the common law. The potential civil remedy, however, would involve filing a lawsuit against the offenders, which can be both costly and time consuming, with the possibility that the riparian might not prevail. More importantly, such civil lawsuits are normally totally impractical, as a court order after a lawsuit only binds the parties involved. With the type of violators in party barge or sandbar situations, they are generally different people for each violation incident. Furthermore, the riparian often cannot determine the names and addresses of even one or more of the violators. Hence, civil litigation would normally be for naught.

Theoretically, the better solution to these problems would be local government action. Unfortunately, however, in the past, the tools available to local government officials to solve these problems were limited. Also, in many cases, local government officials did not have the political will or desire to solve the problems by definitive local municipal action.

Individuals involved in the party barge or sandbar situations may already be violating one or more existing state laws or local ordinances

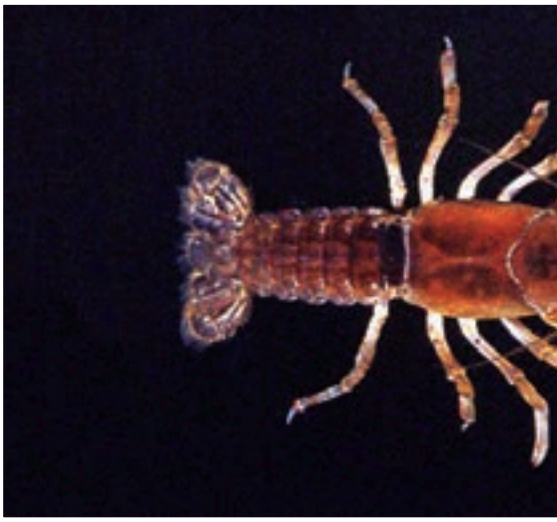
Importantly, though, many of the individuals involved in the party barge or sandbar situations may already be violating one or more existing state laws or local ordinances. Local police officers, sheriff deputies, and Department of Natural Resources officers can issue tickets for disorderly conduct, public indecency, drunk boating, disturbing the peace and similar infractions. In order to expand police efforts, some marine safety patrols (or the local police or sheriff's department) will enter into a contract with a lake association or local government to increase lake police patrols and enforcement for a price. Special assessment districts can often be set up to fund such increased police efforts.

Unfortunately, there typically is no state law or local ordinance by which a police officer or sheriff deputy can require boats to disperse from a sandbar or party barge situation where no other laws are being violated (for example, the partiers are not engaged in disorderly conduct or disturbing the peace). Furthermore, it would be difficult to draft, enact and enforce a local municipal ordinance disallowing boat congregation. How would such an ordinance be drafted? Would it apply only if five or more boats congregate together? Ten boats? And for how long – two hours, six hours, eight hours? Such ordinances would be difficult to enforce and could be invalidated by a court for being arbitrary or vague.

There are some novel approaches, however, that the townships around Torch Lake (and other municipalities throughout Michigan with similar problems) could undertake. First, the local zoning ordinance could be amended to make it clear that any person, group, business or organization that sponsors or promotes an event like that which occurred at Torch Lake last summer would need a special zoning approval in advance of the event. That could also be handled by a police power ordinance separate from the zoning ordinance. Pursuant to such an ordinance, there could be prior notice requirements, licensing regulations, requirements for the posting of a bond or monetary security for damages, limitations on hours and similar regulations. Such an ordinance or ordinance provisions could be applied to organized lake events, fishing tournaments, boat races and similar events.

Another novel approach would be the adoption of a local ordinance by which police officials could declare a "lake emergency" or the equivalent. Pursuant to such an ordinance, where the congregating of a large number of boats and watercraft in an inland lake (or many individuals partying on the bottomlands of a lake or shoreline

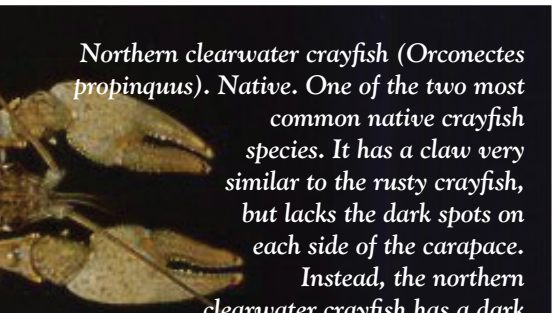
(Continued on page 8)



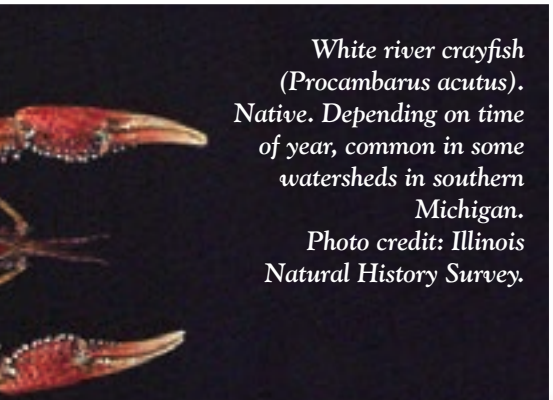
Red swamp crayfish (Procambarus clarkia). Invasive. Claws of this species are dark red with raised, bright red spots covering the body and claws. They also have a black, wedge-shaped stripe on the top of the abdomen. They may vary in length between 2 and 5 inches. They look and behave similarly to white river crayfish, except they are far more aggressive. Photo credit: I. Duloup. Licensed under CC BY-SA 3.0 via Commons.

Devil crayfish (Cambarus diogenes). Native. Photo credit: Illinois Natural History Survey.

Digger crayfish (Fallicambarus fodiens). Native. Photo credit: Illinois Natural History Survey.



Northern clearwater crayfish (Orconectes propinquus). Native. One of the two most common native crayfish species. It has a claw very similar to the rusty crayfish, but lacks the dark spots on each side of the carapace. Instead, the northern clearwater crayfish has a dark brown-to-black patch on the top of the tail section. This gives the impression that a light-colored stripe runs along each side of the tail section. Photo credit: Illinois Natural History Survey.



White river crayfish (Procambarus acutus). Native. Depending on time of year, common in some watersheds in southern Michigan. Photo credit: Illinois Natural History Survey.

MICHIGAN CRAYFISH

Understanding our Native and Invasive Species

By Alisha Davidson, PhD
ML&SA Research and Development Coordinator

For many Michigan riparians, crayfish hold a unique and often sentimental place amongst lake fauna. As the largest crustaceans in Michigan inland lakes, these animals are highly visible (and easily caught by kids with a bit of finesse and a snorkel). Most lake users would be familiar with the northern clearwater crayfish (*Orconectes propinquus*) or virile crayfish (*Orconectes virilis*), the two most common species. Other natives include the calico crayfish (*Orconectes immunis*), the digger crayfish (*Fallicambarus fodiens*), the devil crayfish (*Cambarus diogenes*), painted hand mudbug (*Cambarus polychromatus*), white river crayfish (*Procambarus acutus*) and the big water crayfish (*Cambarus robustus*). These native species play an important role in the ecosystem as prey species for fish and predators of snails and other aquatic insects and plants.

Unfortunately, Michigan inland lakes are threatened with several invasive crayfish species. The rusty crayfish (*Orconectes rusticus*) is already a common invasive in Michigan waters. Rusty crayfish are native to Ohio and Kentucky, but have spread to several Great Lakes states and beyond. They have been (and continue to be) transferred to and around Michigan in two ways. First, anglers use them as bait and accidently release or intentionally dump them overboard at the end of a day's fishing. Second, hobbyists stock them in their aquaria and release them into the "wild" when they outgrow their tanks. This species is restricted in Michigan – possession of this species is illegal except for purposes of destroying them for consumption, fertilizer or trash. For more information on this species, visit the rusty crayfish fact sheet at nas.er.usgs.gov.

Another invasive is the red swamp crayfish. This species is native to the southern US and is highly aggressive. It has already invaded Illinois, Wisconsin and Ohio (as well as overseas in Europe) through the same means as the rusty crayfish. The red swamp crayfish can tolerate a variety of environmental conditions; notably, it can withstand dry periods of up to four months and can walk several miles over land in search of a water source. In June 2015, several red swamp crayfish were found in a bait dump at a Holland city park. Concerned that live individuals may have made it into nearby waters, the Michigan Department of Natural Resources (DNR) sampled for this species in Lake Macatawa but luckily found no live individuals. As of September 2015, the red swamp crayfish is considered not present in any Michigan waters. Sale or possession of this species is prohibited in Michigan. For more information on this species, visit the red swamp crayfish fact sheet at nas.er.usgs.gov.

(Continued on page 9)

Big water crayfish (Cambarus robustus). Native. More common along east side of the state and less so on west. Photo credit: NCWRC.

"I Can No Longer Even Enjoy My Lake..."

(Continued from page 5)

See our spring 2016 issue for more on Torch Lake sand bar parties

thereof) creates a navigability hazard, a safety emergency or similar problem, a police department could declare the situation to be unsafe or a hazard to navigability and police officers would then be authorized to disperse the congregated boats or crowds. The violators could also be ticketed by the police.

Would statewide legislation help alleviate these problems? It is possible, but unlikely, given the strength of the boating and related lobbying groups.

Finally, any business, person or group that would sponsor a large-scale lake event also runs a significant liability risk, particularly if the event gets out of hand, individuals become unruly, people are injured or killed or property damage occurs. In some cases, those who sponsor or promote the event could be sued for damages. The risk would be particularly high for a sponsoring or promoting restaurant, tavern, party store or other business with a state liquor license, as their liquor license could potentially be put in jeopardy.

Some people have little or no sympathy for riparian property owners in these situations. They assert that the waters of an inland lake with a public access site is public property and that the riparians should expect to have significant (even crowded) public use. However, such arguments fall flat for at least two reasons. First, people normally do not have the legal right to utilize the bottomlands of a riparian property owner for partying without the permission of the riparian property owner. Second, no one should have to put up with the extreme crowds, vandalism and severe health and safety issues frequently involved in these situations. The Torch Lake incident in 2015 resembled an invasion, not just "good clean fun". Those who claim that riparians should simply put up with these problems as an incident of ownership on a public body of water should consider the following analogies. How would you feel if you owned property next to a public park or campground and several times a year there was a "mini-Woodstock" event next door on the public property (with spillover and trespassing onto your property) involving huge crowds, partying, excessive drinking of alcohol and general disturbance of the peace? Or, since the public road right-of-way for most public roads goes 20 to 30 feet into a private property owner's front lawn, how would that property owner feel if members of the public decided to stage a party in the front yard with large numbers of people involved in drinking and rowdy behavior? When one considers those analogies, everyone should have empathy for the riparians who must suffer from the out-of-control party barge or sand bar problems.

Hopefully, local governments and police officials will be able to work with Torch Lake riparians to prevent the type of huge problems that occurred during the 4th of July weekend at the lake last summer.

MICHIGAN CRAYFISH

(Continued from page 7)

Both species can displace native crayfish populations due to increased aggression, size and growth rate. Rusty crayfish can also hybridize with the northern clearwater crayfish; the hybrids are more vigorous than the pure northern clearwater populations so outcompete and displace them. Both species can also reduce the size and diversity of aquatic plant beds, which are important for providing nest sites and habitat for fish, food for fish and ducks, and erosion control through wave minimization. They also cause the decline of game fish such as bass, bluegill and northern pike through consumption of fish eggs and competition with fish for food. Even fish that protect their nests from predation like bass and bluegill may not be able to defend their nests from these aggressive invasive crayfish. Red swamp crayfish can even eat adult fish and amphibians. For homeowners, the red swamp crayfish is a particular nuisance because its burrows can decrease shoreline stability and increase erosion. In southeast Wisconsin, they have caused significant damage with high control costs.

No eradication methods have yet been found for either the rusty or red swamp crayfish – so once introduced, these invasive crayfish species are here to stay. Important actions to prevent these species from arriving and spreading throughout Michigan include: learn how to identify both the rusty and red swamp crayfish (see pictures) and NEVER use or release these species in the wild (land or water). Finally, the DNR is asking anyone who thinks they have found a red swamp crayfish — dead or alive — or have seen someone using them as bait, to call the Report-All-Poaching hotline at 1-800-292-7800.

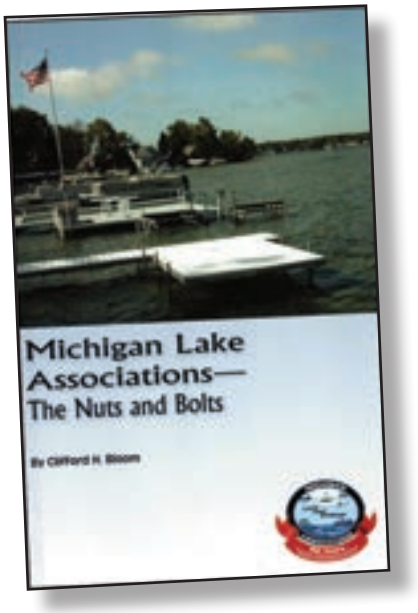
Calico (or papershell) crayfish (Orconectes immunis). Native. Photo credit: Astacoides (Own work) [GFDL or CC BY-SA 3.0], via Wikimedia Commons.

Virile (or northern) crayfish (Orconectes virilis). Native. One of the two most common native crayfish species. Compared to the rusty crayfish, the virile crayfish can often be distinguished by its claws, which are blue and have distinct white, wart-like bumps. The rusty crayfish claw, by comparison, is grayish-green to reddish-brown and is smoother. Photo credit: MDC.

Paintedhand mudbug (Cambarus polychromatus). Native. Occurs in southern areas of Michigan, almost identical to the devil crayfish but less common. Photo credit: Andrew Hoffman.

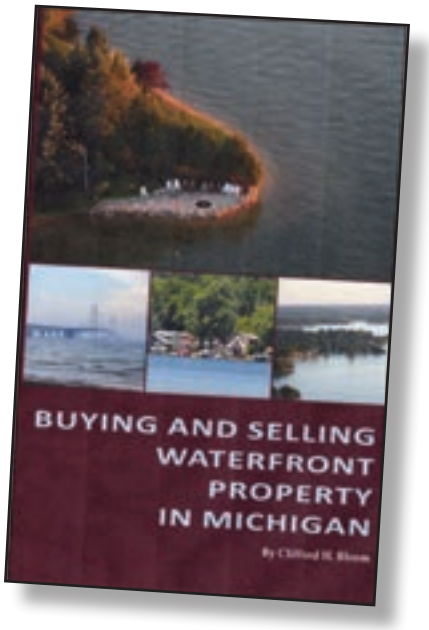
Rusty crayfish (Orconectes rusticus). Invasive. A commonly found species. This species can generally be identified by their more robust claws, which are larger than the virile crayfish, and by the dark, rusty spots on each side of their carapace. The spots are located on the carapace as though you picked up the crayfish with paint on your forefinger and thumb. The spots may not always be present or well developed on rusty crayfish from some waters. Photo credit: Jeff Gunderson/Minnesota Sea Grant.

Two Books Written by Clifford H. Bloom and Published by ML&SA to Benefit Lakefront Property Owners In Michigan!



Are you and your lakefront neighbors pondering the creation of a lake association? Would you like to improve an existing lake association? Are you wondering about the legal ramifications of forming a lake association in Michigan? If so, this book will provide you with every detail and answer every question you may have regarding lake associations!

Nuts and Bolts
Price $15.50 plus S/H
(Quantity discounts available)



Considering the sale of an existing lakefront property? Are you looking to buy lakefront property in Michigan? Do you understand the legal ramifications and common pitfalls that you may confront? The purchase of this book could save you tens of thousands of dollars and/or the grief and headache of regretting your lakefront property transaction decisions.

Buying and Selling Waterfront Property
$20 plus S/H
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To purchase these books, contact ML&SA Central Office Manager
Sharon Wagner at swagner@mlswa.org or visit our website at www.mymlsa.org

Waterfront Book ☐ **Nuts and Bolts** ☐

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Send us your lake association newsletter or special announcements electronically. We love hearing from your lake. We will continue to use and spread the interesting and informative things happening on your lake in The Michigan Riparian. Please send your lake association newsletter to: swagner@mlswa.org.

29 Polar Plunges in 2016!

Ever thought of registering for a Polar Plunge? Looking for a really fun spectator event? Read on....

From the Special Olympics Michigan Website

What is the Polar Plunge?

The annual **Law Enforcement Torch Run®** (LETR) Polar Plunge series is known for its zany costumes and courageous participants. After raising funds, these participants dress up in costume and prepare to plunge, ready to jump in and freeze their fur for a good cause. Funds can be raised by collecting pledges from friends, family, co-workers and neighbors.

Proceeds from these plunges help support year-round sports training and athletic competition for more nearly 21,000 children and adults with intellectual disabilities in Michigan.

Twenty-nine Law Enforcement Torch Run® Polar Plunges will take place throughout Michigan in January, February and March 2016.

To get involved, visit **www.firstgiving.com/polarplunge** and register for a Polar Plunge. A complete list of dates and locations, including links to online registration for each site, can be found at the bottom of this page.

At your FirstGiving site, you can set up an online pledge page and receive pledge donations for Special Olympics Michigan and keep track of money raised. Your FirstGiving online fundraising page will stay active for three months after the event. This is a great opportunity to change your photo to show your plunge and continue to raise funds!

Publishers Note: Please send us your Polar Plunge pictures. We would love to share them in the next publication. Send them to: swagner@mlswa.org.

POLAR PLUNGE®

2016 Locations

January 16, 2016: Lake City - Town Pump Saloon
January 30, 2016: Jackson/Clark Lake - The Pointe Bar and Grill
January 30, 2016: Livingston County - Brighton High School
January 30, 2016: St. Joseph - The Inn at Harbor Shores
February 6, 2016: Fenton - Fenton Moose Lodge
February 6, 2016: Gaylord - Alpenfrost
February 6, 2016: Muskegon - Fricano's
February 6, 2016: Traverse City - Grand Traverse Resort and Spa
February 13, 2016: Cheboygan - Hoppies Tavern
February 13, 2016: Grand Rapids - East Grand Rapids Middle School
February 13, 2016: Greenville - Turk Lake Restaurant and Bar
February 20, 2016: Belleville - BYC
February 20, 2016: Holland - Ottawa County Fairgrounds
February 20, 2016: Kalamazoo - Bell's Brewery
February 20, 2016: Mt. Pleasant - O'Kelly's/Wayside
February 20, 2016: Saginaw - G's Pizza/Haithco Park
February 21, 2016: St. Clair - St. Clair Boat Harbor
February 25, 2016: Legislative - Capitol steps in Lansing
February 27, 2016: Alpena - Sand Bar
February 27, 2016: Bay City - Delta College Planetarium
February 27, 2016: Chippewa Lake - Chippewa Lake Public Access
February 27, 2016: Detroit - Cheli's Chili Bar
February 28, 2016: Lansing - Eagle Eye Golf Course
March 19, 2016: Marquette - Marquette Mountain
March 20, 2016: Sault Ste. Marie - The Elks
TBD: Battle Creek - H2O Restaurant
TBD: Higgins Lake - Gerrish Township Marina
TBD: Sylvan Lake - Sylvan Lake Community Center
TBD: Ann Arbor - The Big House, University of Michigan

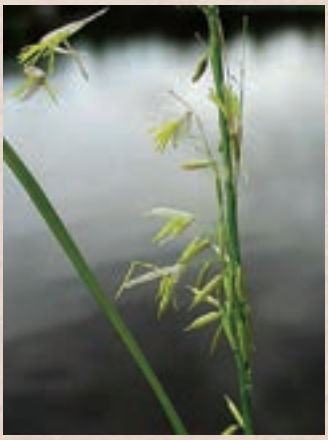
ASK THE EXPERTS

If you have a question about water related issues, riparian rights, and/or lakes and streams, etc., let us know by email or snail mail.

Email: swagner@mlswa.org
Mail: The Michigan Riparian
300 N. State St., Suite A,
Stanton, MI 48888

Question: Is northern wild rice considered an exotic aquatic invasive species in Michigan?

Answer: Northern wild rice (scientific name: *Zizania palustris*) is native to Michigan, Wisconsin and Minnesota as well as Great Lakes region Canadian provinces and is therefore not considered an exotic species. The "official" grain of Minnesota, northern wild rice is viewed as highly beneficial aquatic plant that contributes to good water quality and provides critical habitat for waterfowl and other creatures. Moreover, northern wild rice is considered an important food source by indigenous tribes who also view the species as a sacred part of their ancient culture. Native American tribes throughout the region are working pro-actively to preserve and/or restore the species within inland lakes that are located on tribal lands. Due to the significant loss of wetlands and other aquatic habitats in recent decades that are capable of hosting northern wild rice, the species has been classified as threatened, and has been on the Michigan Natural Features Inventory endangered plant listing for many years.



Northern wild rice
Photo Credit: University of Wisconsin-Green Bay

Scott Brown
ML&SA Executive Director

* * * * * *

Our experts include our riparian attorney, a biologist, a limnologist, an engineer, a college professor and a state agency official. They look forward to responding to your question.

TIPS FOR STARTING A BOAT WASH

by Leslie Mertz PhD
Freelance science writer
LMERTZ@nasw.org

Adding a boat wash is a great idea to help keep Eurasian watermilfoil, zebra mussels, and other invasive aquatic species at bay, but how do you do it? Several people involved in successful, but very different boat washes on Michigan inland lakes shared what they have learned through their own experiences.

Set along the Sleeping Bear Dunes National Lakeshore, Big Glen Lake (shown here) and Little Glen Lake are also close to Lake Michigan. This proximity makes them especially susceptible to invasive species that boats may transport from the Great Lakes. Photos by Leslie Mertz.

BIG AND LITTLE GLEN LAKES

Information provided by: Sarah Litch, a member of the Glen Lake Association Boat-Wash Committee.

Location: Leelanau County

Lake size: 6,300 acres (Big and Little Glen lakes combined)

Boat wash history: Begun in 1994, this is one of the longest-running boat washes in the state.

Boat wash details: This boat wash is situated at the access site for the two lakes. It includes a power washer that uses heated water, which was added to eliminate the fish pathogen known as viral hemorrhagic septicemia (VHS) and other problem species, which have become issues in nearby Lake Michigan. Paid workers man the boat wash from 6 a.m. -7 p.m. during the summer boating season. Instructions are posted for self-washing when the wash is not manned. As of 2015, the boat wash processes about 4,000 boats per year (including 900 kayaks) during manned hours. They do not keep track of self-washing numbers.

Education and marketing: Educational materials include educational pamphlets and signage, which are available on-site. Staff members approach boaters to provide a quick explanation about the need for washing and pass out brochures. Brochures and signage are also available when the station is unmanned. In addition, bright orange and black signs at road ends inform boaters about the need for washing and direct them to the boat wash, and brochures are available at road ends. Besides these efforts, the Glen Lake Association promotes the boat wash in its Glen Lake Stewardship Handbook, which they distribute to lake property owners and make available on the association website (pages 42-43 of the handbook at https://glenlakes.files.wordpress.com/2015/01/gl-cr-watershed-landowners-handbook.pdf), as well as educational cards they distribute to rental properties.

Costs: Maintenance costs run approximately $28,000 a year and include minor repairs to sprayers or other equipment, insurance, utilities, and staff remuneration.

Funding: The lake association is the primary supporter of the boat wash. A few small grants for the boat wash, shed, and training workshops, and a $12,000 grant from the Grand Traverse Band of Ottawa and Chippewa Indians for an ungraded spraying system, and for developing educational pamphlets and signage have also come in handy.

Sarah Litch's Tips:

➔If you are going to man a boat wash, hire adults. "We would not recommend staffing with volunteers. It's not an easy job: It's total boredom or total chaos," Litch says. "And we do not hire anybody unless they're graduated from high school – they just don't have the maturity to approach people who have big boats and tell them they're going to have to wash their boat."

➔Train staff members to educate boat owners about the process and the reasoning behind it, and once that relationship with the boater has been established, to then begin spraying the boat.

➔Borrow when you can. The Glen Lake Association worked with communications professionals to create some of their educational materials, and their signage. "It would be very nice if signage in particular was standardized throughout the state because then people can get used to seeing a certain sign and knowing what it means," Litch says. She

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The Glen Lakes boat wash is manned from 6 a.m. – 7 p.m. every day during the summer months. Here, one of the paid staff uses heated water to spray off the boat and flush the engine.

TIPS FOR STARTING A BOAT WASH

(Continued from page 13)

invites anyone wishing to copy some of Glen Lake's materials or to get more information about their boat-wash operation to contact her at sarahlitch@gmail.com.

PARADISE LAKE

Information provided by: Kira Davis, who served as a key organizer for the boat wash in her previous position as water quality specialist for the Little Traverse Bay Bands of Odawa Indians (she is now program coordinator for the Conservation Resource Alliance); and Catherine Freebairn, treasurer of the Paradise Lake Improvement Board.

Location: Emmet and Cheboygan Counties

Lake size: 1,900 acres

Boat wash history: The Little Traverse Bay Bands of Odawa Indians, the Paradise Lake Improvement Board, and the Michigan Department of Natural Resources collaborated on a grant proposal to the U. S. Environmental Protection Agency's Great Lakes Restoration Initiative (GLRI) to pay for the new facility. Two years and three months later in 2012, the boat wash was up and running. "That's pretty quick with three governments involved," Davis says with a laugh.

Boaters pull up to the self-operated boat wash, read the instructions (right), and in a matter of minutes are done and ready to launch into Paradise Lake. Images courtesy of Kira Davis.

Boat wash details: This boat wash is situated at the access site. This is a self-operated (unheated) power washer that is available during the summer boating season. Instructions are posted.

Education and marketing: Every Saturday morning during the boating season, the Paradise Lake Association organizes volunteers to follow the guidelines of the Clean

Boats, Clean Waters program (http://www.miseagrant.umich.edu/downloads/cbcw/11-722-CBCW-handbook-WEB.pdf) and explain to boaters about the boat-wash operation and its importance. The volunteers also pass out laminated invasive-species boat cards and other materials that hang on a carabiner.

Costs: Initial cost was $72,000-$78,000, not including engineering. Maintenance costs run about $500 per year and include utilities, an annual water permit from the DNR and minor equipment repairs.

Funding: A GLRI grant paid for construction of the boat wash, along with the development and production of marketing materials and the initial operational expenses associated with a boat wash. The Paradise Lake Improvement Board, which receives its funding through a special assessment district, took over the expenses at the end of the grant period in October 2013.

Kira Davis' Tips:

➔Try to put your boat wash at the boat launch. "I think they will be used more if they're on site, and the one at Paradise Lake is right there as you pull up with your boat," she says. At the same time, however, make sure the wash doesn't impede boat traffic, as this can pose problems especially on busy weekends and holidays when access sites can be quite congested.

➔While major grants can be very helpful in paying for a boat wash, other funding sources might be a better option for small lake associations that are putting in a boat wash on their own. "Based on our whole venture (involved in seeking federal funds), I feel that if you can do it 'grassroots,' you can get the price down drastically and minimize the time spent on grant management," she says.

➔Keep track. As part of the GLRI grant, Davis helped put together a survey of riparian owners before and after the boat-wash program. Through education, outreach and publicity for this project, the surveys showed a noticeable increase in the riparian owners' understanding of the importance of washing their boats. In addition, a timer or wash counter can help keep track of trends in boat-wash use.

➔Borrow when you can. She welcomes others to copy the popular laminated boat cards that Paradise Lake Association volunteers distribute at the boat wash, and invites anyone interested in mimicking those cards to contact her at kira@rivercare.org.

A rain garden, shown newly planted at the Paradise Lake boat wash, will help prevent boat-wash runoff from entering the lake. Petoskey-Harbor Springs Community Foundation grant.

Catherine Freebairn's Tips:

➔Forge relationships early on. "If you're going to put the boat wash on state property, your local DNR representative is a good place to start."

➔Stay vigilant. "The Paradise Lake Improvement Board has lake management consultants, so we can try to find out early what new invasives are coming in."

Located near North Higgins Lake State Park, this boat wash has two lanes, which allows two boats to be washed at once.
Photo by Tabitha Sutterfield.

HIGGINS LAKE

Information provided by: Vicki Springstead, Chair of the Higgins Lake Foundation.

Location: Roscommon County

Lake size: 9,900 acres

Boat wash history: Higgins Lake, which is the 10th largest inland lake in the state, has three boat washes. The first boat wash opened in 2009 near North Higgins Lake State Park as a joint project of the Higgins Lake Property Owners Association and the Higgins Lake Foundation; the second was added in 2011 at the Gerrish Township Community marina on the lake; and the third opened in 2014 in South

(Continued on page 30)

Michigan Waterfront Alliance

A unified voice to protect Michigan's Lakes and Streams.

Members Receive: Protection of their Riparian Rights by professional lobbyist in Lansing * MWA Newsletters sent by 1st class mail * Lobbyist Reports * Testimony at important legislative hearings on behalf of Riparians * Email Action Alerts * Amicus Briefs and much much more.

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The MWA is the waterfront voice in Michigan politics

Annual dues for individual membership in Michigan Waterfront Alliance are $50.00 per year. Dues for lake or stream associations are $100 per year. Commercial and individual donations are needed and appreciated.

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Make checks Payable to Michigan Waterfront Alliance

Send Dues and Contributions to: Michigan Waterfront Alliance, PO Box 369, Fenton MI 48430

☐ **I am not ready to join yet. Please send me more information.**

Dear Michigan Riparians,

The Michigan Waterfront Alliance has been working on a number of issues including SB 104 AQUATIC INVASIVE SPECIES (Casperson) that authorizes adoptions of local ordinances for prevention or treatment of aquatic invasive species. The bill amends 1994 PA 451 (MCL 324.101 to 324.90106) by adding section 3317. MWA board members Ed Highfield, Nancy Beckwith and I testified at a Senate Hearing held this past October 7 in support of this bill.

Here is a summary of the testimony:

Local government would be able to adopt an ordinance to prevent, control or eradicate aquatic invasive species in waters within its boundaries and impose fees if an aquatic invasive species is present in the waters (under legislation discussion by the Senate Natural Resources Committee).

The fees collected would be required to be deposited in a restricted fund and could be used for invasive species prevention, control or eradication.

While most who testified on SB104 were supportive of its provisions, the Department of Natural Resources took no position on the bill as written, stating that while it can appreciate the intent behind the bill, it does not want to discourage boaters from using any of Michigan's numerous inland lakes

The ordinance could not impose fees totaling more than $10 per boat per day or $45 per boat per year, according to a Senate Fiscal Agency analysis of the bill. The ordinance would have to exempt a pesticide applicator, lake management consultant, or other person engaged in aquatic invasive species management activities from payment of a fee, as well as a government entity or a nonprofit organization.

The DNR also had questions about how the bill would be enforced if it becomes law.

No consensus was reached on an appropriate fee or how it would be assessed. The Michigan Townships Association, Michigan Association of Counties and Michigan Municipal League were among supporters of the bill, as was the Michigan Environmental Council (though the latter said more needed to be done to figure out how to get more funds to the table to address the issue overall).

Members of the Michigan Waterfront Alliance and the Michigan Aquatic Managers Association said something needs to happen sooner rather than later. "We've been concerned about Michigan residents living around the lakes having to bear the brunt of the invasive species war," said Bob Frye, president of the group. "It's very challenging when you have a number of public launch sites at our different lakes and the public contributing to the problem, but the public not given a chance to confront the problem."

MICHIGAN WATERFRONT ALLIANCE
P.O. Box 369
Fenton, Michigan 48430-0369
www.mwai.org

Senator Casperson's Aide, Kendra Evert, asked that all MWA members and all other riparians send their support of the bill to their respective representative and senator. Other matters that need support from MWA members and riparians regard wake enhanced boats. The DNR has reported no complaints about them. Please remember to contact the DNR by calling the enforcement phone number 517-284-6000 or email them DNR-LawEnforcement@michigan.gov if you had issues with Wake Enhanced boats last summer and be sure to call or email next summer to report damage to shorelines and moored boats caused by large wakes from Wake Enhanced boats. Also report other issues such as small boat navigation challenges in large waves caused by Wake Enhanced boats.

On behalf of your MWA board of Directors we hope the New Year brings you good health and well being.

Sincerely,
Bob Frye, MWA President

Wouldn't you love to see your lake featured here?
In word and picture, send us your story to swagner@mlswa.org.
(Send pictures in jpeg or 300 dpi.)

One Woman's Paddle for Clean Water
(SURPRISE VISITORS TO PENTWATER)

October 2015 Pentwater Lake Association Newsletter
Article and photos courtesy of Norma Oly

It all happened about 3 weeks after the PLA (Pentwater Lake Association) 20th Anniversary Annual Dinner. Joe Primozich received a phone call from Jessica Besock, the Logistics Manager for Ocean Activist Margo Pellegrino. He was asked if he could find a place in which Margo could park her 20 foot Hawaiian outrigger canoe and rest overnight somewhere in the area.

Margo, a wife and mother of two from New York, was solo-paddling her outrigger canoe 2000 miles, from New York City to New Orleans. The first leg of this journey was from NYC to Chicago. She was doing this work in an effort to raise awareness of our U.S. oceans and waterways. Her deep concern revolves around water pollution problems and the need for policies and public action to clean up our waters.

Margo paddled about forty miles per day on this journey, having gone from the Hudson River, through the St. Lawrence Seaway and around the Great Lakes on her way to Chicago. On her 48th day, she paddled from Manistee to Pentwater and found rest, food and an outrigger parking place right here in Pentwater!

The surprise visit began with a phone call to Joe late on July 8th and the women's stopover began on the evening of July 10th. Hank and Norma Oly hosted Jessica on their boat while she radioed directions through the Pentwater Channel to Margo. (Jessica drives her car from port to port, and takes care of daily onshore parking and lodging needs.) The Oly's natural beach frontage was the perfect spot for the bright yellow and blue outrigger to be locked on shore overnight. As Jessica and Margo hauled the canoe to the grassy shore, Joe drove over to give them a hand and lead them to his home where he and Judy hosted them with a dinner, and a cabin in which to rest overnight.

The women were also delighted with the opportunity to meet with several members of the Lake Association for a Q and A session. The two groups have many of the same goals about the waterways, especially for future generations. Margo and Jessica were off before 6:30 a.m. the following morning for their day's next stop - Lake Macatawa in Holland.

Each day, Margo posted a description of her travels and the places and people she has met along the way. For some quick, but fun reading, visit her website at *paddle4blue.wordpress.com* and read about Day 48 in Pentwater. You will be transported back to a wonderful summer day in July, and a surprise visitor's impressions and discovery of Pentwater!

Talmadge Creek and the Kalamazoo River

Common Invasive Aquatic Plants in Michigan Lakes: The Usual Suspects

By: Jennifer L. Jermalowicz-Jones, PhD Candidate
Water Resources Director, Restorative Lake Sciences

Foreword

Our inland lakes have been vulnerable to invasions from invasive, exotic aquatic plants for many decades. Exotic aquatic plants are not native to a particular site, but are introduced by some biotic (living) or abiotic (non-living) vector. Such vectors include the transfer of aquatic plant seeds and fragments by boats and trailers (especially if the lake has public access sites), waterfowl, or by wind dispersal. In addition, exotic species may be introduced into aquatic systems through the release of aquarium or water garden plants into a water body. An aquatic exotic species may have profound impacts on the aquatic ecosystem. Many Michigan lakes have already experienced severe declines in recreational activities, navigation, aesthetics, and waterfront property values. Fortunately, there are effective tools available for successful management of these invasives. The summaries below offer brief educational introductions and photographs of common invasive aquatic plants currently thriving in many of our once pristine inland lakes.

Eurasian Watermilfoil and Hybrid Watermilfoil

Eurasian Watermilfoil (*Myriophyllum spicatum*; *Figure 1*) is an exotic aquatic macrophyte first documented in the United States in the 1880's (Reed 1997), although other reports (Couch and Nelson 1985) suggest it was first found in the 1940's. Eurasian Watermilfoil has since spread to thousands of inland lakes in various states through the use of boats and trailers, waterfowl, seed dispersal, and intentional introduction for fish habitat. Eurasian Watermilfoil is a major threat to the ecological balance of an aquatic ecosystem through causation of significant declines in favorable native vegetation within lakes (Madsen et al. 1991), and may limit light from reaching native aquatic plant species (Newroth 1985; Aiken et al. 1979). Additionally, Eurasian Watermilfoil can alter the macroinvertebrate populations associated with particular native plants of certain structural architecture (Parsons and Matthews 1985).

Hybridization of watermilfoil occurs when native species of watermilfoil cross-breed with Eurasian (exotic) Watermilfoil. In many of the cases, the hybrid watermilfoil will contain a thicker reddish stem when compared to native watermilfoils. Hybrid watermilfoil is a serious problem in Michigan inland lakes since the canopies are often more robust. A similar watermilfoil species that is considered to be exotic by some scientists (*Myriophyllum heterophyllum*) in New Hampshire was found to have significant impacts on waterfront property values (Halstead et al., 2003). Moody and Les (2007) were among the first to determine a means of genotypic and phenotypic identification of the hybrid watermilfoil variant and further warned of the potential difficulties in the management of hybrids relative to the parental genotypes. It is commonly known that hybrid vigor is likely due to increased ecological tolerances relative to parental genotypes (Anderson 1948), which would give hybrid watermilfoil a distinct advantage to earlier growth, faster growth rates, and increased robustness in harsh environmental conditions. In regard to impacts on native vegetation, hybrid milfoil possesses a faster growth rate than Eurasian watermilfoil or other plants and thus may effectively displace other vegetation (Les and Philbrick 1993; Vilá et al. 2000).

FIGURE 1: Eurasian Watermilfoil stem, whorls of leaves, and seed head © Restorative Lake Sciences

Curly-leaf Pondweed

Curly-leaf Pondweed (*Potamogeton crispus*; Figure 2) is an exotic, submersed, rooted aquatic plant that was introduced into the United States in 1807 but was abundant by the early 1900's. Curly-leaf Pondweed is easily distinguished from other native pondweeds by its wavy leaf margins. Curly-leaf Pondweed grows early in the spring and as a result may prevent other favorable native aquatic species from germinating. The plant reproduces by the formation of fruiting structures called turions. The plant does not reproduce by fragmentation like the Eurasian Watermilfoil; however, the turions may be deposited in the lake sediment and germinate during following seasons. Fortunately, the plant naturally declines around mid-summer in most lakes and thus may not always be prolific throughout an entire growing season. Curly-leaf Pondweed is a pioneering aquatic plant species and specializes in colonizing disturbed habitats. It is highly invasive in aquatic ecosystems with low biodiversity and unique sediment characteristics.

FIGURE 2: Curly-leaf Pondweed apical stem and leaves
© Restorative Lake Sciences

Starry Stonewort

Starry Stonewort (*Nitellopsis obtusa*; Figure 3) is an invasive macro alga that has invaded many inland lakes of Michigan and was originally discovered in the St. Lawrence River in 1986. The "leaves" appear as long, smooth, angular branches of differing lengths. In very clear, deep lakes, the alga has been observed in dense beds at depths beyond several meters and can grow to heights in excess of a few meters. It prefers clear, alkaline waters and has been shown to cause significant declines in fishery spawning habitat. In late summer the macro alga produces distinct, hardened, white star-shaped bulbils that can serve as a propagation organ for future growth. The alga closely resembles the native macro alga Chara which has significantly smaller whorls with significantly shorter stem internodes.

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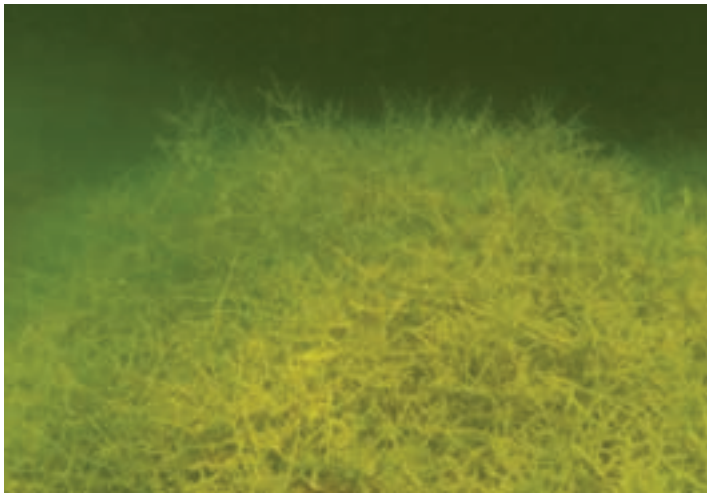


FIGURE 3: Starry Stonewort underwater colony
© Michigan Lake and Stream Associations

Enbridge Pipeline

Built to Last: Line 5 Meets or Exceeds Today's Standards for New Pipelines

By Brad Shamla
Vice President, U.S. Operations, Enbridge

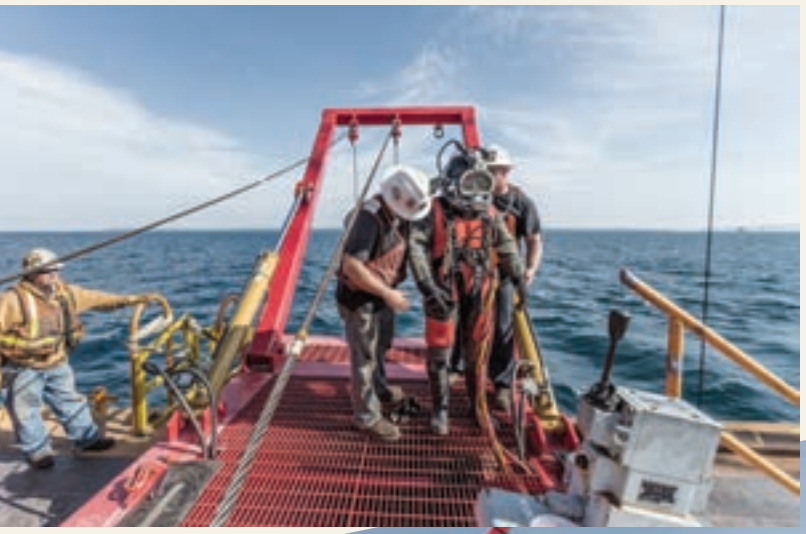
Enbridge is proud to call Michigan home, and we are prepared to protect communities and waterways through the safe operation of our pipelines. Protecting the Great Lakes, inland waterways and the communities along the Line 5 route is our top priority.

Line 5 delivers vital energy that powers cars, heats homes and fuels manufacturing throughout Michigan. The line transports 540,000 barrels per day of light crude oil and natural gas liquids, including propane. That's enough to heat 85 percent or 240,000 homes in Northern Michigan. Also, approximately 30 percent of the oil transported on Line 5 stays in Michigan, fueling 120,000 passenger cars and light trucks each day.

Construction

Line 5 was built in 1953 to safely provide energy to Michigan residents and businesses and eliminate barge traffic on the Great Lakes. Enbridge worked with Bechtel Corporation – the same firm that designed and built the Mackinac Bridge and the Hoover Dam – to plan, design and build Line 5 under the Straits of Mackinac. The Department of Naval Architecture, Marine Engineering at the University of Michigan and the Department of Civil Engineering at Columbia University were also consulted and participated in the design review.

The 645-mile pipeline connects Superior, Wisconsin and Sarnia, Ontario. As it reaches the Straits of Mackinac, it splits into two, 20-inch diameter pipelines that are each 4.5 miles long. The crossing was specifically designed for the underwater environment in the Straits of Mackinac. It was over-engineered, using nearly one-inch thick steel – one of the thickest pipelines in our system. Also, the fiber-reinforced enamel coating serves as an additional layer of protection. The coating is widely recognized today as one of the strongest pipeline coating materials in the world, which explains why the line meets or exceeds today's standards for pipeline safety. In short, the line was built to last.



We regularly inspect the Line 5 Straits of Mackinac crossing using expert divers who examine and report on the condition of the crossing and its underwater supports.

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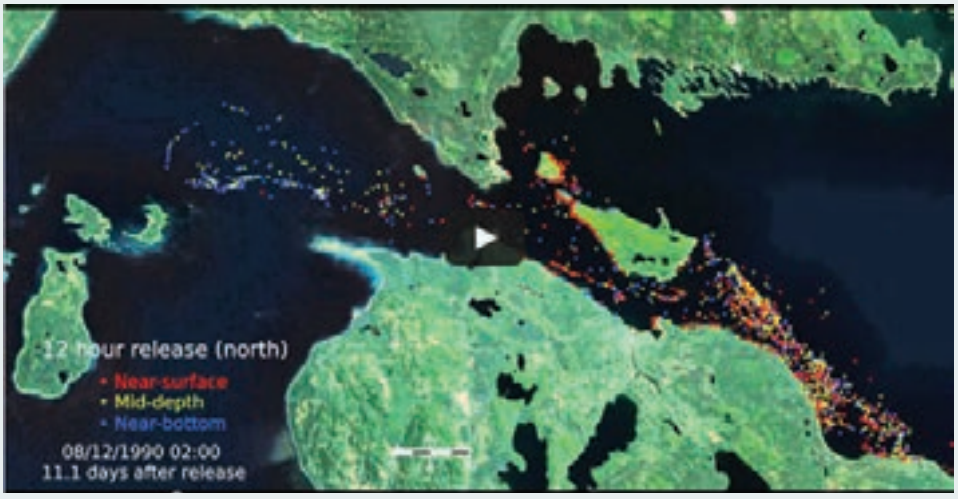
Strong Cross-Currents in the Great Lakes:

The Need to Eliminate Crude Oil in Enbridge Line 5 in the Straits of Mackinac

By Jim Olson[1]

The Straits of Mackinac

The Straits of Mackinac is the geographical and cultural heart of the Great Lakes. The narrow passage and strong currents in the Straits of Mackinac define Michigan's heritage, art, recreation, tourism, our water-dependent quality of life, and economy.[2]



The University of Michigan oil spill simulation video by Dr. David Schwab which shows where the oil could be transported after a spill.

Public Trust in the Great Lakes and Citizen Beneficiaries

Michigan Supreme Court decisions have declared the value of the Great Lakes to be of such a high character, that they are subject to a paramount public trust – an immutable and "perpetual duty"[3] of the state, as trustee, to protect these waters and the bottomland beneath them, for benefit of citizens, the legally recognized beneficiaries, for navigation, fishing, boating, drinking water, swimming, bathing and sustenance. The State cannot sell, transfer, or subordinate these public trust lands and waters to a private person except in two narrow instances: (1) where the transfer does not surrender the control of the state or interfere with or impair these special uses, or (2) where there is no impairment and the purpose promotes protection of the public trust, like navigation, boating, swimming or fishing.[4] Any other transfer or occupancy for private purpose is forbidden.[5]

Crude Oil Pipelines in the Great Lakes

The strong flow between these revered waters is not the only consequential currents in the Straits.

In 2010, citizens and state officials discovered that there was another current in the Straits, one that was pernicious, man-made: a pair of pipelines transporting 23 million gallons of crude a day. The discovery was triggered by the rupture and release of one million gallons of tar sands crude in the Kalamazoo River and its watershed from Line 6b, owned and operated by Enbridge, the same Canadian company that owns the Straits pipelines. Officials and citizens realized that water, people, communities, and the environment of Michigan were at grave risk. The Kalamazoo disaster has cost approximately $1 billion to clean up, to the extent possible, the river and creeks. A look at an oil pipeline system map revealed veins of pipelines pulsing with crude oil from Alberta and North Dakota and through the Great Lakes region and across Michigan into Sarnia, Ontario. While these oil pipelines crossed streams and ran along many of Michigan's lakes, one line stunned everyone – Enbridge Line 5 in the Straits of Mackinac, center of the Great Lakes. It was discovered that in the last few years, Enbridge has increased its capacity for the flow of oil in Line 5 by eighty percent – from the initially allowed 300,000 to 540,000 barrels per day or 23 million gallons in the 4.5 mile segment in the Straits. (A barrel equals 42 gallons).

(Continued on page 23)

Enbridge Pipeline

(Continued from page 20)

Operation

Enbridge has operated Line 5 safely for more than 60 years. There are a number of measures in place to maintain the integrity and safety of Line 5.

First, a dedicated team of people monitor the line 24 hours a day, seven days a week. If there were a drop in pressure, remotely operated shutoff valves would stop the flow into the Straits Crossing within three minutes. Also, oil that enters the system is tested for quality. We have performed more inspections on Line 5 crossing under the Straits than any other segment of pipeline in our system and that ensures the line remains fit for operation.

To further preserve the integrity of the line, we operate Line 5 under the Straits at a reduced pressure, minimizing stress on the heavy-walled, carbon-steel pipe. This insures that the light crude oil and natural gas liquids safely make it to their destination.

Inspection

We inspect Line 5 frequently and have extensive data verifying the line is fit for service. At the Straits, data on the exterior of Line 5 is collected by highly trained divers and advanced underwater vehicles equipped with cameras. We inspect the interior with devices called "pigs." They work like small MRI machines, traveling inside the line recording data on the pipe's thickness and looking for cracks, dents or signs of corrosion.

In 2013, the National Transportation Safety Board Chairwoman, Deborah Hersman, testified before the Senate Commerce Committee and stated that, "if [a pipeline] is adequately maintained and inspected, age is not an issue." Recent inspection reports show that Line 5, from engineering and integrity perspectives, is in excellent condition and remains fit for service.

Enbridge inspection data is reviewed by the Pipeline Hazardous Materials Safety Administration and shared with state regulatory authorities and with state elected officials when requested. Enbridge is currently working with the Michigan Departments of Environmental Quality and Natural Resources and third parties to conduct an independent review of Enbridge's integrity data.

Inline inspection tools, such as the ones shown, are known as "smart pigs" and are sent through our pipelines at regular intervals, inspecting the pipe millimeter by millimeter. These gadgets provide the same level of detail provided by MRIs in the medical industry.

Michigan Impact

A lot of people and businesses depend on the light crude oil and natural gas liquids delivered by Line 5. Without it, the state's access to affordable, secure energy would be compromised. Line 5 is one of several pipelines in our network that support the Michigan economy. We employ roughly 250 employees and contractors throughout Michigan to ensure safe operation of our energy infrastructure. We also provide $22.4 million in annual sales and property taxes to the state. Without Line 5, Michigan's Detroit refinery would directly lose approximately 30 percent of its light oil feedstock. The rationing of Enbridge's other pipelines in Michigan could cause the Detroit refinery to indirectly lose approximately another 20 percent. The cost to drivers and manufacturers in Michigan would be significant.

Preparedness

While we have no reason to anticipate a leak or spill on Line 5, we are well prepared for any incident. We have the resources, experience and training to ensure that

Quick Facts:

- **Line 5 is monitored 24/7 by a dedicated team and inspected more frequently than federal regulations require.**
- **Line 5 delivers 85% of the propane that heats Upper Peninsula and northern Michigan homes.**
- **About 30% of the light crude moved by Line 5 stays in Michigan and fuels 120,000 cars and trucks per day.**

(Continued on page 29)

Strong Cross-Currents in the Great Lakes:

(Continued from page 21)

Map of evolving crude oil pipeline system into, thru, and out of Great Lakes basin region.

A 62-Year Old Pipeline

In 1953, the Canadian Lakehead Pipeline Company (now Enbridge) proposed a 645-mile pipeline for carrying crude oil from Alberta to Ontario, via Wisconsin, the Upper Peninsula, Straits of Mackinac, and Lower Peninsula to Sarnia. When the company asked Michigan for an easement and permission to build and operate the pipeline in the Straits, the state's attorney general advised that it could not be done, unless the legislature expressly authorized it. In a matter of a few months, the legislature passed Act 10. After reviewing and imposing limitations and conditions, the state granted an easement for the pipeline in the Straits.

Underwater photo taken by NWF diver inspecting the pipelines, covered in zebra and quagga mussels.

The easement was little more than a privilege, since the right to use and operate is subject to the legal stipulation that the pipeline can never subordinate or impair the paramount public trust of the State. The State stipulated that Lakehead "at all times shall exercise the due care of a reasonably prudent person" to protect private and public property and safety. The company also promised to install support structures to protect the pipelines, obtain state approval for any major changes, supply inspection reports, indemnify any harm or damages, and obtain at least $1 million in insurance – a shockingly low number even by 1953 standards. To date these provisions have not been satisfied.

High Magnitude or Catastrophic Harm

Everyone agrees that a rupture or leak of crude oil from Line 5 in the Straits is unacceptable.

In 2012, the National Wildlife Federation published a report showing the dire risks to the Straits and Great Lakes from Line 5. University of Michigan Water Center's David Schwab released a video simulation of an oil spill from Line 5 that showed wide-spread impact to wildlife, fishing, the Great Lakes ecosystem, and coastal towns and residents.[6] Within a matter of hours, the animated release spread south along the coast of Lake Huron, providing a stirring snapshot of an oil spill. Within a few days, the animated dyes swarmed around Mackinac Island, Drummond Island, along the Michigan coast as far south as Rogers City, and back into Lake Michigan, west to Escanaba and south to Beaver Island. Dr. Schwab noted that the currents in the Mackinac Straits are ten times greater than at Niagara Falls, and that Line 5 in the Straits was "worst possible place for an oil spill in the Great Lakes."[7]

John Austin, expert on the economic value of water resources, has said the impact of a spill "would be environmentally and economically devastating."[8] U.S. Senator Gary Peters said it would be "catastrophic." The Michigan Petroleum Pipeline Task Force concluded that a release would be "very significant," and Attorney General Bill Schuette warned that "Line 5's days are numbered."[9]

(Continued on page 35)

Common Invasive Aquatic Plants in Michigan Lakes: The Usual Suspects (Continued from page 19)

Purple Loosestrife

Purple loosestrife (*Lythrum salicaria*; Figure 4) is an invasive, exotic emergent aquatic plant that inhabits wetlands and shoreline areas. It has showy magenta-colored flowers that bloom in mid-July through late September. The seeds are highly resistant to tough environmental conditions and may reside in the ground for extended periods of time. It exhibits rigorous growth and may out-compete other favorable native emergents such as cattails (*Typha latifolia*) or native swamp loosestrife (*Decodon verticillatus*) and thus reduce the biological diversity of wetland and shoreline ecosystems. The plant is spreading rapidly across the United States and is converting diverse wetland habitats to monocultures with substantially lower biological diversity.

FIGURE 4: Purple Loosestrife flowering stem
© Restorative Lake Sciences

FIGURE 5: Phragmites stem and seed head
© Restorative Lake Sciences

Phragmites

Giant Common Reed (*Phragmites australis*; Figure 5) has a tall "sugar cane" appearance and may grow to heights of up to 18 feet. The plant is an imminent threat to the surface area and shallows of especially shallow lakes since it may grow submersed in water depths of ≤ 2 meters (Herrick and Wolf, 2005), thereby drying up wetland habitat and reducing lake surface area. In addition, large, dense stands of *Phragmites* accumulate sediments, reduce habitat variability, and impede natural water flow (Wang et al., 2006). It primarily outcompetes native emergent aquatic plants such as cattails and bulrushes and is difficult to control once established since it also reproduces via seed and through underground runners that quickly develop new viable shoots.

Concluding Remarks:

Although all of the aforementioned invasive aquatic plant species cause harm to our inland waters, there are alternatives for their management. Lake management professionals are able to recommend specific adaptive management treatment plans for particular infestations on a specific inland lake. For the emergent invasives there are alternative methods available such as the use of herbicides, mechanical removal, biological control, or hand-removal. For the submersed invasives, control methods consist of the use of aquatic herbicides and algaecides, mechanical removal, aeration/ bio augmentation, dredging, or lake drawdown. At times, more than one of these methods may be used in a single lake to effectively address all of the invasives in the most ecological manner and for the best long-term results.

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MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.
ML&SA NEWSLETTER

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The High Cost of Michigan's Failure to Adequately Fund Aquatic Invasive Species Management

By Scott Brown
ML&SA Executive Director

Exotic aquatic invasive species such as Eurasian watermilfoil are diminishing the value of Michigan's freshwater resources Photo: Scott Brown

Recent detections of invasive *Didymosphenia geminata*, commonly known as *didymo* or rock snot, and New Zealand mudsnails (*Potamopyrgus antipodarum*), represent only the latest successful introductions of an increasingly diverse array of exotic aquatic invasive species that are rapidly diminishing the economic, ecological and recreational value of Michigan's freshwater resources. Nearly a century after the first introductions of aquatic invasive species within the waters of Michigan, we have now entered an era marked by increasing inability to find even a single lake, stream or wetland not hosting one or more exotic species. Thousands of once pristine freshwater resources within our state have become living examples of the often extraordinary ability of some exotic aquatic invasive species to degrade or diminish the natural ability of our lakes, streams and wetlands to support and sustain the myriad of native fish, plants and other important water-borne creatures that exist at the very heart of what most of us view as "Pure Michigan". While we appreciate the efforts of the governor and state legislature in recently appropriating resources to fund the creation of the Michigan Invasive Species Grant Program (MISGP), a Michigan Department of Natural Resource and Department of Environmental Quality led initiative focused on preventing and managing both terrestrial and aquatic invasive species, we would suggest that the extent and severity of the exotic aquatic invasive species fueled ecological crisis occurring in many of our lakes, streams and wetlands possesses a significant threat to our economy and to Michigan's future. Accordingly, we believe that is time for our governor and state legislature to begin an earnest conversation about dramatically increasing our investment in exotic aquatic invasive species management initiatives designed to protect the health and future of Michigan's most valuable resources – our inland lakes, streams and wetlands.

The importance of increasing public investment in aquatic invasive species management efforts designed to preserve and protect our immensely valuable inland freshwater ecosystems from an unprecedented and often devastating onslaught of exotic aquatic invasive species cannot be overstated. Our lakes and streams and their associated natural resources represent an important part of Michigan's ecological, recreational and economic future. Inland lake shoreline property alone, whose immense value is directly related to the presence of healthy aquatic ecosystems, has been conservatively valued at 200 billion dollars,

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(*Continued from page 25*)

generating 3.5 billion dollars in annual property tax assessments that goes to support hundreds of local units of government, public safety agencies and public school systems. Moreover, water-borne recreational opportunities that directly or indirectly contribute billions of dollars in economic activity to Michigan's economy like fishing, boating and waterfowl hunting are also dependent upon our ability to protect and maintain the ecological health of our lakes, streams and wetlands. Given their immense economic, ecological and recreational value, we would suggest that the increasing threat posed by aquatic invasive species to our treasure of freshwater resources poses a clear and present danger to Michigan's economy and to our future.

Yet, nearly 100 years since the first introductions of aquatic invasive species within Michigan waters, our legislature has failed to enact either adequate levels of funding and/or an effective and sustainable aquatic invasive species management funding mechanism. We define "adequate" funding for the effective management of the aquatic invasive species crisis as the appropriation of state resources necessary to develop, implement and sustain long term research, programs and initiatives designed to: 1) improve the ability of our public and private resource managers and policy makers to predict the likelihood and potential impacts of exotic aquatic invasive species; 2) survey the distribution and ecological impacts of exotic aquatic invasive species currently hosted by our lakes, streams and wetlands; 3) protect Michigan's freshwater resources from further contamination by exotic invasive species; 4) enable science-based research focused on improving technologies and methods for controlling exotic aquatic invasive species; 5) manage and control the impacts of exotic aquatic invasive species currently residing in our lakes, streams and wetlands.

While Michigan Lake and Stream Associations recognizes that the vast number of inland lakes, streams and wetlands currently hosting one or more often highly aggressive and rapidly propagating exotic aquatic invasive species presents an enormous natural resource management challenge, we would again strongly suggest to our governor and to our state legislators that failure to adequately fund the management of this on-going ecological crisis places Michigan at high risk of losing one of the components vital to a viable and prosperous future – high quality inland lakes, streams and wetlands.

ML&SA Bids a Fond Farewell to Long Time Volunteers Cecile and Paul Kortier

By Scott Brown
ML&SA Executive Director

On behalf of everyone within the Michigan Lake and Stream Associations extended statewide family, we offer a heart-felt thank you to Cecile and Paul Kortier of Lake Avalon for all of their hard work and dedication over the course of the past 25 years.

In an age when volunteerism seems to be giving way to a pervasive attitude of "what's in it for me" – Cecile and Paul's quarter of a century of pro-active commitment to our organization and to our ever worthy cause of preserving and protecting Michigan's inland lakes and streams sets an unprecedented and probably unachievable example for all of us who follow in their footsteps! Having had the distinct pleasure of working with Cecile and Paul for so many years, we are all profoundly grateful for the substantial amount of time and energy that this dedicated couple devoted each year to ensuring the success of our annual conference.

Frankly, we cannot imagine that even one couple in a million would have been willing to put forth the significant effort that Cecile and Paul have so generously contributed as volunteers for over 25 years!

How lucky Michigan Lake and Stream Associations is to have benefited so greatly from Cecile and Paul's uncommon sense of devotion and commitment, and how lucky we all are to have experienced the honor and pleasure of getting to know them both!

MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.
ML&SA NEWSLETTER

ML&SA Deserving Recipient of the 2015 MSU Extension Key Partner Award

By Jane Herbert
Michigan State University Extension

MICHIGAN STATE UNIVERSITY | Extension

Michigan Lake & Stream Associations (ML&SA) received the Key Partner Award at the Michigan State University Extension's recent Fall Extension Conference. This two-day professional development and networking conference is the one time each year when Extension Educators statewide gather on MSU campus.

This year it was my honor and pleasure to help celebrate ML&SA's long history of collaborative partnership with our organization. Mr. Scott Brown, ML&SA Executive Director, and his wife Donna were on hand to accept this important award while nearly 400 of my MSUE colleagues from across Michigan looked on. Dr. Patrick Cudney, MSUE Director's Office, recognized ML&SA's contribution with these words:

Michigan Lake and Stream Associations is a non-profit, state-wide organization dedicated to the preservation, protection and wise management of Michigan's vast treasure of inland lakes and streams. ML&SA achieves its mission by supporting riparian associations as well as the educational, stewardship and conservation initiatives of its over 100,000 collective members. During its fifty-year history, ML&SA has forged numerous collaborative partnerships which directly support and forward the mission of MSU Extension. Over the years it has worked shoulder-to-shoulder with MSU Extension to provide key leadership to statewide initiatives. One example is the Michigan Inland Lakes Partnership (MILP). An initiative facilitated by MSUE, MILP promotes statewide collaboration to advance stewardship of Michigan's 11,000 inland lakes. In 2014, MILP hosted the inaugural Michigan Inland Lakes Convention – a three-day, highly successful, educational conference attracting 400 participants that is now a biannual event. Another example of ML&SA's supportive partnering is its critical role in the formation of the Michigan Natural Shoreline Partnership (MNSP) for which MSUE has led curriculum development and the training of more than 200 professional shoreline contractors on natural shoreline restoration techniques. Critical to MSUE's efforts to train volunteers to monitor the health of Michigan's inland lakes, ML&SA administers the Cooperative Lakes Monitoring Program – the second oldest volunteer lake monitoring program in the country. In 2015 alone, this program will engage more than 400 volunteers in monitoring over 230 lakes statewide.

Scott Brown, MLSA Executive Director, and his wife Donna display the 2015 MSU Extension Key Partner Award.
Photo credit: Jane Herbert

Mr. Brown, along with MSUE's Dr. Jo Latimore, are featured in a two-minute video about the award at www.youtube.com (search on ML&SA Key Partner). Congratulations ML&SA on this well-deserved recognition! MSUE looks forward to many more years of partnership to preserve and protect Michigan's inland lakes and streams.

Michigan Lake & Stream Associations, Inc.
ML&SA Newsletter

Congratulations to the Winners of the Cooperative Lakes Monitoring Program's Data Entry Prize Drawing!

Each year, hundreds of volunteers monitor the health of their lakes by measuring water clarity, collecting water samples, and taking other measurements. Volunteers are encouraged to enter their monitoring data into the online database at www.micorps.net. Each year, as an incentive, every volunteer who enters their own data is automatically placed in a random drawing to win free enrollment in that parameter for the following year.

The following lakes have been selected for a free parameter for 2016

Secchi Disk Transparency- Lake Mary (Dickinson County)
Spring Phosphorus- North Lake (Washtenaw County)
Summer Phosphorus- Big Star Lake (Lake County)
Chlorophyll- Ann Lake (Benzie County)
Dissolved Oxygen and Temperature- Bostwick Lake (Kent County)

Congratulations to all of the winners!

For more information on how to enter in next year's drawing or how you can get your lake involved in the Cooperative Lakes Monitoring Program (CLMP) contact Program Administrator Jean Roth at 989-257-3715 or jroth@mlswa.org.

Science & Leadership:
A Formula for Successful Lake Protection and Management

2016 Michigan Inland Lakes Convention

April 28th – 30th, 2016
Boyne Mountain Resort
Boyne Falls, Michigan

The Convention will educate, engage, and empower the individuals who work, live and play on Michigan inland lakes. The three day conference will include educational presentations, in-depth workshops, plenary addresses, receptions, door prizes, and plenty of networking opportunities focused exclusively on Michigan's 11,000 inland lakes with dozens of non-profit and business exhibitors showcasing their projects, resources and services.

For more information or to register for the convention, visit

www.michiganlakes.msue.msu.edu

Michigan Clean Water Corps

MiCorps
Monitoring Michigan's Water Quality

Michigan's Inland Lakes, Ours to Protect

Cooperative Lakes Monitoring Program

- *Providing baseline information and document trends in water quality for individual lakes.*
- *Educating lake residents, users and interested citizens in the collection of water quality data, lake ecology and lake management practices.*
- *Building a constituency of citizens to practice sound lake management at the local level and foster public support for lake quality protection.*
- *Providing a cost effective process for the MDEQ to increase baseline data for lakes state-wide.*

To enroll in the Cooperative Monitoring Program for the 2016 season, contact Program Administrator, Jean Roth at 989-257-3715 or jroth@mlswa.org

To enroll on-line visit www.micorps.net

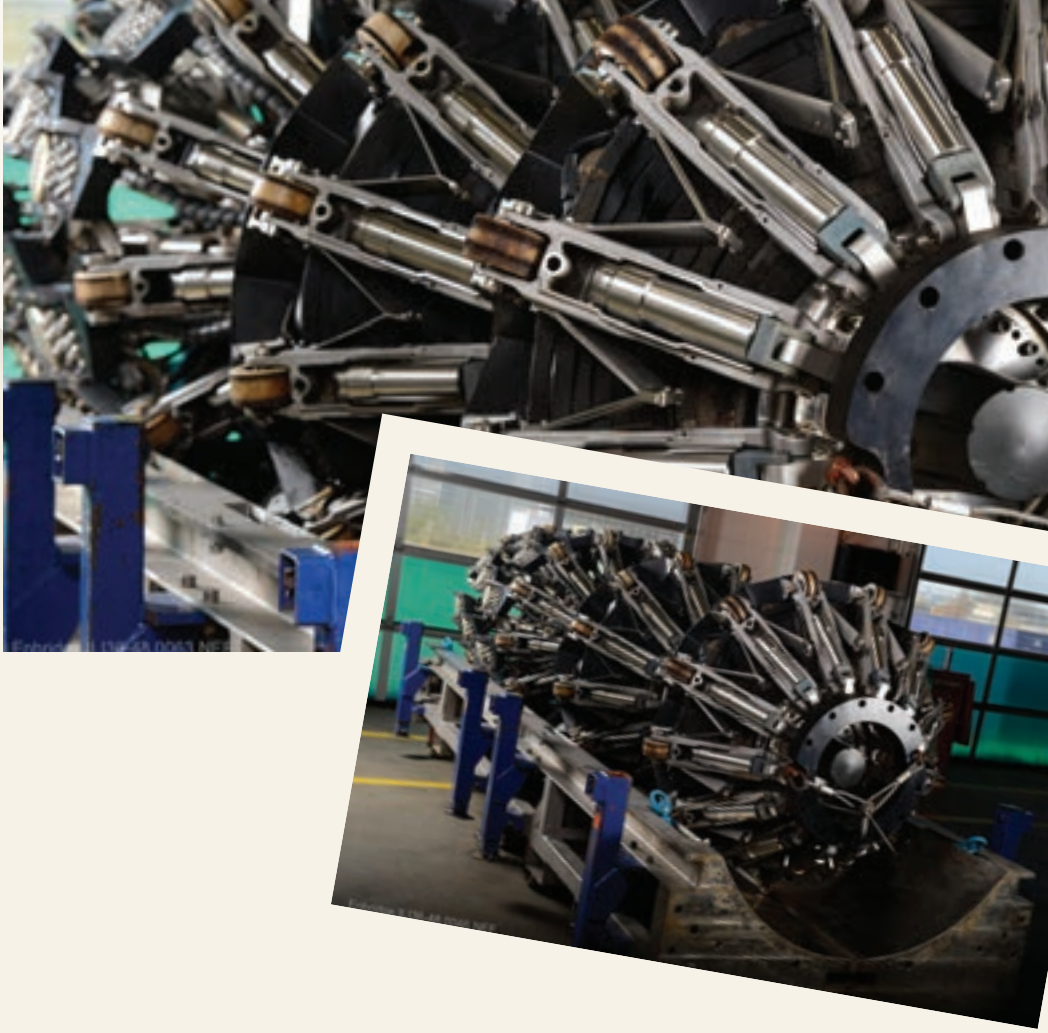
Enbridge Pipeline

(Continued from page 22)

people, wildlife and the environment are protected. Enbridge conducted a multi-agency emergency response exercise in the Straits of Mackinac in September 2015. The full-scale exercise included the U.S. Coast Guard, the U.S. Environmental Protection Agency, and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA), along with state and local agencies.

We want the people of Michigan to have confidence in the way we're operating Line 5 and know that we are fully committed to protecting and caring for the Great Lakes.

For more information on Line 5, please visit www.enbridge.com/Line5.



Reprinting Articles from the Magazine

Frequently, lake associations, the press, educational institutions and others request permission to reprint an article from *The Michigan Riparian* magazine in a newsletter, newspaper, or other publication. In general, *The Michigan Riparian* magazine is relatively liberal in granting permission for such reprints. However, no such reprint can be done without the express prior written permission of the magazine.

If you or your organization wishes to reprint an article from *The Michigan Riparian* magazine, please contact us at (989) 831-5100 or info@mi-riparian.org. If approved, we will notify you by email or letter. When permission is granted, the following language must appear just before or after the reprint:

"Reprinted with permission of *The Michigan Riparian* magazine from the (indicate the season & year) issue, author's name: _____
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TIPS FOR STARTING A BOAT WASH

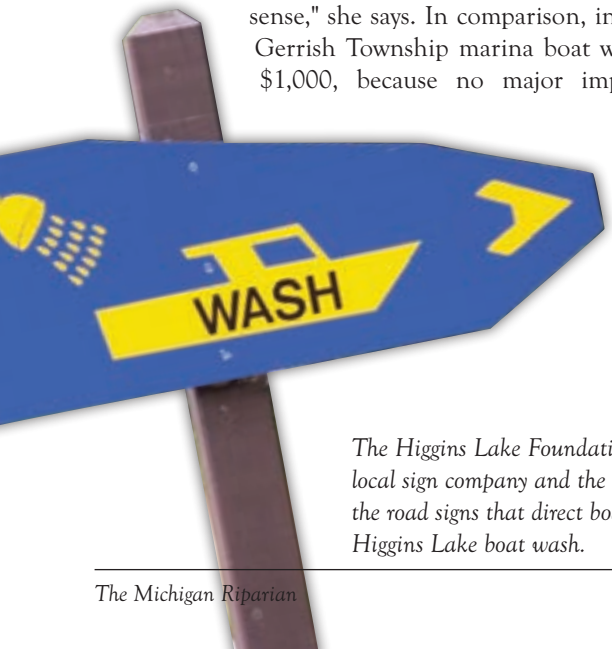
(Continued from page 15)

Higgins Lake State Park. The boat washes at the North and South parks were built on state land, and therefore required a close collaboration with the Michigan Department of Natural Resources.

Boat wash details: The North Higgins Lake State Park boat wash is not on the lake, but is a minute's drive down the road from the boat launch. The boat washes at the marina and at South Higgins Lake State Park are located at the boat-launch sites. All are self-operated (unheated) power washers that are available during the summer boating season. Instructions are posted.

Education and marketing: The Higgins Lake Foundation's newsletter promotes the boat washes and also provides educational signage on-site, as well as blue and yellow road signs to direct boaters to the North location. "In addition, there's actually a blitz statewide to promote the use of boat washes, so we get a team out (at the boat wash) a couple of days a year to meet and greet boaters, and to talk about aquatic invasive species to increase awareness," Springstead says. Besides those materials, the U.S. Fish and Wildlife provided signs about aquatic invasive species and prevention, and they are posted at different entry points around the lake, and the Higgins Lake Foundation also uses the Clean Boats Clean Waters diagram that explains proper boat-washing technique at the North site, and will add one to the South site in spring 2016.

Costs: Initial cost for the North boat wash was $60,000, which included construction of the boat-wash facility; addition of power-spraying equipment; construction and paving of road lanes that provide simultaneous washing of two boats; installation of underground electrical service and a new water well dedicated to the boat wash; and culverts to accept runoff water from the boat wash. The initial estimate for the South boat wash was $30,000, but that grew to $70,000 due to added requirements made by the Michigan Department of Environmental Quality (DEQ). "Since more and more lakes are adding more boat washes – thank goodness – the DEQ is taking a more careful look at where where that runoff water is going. That has resulted in a more elaborate process to make sure it's not going right back into the lake, and that makes sense," she says. In comparison, initial costs for the Gerrish Township marina boat wash were around $1,000, because no major improvements were necessary. Maintenance costs for each of the three boat washes are minimal – no more than $500 a year for utilities and minor repair, such as replacement power-washer wands.



The Higgins Lake Foundation worked with a local sign company and the DNR to develop the road signs that direct boaters to the North Higgins Lake boat wash.

The U.S. Fish and Wildlife provided signs about aquatic invasive species and prevention, and they are posted at different entry points around Higgins Lake. Photos by Tabitha Sutterfield.

Funding: Higgins Lake Foundation donors are the primary funders of the boat-wash construction. "We're lucky here at Higgins that we have a lot of people who support the efforts of the foundation to preserve and protect the lake with their donations," she says. Besides donations, the foundation has an annual fundraiser to support its work. It also received grant funds for the North boat wash from the Roscommon County Community Foundation, and some additional funding from the Entrust Foundation for both the North and South state park boat washes. Maintenance costs, which typically run less than $500 a year per site, are paid by the Higgins Lake Property Owners Association at the North site, and by the DNR at the South site.

Vicki Springstead's Tips:

➔Try to put the boat wash at the boat-launch site. "That's the ideal situation, because it's convenient for people and it's a reminder.

Most people want to do the right thing. It just takes a couple of minutes and away they go," she says.

➔Form good working relationships with the DNR. "Start with your local DNR representative, who may be the park ranger depending on the location of your project. That representative will then run the project up the ladder from there," she says.

➔Tap the expertise of local people. An engineer, who, was a member of the Higgins Lake Foundation Board, was very helpful in drawing up the boat-wash plans.

➔Start early in obtaining permits from the DEQ. Such permits take a careful look at boat-wash runoff, which may affect the exact location of the boat wash.

➔Learn from others. "We get a lot of visits from other lake associations that have come to see our boat washes, and we're happy to give them a tour and explain how we did it," she says. To get more information about a tour, contact the Higgins Lake Foundation office at 989-275-9183.

Michigan Inland Lakes Convention 2016:

Science and Leadership—A Formula for Successful Lake Protection and Management

By Gabriela Shirkey and Jo Latimore
Michigan State University

Crystal Lake, Benzie County. Credit: Jo Latimore

Back again after its inaugural success, the biannual Michigan Inland Lakes Convention invites lake enthusiasts of all kinds—researchers, water resource professionals, local leaders, residents and vacationers alike—to partake in workshops and presentations that will engage, educate, and empower. The convention will be held in Boyne Falls, Michigan from April 28–30, 2016 at the Boyne Mountain Resort.

Those who live, work, and play in Michigan have witnessed the growing interest in the state's incredible beauty; and each, in their own way, take pride in knowing that we truly are the Great Lakes state, home to over 11,000 inland lakes.

In 2014, we witnessed the untapped strength and potential of our Michigan network. Those who attended the inaugural Convention expressed strong interest in learning about the latest developments in lake science and in developing their own skills to become better stewards of Michigan's lakes. In 2016, this our focus— to bring you the latest scientific advancements and leadership tools for successful lake protection and management.

Three days of educational presentations, discussions and in-depth workshops focusing exclusively on Michigan's inland lakes will be offered. Dozens of nonprofit, business and governmental exhibitors will showcase their projects, resources and services at the Convention. Participants will have ample opportunities to meet and network with fellow lake enthusiasts and experts throughout the event.

Kick-off begins on Thursday, April 28, with a full day of workshops, including the annual Cooperative Lakes Monitoring Program volunteer training. Other workshops will give participants the opportunity to develop knowledge and skills by exploring aquatic plant identification, fish ecology and management, and local government tools for lake and wetland protection.

Two outstanding keynote speakers will energize the Convention on Friday morning. Rebecca Williams, reporter and producer of The Environment Report for Michigan Radio, will share her experience communicating with the public about complex scientific issues and share tips to help us better tell the story of Michigan's lakes. David Mifsud, an expert herpetologist and wetland ecologist, will speak about the amphibians and reptiles that call Michigan's lakes and shorelines home, as well as how we can protect these fascinating animals.

Friday afternoon and Saturday morning will include presentations and discussions on an array of inland lake management topics and plenty of networking opportunities. Breakout session topics will include aquatic invasive species management, riparian law and current lake research.

Natural lake shoreline. Credit: Jo Latimore

Convention registration will open in January, with "Early Bird" registration ending March 15, 2016. Attendees can choose to attend all three days or register for single days.

Additional details can be found on the Michigan Inland Lakes Convention website at http://michiganlakes.msue.msu.edu. Stay up-to-date on the latest convention developments through Facebook (www.facebook.com/michiganinlandlakesconvention) and Twitter (@Mich_Lakes).

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Michigan Inland Lakes Convention 2016

(Continued from page 33)

The Michigan Inland Lakes Partnership is proud to bring back this popular event. The Convention is a cooperative effort between the many public and private organizations that make up the Michigan Inland Lakes Partnership, including: Michigan Lake and Stream Associations, Inc., the Michigan Chapter of the North American Lake Management Society, Michigan State University Extension, Michigan Natural Shoreline Partnership, Michigan Department of Natural Resources, Michigan Department of Environmental Quality, and the Michigan State University Institute of Water Research.

The Michigan Inland Lakes Partnership promotes collaboration between locals, professionals, researchers, and agencies in order to advance stewardship of Michigan's inland lakes. For more information about this organization, visit their website at http://michiganlakes.msue.msu.edu/ or follow them on Facebook (www.facebook.com/michiganinlandlakesconvention/) and Twitter (https://twitter.com/Mich_Lakes).

DEQ's Kevin Walters shows 2014 Convention participants a Mobile Boat Washing Unit that can stop the spread of aquatic invasive species. Credit: Angela DePalma-Dow

> "The Convention is a cooperative effort between the many public and private organizations that make up the Michigan Inland Lakes Partnership"

A Convention attendee discusses lake protection with a representative from the Michigan Department of Environmental Quality.

CLMP volunteers learn how to identify aquatic plants at the 2014 Convention.

Strong Cross-Currents in the Great Lakes

(Continued from page 23)

Unacceptable High Level of Risk and Imminent Hazard

The Pipeline Task Force released its report in July 2015,[10] finding that the high magnitude of harm coupled with the imminent risk of a release from Line 5 required immediate action. The report recommended an independent risk analysis and financial assurance to cover the hundreds of millions of dollars in damages likely if there was a release – perhaps a billion dollars or more, if the Kalamazoo disaster is the benchmark. Because of the catastrophic harm, the report required an independent, comprehensive alternatives analysis to oil transport in the Straits, including decommissioning Line 5.

In September 2015, Flow for Love of Water (FLOW), a Great Lakes policy center, submitted a scientific and legal analysis of Line 5 and Task Force Report, and concluded that the risk of erosion, strong currents and lack of stability, and the weight and corrosive nature of the underwater segment of the Line 5 pipeline created an imminent hazard. Underscored by the Coast Guard's observation that a response to an oil spill in the Straits during winter months would be nearly impossible, FLOW's found that a rigorous schedule for immediate action to eliminate or lower the risk was critical.

Suitable Alternatives to Line 5

In October 2015, Governor Rick Snyder's Executive Order 2015-12 created the Michigan Pipeline Safety Advisory Board, and charged it with completing an alternatives analysis to the transport of oil through Line 5. The Board met in early December to review what it would require of experts to complete the report within 12 to 18 months.

In December, FLOW advisors, analyzed the larger crude oil pipeline system in the Great Lakes region and submitted a report to the Pipeline Safety Advisory Board to demonstrate that this larger system has the capacity and flexibility to meet the needs of oil transport from Canada or elsewhere to meet the needs of refineries in Sarnia, Detroit and two in Toledo, without transporting oil through Line 5 in the Straits. [11]

Mackinac Bridge in winter

Enbridge has claimed that Line 5 is critical to Michigan's economy, and propane could no longer be transported to customers in the Upper Peninsula without it. FLOW report shows that propane is stripped from Line 5 in the U.P. near Escanaba and delivered to customers without passing through the Straits. It also shows that most of the oil in Line 5 goes to

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Strong Cross-Currents in the Great Lakes:

(Continued from page 35)

Sarnia, and that no more than 10 percent of the oil goes to the Detroit or Toledo refineries, a need that can be met through suitable options and adjustments within the larger pipeline system.

Since the 2010 Kalamazoo River debacle surrounding Line 6b, Enbridge has nearly completed its own version of the now-rejected "Keystone XL pipeline." Enbridge almost doubled the capacity of its "Alberta Clipper" pipeline from 450,000 to 800,000 bpd, then doubled its pipeline capacity to 800,000 bpd from the Alberta Clipper through Wisconsin and around the southern end of Lake Michigan. To complete it "Keystone XL" clone, the company doubled its pipeline capacity in 6b across southern Michigan. In the past few years, Enbridge filed applications with the Michigan Public Service Commission for what it characterized as maintenance and integrity work for small segments of Line 6b. By the time the segmented projects were completed, Enbridge had replaced the failed old Line 6b with a new Line 6b with twice the capacity- 800,000 bid, which matches the doubled capacity of its Alberta Clipper. As a result of the segmented approach, Enbridge avoided the rigorous impact and alternative analyses required by state environmental laws.

FLOW's December report makes it clear that a proper alternatives analysis would demonstrate ample capacity and flexibility within this expanded system to meet the needs of Michigan and the Midwest. In other words, transporting oil through Line 5 in the Straits, the heart of the Great Lakes, is not necessary.

Breach of Public Trust and Prudent Standard of Care

A leak or spill in the Mackinac Straits would devastate the ecosystem, fishing, and riparian properties, shut down drinking water on Mackinac Island, and ruin one of the pinnacles of Michigan's water- and tourist-based economy. The communities, beaches, wildlife, and fishery along the Gulf of Mexico have not recovered from the Deepwater Horizon spill five years ago. A dark cloud overshadows recovery of tourism and economy of the Gulf region.

State officials have a solemn duty to prevent harm to the public trust waters and uses of the Great Lakes. This duty is perpetual, and Enbridge's oil pipeline easement is subordinate to this overriding public trust. In its easement. Enbridge agreed that it "shall exercise the due care of a reasonably prudent person" and "at all times." The catastrophic harm from a rupture or leak of oil in the Straits is unacceptable. The continued transport of crude oil in Line 5 in the Straits is not prudent, reasonable, or compatible with the public trust. In the face of alternatives to be taken to accommodate crude oil transports within the larger system, Line 5 in the Straits is not essential. State leaders, as trustees of the public trust, and Enbridge should step forward and eliminate this unnecessary risk of unthinkable harm now; and stop gambling with the people, the Great Lakes and our State's economy and future.

References

[1]*President and Policy Advisor, Jim Olson, For Love of Water (FLOW), Great Lakes Law and Policy; water and environmental attorney, Olson, Bzdok & Howard, P.C., Traverse City, Michigan. For background reports and information from FLOW and its programs, see www.flowforwater.org.*

[2]*David Schwab, University of Michigan Water Center, lecture, Mackinac Island, Aug. 12, 2015. Schwab discovered a journal entry by an early French explorer that observed the strong currents moving back and forth between Lake Huron and Lake Michigan.*

[3]*Collins v Gerhardt, 237 Mich 38 (1926).*

[4]*State v Venice of America, 160 Mich 680 (1910); Collins v Gerhardt, supra; Obrecht v National Gypsum Co., 361 Mich 399 (1960).*

[5]*Illinois Central Railroad v. Illinois, 146 U.S. 387 (1892).*

[6]*Video showing what would happen if there was an oil spill in the Straits, David Schwab, University of Michigan Water Center.*

[7]*Andy Buchsbaum, "Summer Disaster Movie? No Thanks," National Wildlife Federation, Wildlife Promise Blog, Aug. 9, 2015; Keith Matheny, "State Pipeline Break Would Devastate Great Lakes," Detroit Free Press, Oct. 13, 2015.*

[8]*John Austin, "Michigan's Mounting Water Failures," Detroit Free Press, Guest Writer, Oct. 15, 2015.*

[9]*WTCM Radio, July 15, 2015.*

[10]*Michigan Petroleum Task Force Report, September 2015.*

[11]*"Eliminating Line 5 Oil Pipeline's Unacceptable Risk to the Great Lakes through a Comprehensive Alternatives Analysis," FLOW, Dec. 14, 2015, www.flowforwater.org.*

Docks and Boat Hoists – Everything You Always Wanted to Know

By: Clifford H. Bloom, Esq.
Bloom Sluggett Morgan, PC | Grand Rapids, Michigan | www.bsmlawpc.com


Birch Lake

On inland lakes in Michigan, virtually every property owner has a dock and frequently, a boat hoist as well. Numerous riparians also have a floating raft or the equivalent. Few riparians think about the legal and liability implications for such items, however.

In Michigan, the common lake access structure on inland lakes is generally referred to as a "dock", while the permanent structures on the Great Lakes tend to be referred to as "piers". Quite often, one can tell that a person is not from Michigan when they speak of their seasonal "pier" on an inland lake!

Under the Michigan common law, riparian property owners generally have the right to install a dock, as well as a boat hoist and swimming raft, on their bottomlands. That is one of the benefits of riparian ownership. See *Thies v Howland*, 424 Mich 282; 380 NW2d 463 (1985); *Burt v Munger*, 314 Mich 659; 23 NW2d 117 (1946); *Hilt v Weber*, 252 Mich 198; 233 NW 159 (1930); *Pierce v Riley*, 81 Mich App 39; 264 NW2d 110 (1978); *Sewers v Hacklander*, 219 Mich 143; 188 NW 547 (1922) and *Hall v Alford*, 114 Mich 165; 72 NW 137 (1897). However, it is also true that a riparian must place such items on their own bottomlands.

With most inland lakes in Michigan, the bottomlands of a riparian property extend under the water to the center of the lake. See *Hall v Wantz*, 336 Mich 112; 57 NW2d 462 (1953); *Gregory v LaFaive*, 172 Mich App 354; 431 NW2d 511 (1988) and *West Michigan Dock & Market Corp v Landland Investment*, 210 Mich App 505; 534 NW2d 212 (1995). Unfortunately, it is frequently difficult to determine the angle at which riparian boundary lines under the water (and along the bottomlands) radiate to the center of an inland lake. Those angles almost never match the angles of the side lot lines on dry land of the lot or parcel involved. This uncertainty in the law can lead to disputes regarding the boundaries of bottomlands. Nevertheless, if you are a riparian land owner, you must make sure that your dock, boat hoist and swim raft are all located on and over your own bottomlands. It can constitute a trespass for any of those items to encroach on your neighbor's lake bottomlands unless you have your neighbor's permission. See *Hall v Wantz*, 336 Mich 112; 57 NW2d 462 (1953).

Is there a limit on the length of a dock or how far out into the lake a swim raft can be anchored? Under the common law, there is no definitive limit from the shore *per se*. However, such items cannot unduly interfere with navigability or the rights of other riparians to reasonably use their respective riparian properties. See *Thompson v Enz*, 379 Mich 667; 154 NW2d 472 (1967); *Three Lakes Assn v Kessler*, 91 Mich App 371; 285 NW2d 300 (1979); *Pierce v Riley*, 81 Mich App 39; 264 NW2d 110 (1978); *West Michigan Dock & Market Corp v Lakeland Investments*, 210 Mich App 505; 534 NW2d 212 (1995) and *Square Lake Hills Condo Assn v Bloomfield Twp*, 437 Mich 310; 471 NW2d 321 (1991).

Pursuant to Michigan statute, a dock, boat hoist or swim raft cannot be a hazard to navigation. See MCL 324.80163. If it is, the Michigan Department of Natural Resources ("DNR") can require the riparian landowner to move or even remove such an item. And, if the property owner does not do so, the DNR might move or remove the item itself and bill the property owner for the cost. See MCL 324.80163.

Some local municipalities (a city, village or township) do have ordinance provisions which regulate docks. Those regulations can limit the length of a dock from shore, the width of a dock and the height of a dock, as well as ban permanent docks by requiring docks to be removed from the water during the off-season. Some municipalities also require docks and shore stations to be located a certain distance away from the side lot lines at the waterfront. A limited number of municipalities also regulate swim rafts and boat hoists by ordinance.

Permanent docks or piers (i.e., docks or piers that are left in the water year-round) require a special state permit. Multi-family docks and piers are often regulated by municipal zoning ordinances and sometimes by stand-alone police power ordinances. Multi-family docks or piers also require a marina permit from the State of Michigan.

Moored or anchored boats cannot drift over the bottomlands of one's neighbor, even if the dock or anchor is located on the bottomlands of the owner of the boat. Likewise, a boater out in the lake cannot anchor or moor on the bottomlands of another without that riparian's permission, except for short periods of time as an incident of navigability, fishing or fowl hunting. See *Hall v Wantz*, 336 Mich 112; 57 NW2d 462 (1953).

Given the potential for accidents on the waterfront, it very important for a riparian property owner to carry sufficient liability insurance regarding the riparian's dock, boat hoist and swim raft. Today, even a million dollars in liability insurance coverage is likely not enough. Also, keeping one's dock and raft in a good and safe condition, as well as not placing them too far out into the water, can help minimize the potential for accidents, thus lowering the liability risk.

As you can see, there is a lot more to docks, boat hoists and swim rafts than you thought!

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