

SUMMER  
2014



Vol. 49 No. 3

# THE MICHIGAN RIPARIAN

[www.mi-riparian.org](http://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



Photo Credit: Aerial Graphics Photography

## Deer Lake

Deer Lake is in a distinct category of lakes that can be recognized as a small lake that likes to act like a big lake. Located in Oakland County, formed by glaciers thousands of years ago, it is 137 acres in size and 63 feet deep at its deepest point. Anglers can expect to catch a variety of fish, including Black Crappie, Bluegill, Largemouth Bass and Northern Pike.



## ■ WATER & RIPARIAN LAW ■

### CAREY & JASKOWSKI

Attorneys at Law

A Professional Limited Liability Company

2373 S. I-75 Business Loop  
Grayling, MI 49738  
(989) 348-5232

[www.carey-jaskowski.com](http://www.carey-jaskowski.com)

Advocates for lakefront property  
owners and lake associations  
throughout the state.

Representation on road end abuse, zoning  
plat vacations, and MDNRE permitting.

Any law firm can claim they know  
riparian law. Ask to see their resume.

See our published cases at  
[www.carey-jaskowski.com](http://www.carey-jaskowski.com)



# KILL LAKE WEEDS

Proven **AQUACIDE PELLETS**  
Marble size pellets. Work at any depth.

Before



After



**10 lb. bag** treats up to  
4,000 sq.ft. **\$85.00.** **50 lb. bag**  
treats up to 20,000 sq.ft. **\$334.00.**  
**FREE SHIPPING!**  
Certified and approved for use  
by state agencies. State permit  
may be required. Registered with  
the Federal E.P.A.

## 800-328-9350

## KillLakeWeeds.com

Order online today, or request free information.

**AQUACIDE CO.**  
PO Box 10748, **DEPT 691**  
White Bear Lake, MN 55110-0748

Our  
59th  
year



Preserving Our Lakes Today for Our Generations Tomorrow



Serving Michigan Since 1995



3088 Hottis Rd. Hale, MI 48739

All Of Your Lake & Pond Needs

Lake & Pond Management 🌿 Aquatic Weed & Algae Control 🌿 Aquatic Weed Harvesting  
Biological Weed Control 🌿 Lake & Pond Dredging 🌿 Custom Aeration Systems  
Water Quality Consulting 🌿 Decorative Fountains 🌿 Licensed, Insured & Bonded

**For More Information Call Toll Free: 1-877-SAV-LAKE (728-5253)**

[www.LakeAndPond.com](http://www.LakeAndPond.com)

THE MICHIGAN RIPARIAN (ISSN 0279-2524) is published quarterly for \$3.50 per issue by the Michigan Lakes and Streams Foundation, a Michigan non-profit corporation. Periodical postage is paid at Lansing, Michigan and additional mailing offices.

**POSTMASTER:**

Send address changes to:  
The Michigan Riparian  
300 N. State St., Suite A, Stanton, MI 48888

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.

THE MICHIGAN RIPARIAN magazine is published quarterly and is mailed to subscribers in the Winter, Spring, Summer, and Fall each year.

**The Michigan Riparian**  
PUBLISHING OFFICE  
300 N. State St., Suite A  
Stanton, MI 48888

**PUBLISHER • Sharon Wagner**  
**Phone 989-831-5100**  
**E-mail info@mi-riparian.org**

**SUBSCRIPTION RATES** (4 issues/year)  
Individual annual subscription: \$14  
Lake association quantity subscriptions: \$12

**ADVERTISING RATES**

Advertising rates sent upon request or available on website.

**DEADLINES:** August 15 for Autumn issue  
December 15 for Winter issue  
March 15 for Spring issue  
May 15 for Summer issue

*Printed by Spartan Printing, Lansing, Michigan*

The Michigan Lakes & Streams Foundation (as well as the Michigan Lake & Stream Associations, Inc.) (collectively, "MLSA") is not responsible for any of the views or opinions expressed by the advertisers or writers in this magazine. While the Michigan Riparian has not intentionally printed incorrect material or admissions, the contents are nevertheless the responsibility of the parties furnishing materials for this magazine. The accuracy of information is subject to information known to us at the printing deadline. We apologize for any errors.

No maps, illustrations, articles or other portions of this magazine may be reproduced or copied in any form or format without the prior written permission from MLSA. Copying, distribution or modifications of or to any material or information contained on this site, in any form, is strictly prohibited unless with the prior written permission of MLSA.

The information provided in this magazine is for informational purposes only and does not constitute the giving or offering of legal, accounting, engineering, technical or other professional advice or counsel. Although MLSA strives to be accurate, errors do occasionally occur. This magazine is not a substitute for legal, engineering, accounting or other professional advice. Using or reading this magazine does not create an attorney-client relationship or other professional-client relationship.

This magazine is provided on an "AS IS" basis and as such, may contain inaccuracies or errors. MLSA does not warrant the accuracy or completeness of this magazine or anything herein. MLSA expressly disclaims all warranties, express or implied or statutory, of any kind. This magazine may be incorrect, out of date, inaccurate for any particular matter and may contain errors, problems, defects or other limitations. The same applies to any other sources or links mentioned herein. For legal, engineering, accounting or other professional advice, consult your own attorney, accountant, engineer or other professional.

By using this magazine, the reader agrees to accept and abide by the above. If the reader does not so agree to accept and abide by the above, the reader should not use this magazine (or any information or links herein).

Copyright © 2014 by the Michigan Lakes & Streams Foundation

## FROM THE PUBLISHER

### In this issue of the Michigan Riparian

you will find pictures of Watermilfoil, Frog-bit and 'Rock Snot' to sharpen your identification skills. Read about their characteristics and where to spot them and the steps to take to reduce the spread of invasive species in Michigan's inland lakes and streams.

On page 13, is an article about liability potential for associations in Cliff Bloom's Attorney Writes feature. The dangers of coal tar and the health risk it poses to the public, especially children, as well as to the Great Lakes, is found on page 18.

We receive many emails and phone calls regarding your questions and issues that you are experiencing on your lake. One of most frequently asked questions is about road ends. This question is addressed in Ask the Experts on page 12. A new bill, as follows, was signed into law on June 12, 2014.

#### ENROLLED SENATE BILL No. 680

AN ACT to amend 1994 PA 451, entitled "An act to protect the environment and natural resources of the state; to codify, revise, consolidate, and classify laws relating to the environment and natural resources of the state; to regulate the discharge of certain substances into the environment; to regulate the use of certain lands, waters, and other natural resources of the state; to protect the people's right to hunt and fish; to prescribe the powers and duties of certain state and local agencies and officials; to provide for certain charges, fees, assessments, and donations; to provide certain appropriations; to prescribe penalties and provide remedies; and to repeal acts and parts of acts," by amending section 30111b (MCL 324.30111b), as added by 2012 PA 56.

#### *The People of the State of Michigan enact:*

Sec. 30111b. (1) A public road end shall not be used for any of the following unless a recorded deed, recorded easement, or other recorded dedication expressly provides otherwise:

- (a) Construction, installation, maintenance, or use of boat hoists or boat anchorage devices.
- (b) Mooring or docking of a vessel between 12 midnight and sunrise.
- (c) Any activity that obstructs ingress to or egress from the inland lake or stream.

(2) A public road end shall not be used for the construction, installation, maintenance, or use of a dock or wharf other than a single seasonal public dock or wharf that is authorized by the local unit of government, subject to any permit required under this part. This subsection does not prohibit any use that is expressly authorized by a recorded deed, recorded easement, or other recorded dedication. This subsection does not permit any use that exceeds the uses authorized by a recorded deed, recorded easement, other recorded dedication, or a court order.

(3) A local unit of government may prohibit a use of a public road end if that use violates this section.

(4) A person who violates subsection (1) or (2) is guilty of a misdemeanor punishable by a fine of not more than \$500.00. Each 24-hour period in which a violation exists represents a separate violation of this section. A peace officer may issue an appearance ticket as authorized by sections 9c to 9g of chapter IV of the code of criminal procedure, 1927 PA 175, MCL 764.9c to 764.9g, to a person who violates subsection (1) or (2).

(5) This section does not prohibit a person or agency from commencing a civil action for conduct that violates this section.

(6) As used in this section:

- (a) "Local unit of government" means a township, city, or village in which the public road end is located.
- (b) "Public road end" means the terminus at an inland lake or stream of a road that is lawfully open for use by the public.

This act is ordered to take immediate effect.

Keep your questions, stories and pictures coming. I hope you enjoy the summer issue of the Michigan Riparian and enjoy the summer!



-publisher, Sharon Wagner  
Send your information to:  
The Michigan Riparian  
300 N. State St., Ste A  
Stanton, MI 48888  
(989) 831-5100



# 00 CONTENTS

6 Deer Lake

12 Ask the Experts

13 Attorney Writes: Liability Potential for Associations

14 Au Gres-Sims Elementary Youth Lead Watershed  
Monitoring Project

17 Didymo (Didymosphenia geminata) aka 'Rock Snot' is  
Spreading

18 MLSA Newsletter

20 Lake Happenings

21 Love My Lake

22 Incorporating Genetic Identifications of Watermilfoils  
into Aquatic Vegetation Mapping to Inform Management  
Decisions

## Subscribe to The Michigan Riparian Just \$14.00/year!

Please fill out this form, clip it  
and mail it in with your \$14 check  
made payable to:

"The Michigan Riparian"

**Mail to:** The Michigan Riparian  
300 N. State St., Suite A  
Stanton, MI 48888 • 989-831-5100



**First Name:** \_\_\_\_\_

**Last Name:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**City:** \_\_\_\_\_

**State and ZIP:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_



### FOR OFFICE USE ONLY:

date rec'd \_\_\_\_\_ amt \_\_\_\_\_

ck no \_\_\_\_\_ exp. issue \_\_\_\_\_

## 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](mailto: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: \_\_\_\_\_  
Copyrighted by the Michigan Lakes & Streams Foundation."

## Restorative Lake Sciences, LLC

"Healing Your Lake with Sound Science  
and a Well-Informed Community"



- Advanced-degreed Aquatic Scientists
- Over 120 years of combined experience on inland lake studies, management, and restoration
- Fully insured
- Assistance with funding
- [www.restorativelakesciences.com](http://www.restorativelakesciences.com)

# 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.

**Waterfront owners are the final defense of their lakes and streams.**

**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.**

Name \_\_\_\_\_ Date \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

County \_\_\_\_\_ Phone \_\_\_\_\_

Email Address \_\_\_\_\_

Township \_\_\_\_\_ Lake and Stream Association \_\_\_\_\_

☐ Individual Membership \$500

☐ Lake or Stream Association \$100

☐ Donation \$ \_\_\_\_\_

☐ Check here if you would like to donate to the legal defense fund.

**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 MWA Members,

I am pleased to report that Senate Bill 680 has been signed by the governor and is now law. Your Michigan Waterfront Alliance lobbyist, Matt Kurta of Karoub Associates, and all those who lobbied for the passage of this important piece of road end legislation are to be congratulated.

Another front-burner legislation is Senator Casperson's Senate Bill 444. A measure to reduce regulation and simplify the process for people to treat and control aquatic invasive species, this bill received final approval by the Michigan Senate on June 14. By the time you read this it should be signed into law. It is progress, but a key part of this legislation, which would have provided a way for lake communities to share the cost of invasive species control with public users, was deleted. After meeting with Kendra

### MICHIGAN WATERFRONT ALLIANCE

P.O. Box 369

Fenton, Michigan 48430-0369

[www.mwai.org](http://www.mwai.org)



Evert from Senator Casperson's office for an extended time on June 9, we were glad to learn that even though we lost that battle on local funding, we must have helped to raise some awareness because \$5,000,000 has been budgeted this year to fight invasives. The MWA board voted to send a letter to DNR Director Creagh supporting the allocation of a greater portion of the \$5 million toward grants versus staffing.

Your MWA board reviewed the "flawed" result of the Holton vs Ward Appellate Court ruling which will have statewide impact if allowed to stand. It would mean that certain impounded lakes would not have riparian rights.

The MWA board voted to retain attorney William Carey to file an amicus brief on this matter with the Michigan Supreme Court. It is estimated that over 1,000 Michigan lakes could be affected! **Every riparian who lives on a lake that may have been a stream or creek before being dammed, or who lives on a man-made lake should join the MWA as soon as possible, if only for this one issue.**

Sincerely,  
Bob Frye, President  
Michigan Waterfront Alliance



# Deer Lake



## Contributors:

Rob Namowicz, Owner, Cole Lake Service

Toni Smith, Director Clarkston Heritage Museum

Deer Lake Property Owners - Officers & Committee Members

## Start of it All

Off yonder and long ago what has become the peninsula state of Michigan was covered completely with a mass of ice. That slow, seemingly ceaseless grind and geological gouging receded a mere 14,000-years ago, or so. What Mother Nature bequeathed to us was a tundra-like landscape that stretched and grew into a forest haven for wild beasts. The landscape was dotted with thousands of fresh-water puddles ranging in size from a few acres to expanses of fresh-water reservoirs many miles across. Of course, back then these units of measure meant nothing to the Paleo natives who chased caribou for food and clothing. But those old boys set the pattern that we moderns celebrate today. But excuse me, I digress.

Left among the drumlins of Southeast Michigan were giant ice balls that displaced the gravelly overburden left by the receding glacier. These slower melting globs formed depressions modern limnologists call 'kettle' lakes. Here in Oakland County we can count more than 450 such lakes, five acres in size or larger. In addition, we sit astride a miniature 'continental divide'. Our smallish nubbins of moraines and till rise above sea level 600 ft. to over 1200 ft., hosting the headwaters of five river systems. They meander and flow away to meet their larger kin, Saginaw Bay and Detroit River. These five-the rivers Rouge, Clinton, Huron, Shiawasee and Flint can all trace their beginnings to Oakland County.

## Early Memories

Yours truly began here too. My earliest memories are of floating downstream in rural Rose Township plying the waters afloat in my snow suit. It was winter, and

making headway required breaking ice with my little mitten-covered fists. All was fine and festive until an attentive babysitter jumped into the freezing water to keep my sodden suit from submerging. Higher powers decided swimming lessons were in order that spring, and much of my youth was spent at Holly Township beach on Bush Lake.

My father had built the beach for the township in the middle fifties, just in time for Red Cross-trained lifeguard instructors to tutor tots on proper strokes. Dad and his partner, Jim Cole, had established a waterfront development company after returning from WWII. Jim had graduated from Michigan Tech as a civil engineer. He and my father grew up nearly together in rural Rose, and after their service in WWII, returned home to start a small enterprise helping Michiganders enjoy their glacial gifts. As a lad I watched them build lakes, beaches, docks and seawalls, dig canals and construct dams. Water meant opportunity and great satisfaction, healthy and plentiful. I drank it in.



Swimmers at the north shore of Deer Lake in the 1920's. 175 is approx. 3 football fields to the north of the Model T in the back ground. Pine Knob Ski Resort and DTE Energy Music Theater is 3 miles south. Photo courtesy of the Clarkston Community Historical Society.

(Continued on page 7)





Photo courtesy of the Clarkston Community Historical Society.



Small farm back in the day. The 2nd lake in the background is called Middle Lake and is separated by White Lake Road. Deer Lake is the first lake in Independence Township receiving output from the Clinton River Watershed. Deer Lake outlets to Middle Lake, on to Dollar Lake, into Green Lake etc. and eventually the Detroit River. Photo courtesy of the Clarkston Community Historical Society.

(Continued from page 6)

## How to Construct a Dock in Deep Waters

The 'kettle' nature of Deer Lake is typical of glacial lakes in that the bathymetry demands anyone constructing a dock for mooring or fishing must contend with deep water very close to shore. In earlier days, long cedar posts were cut and set through the ice in order to build docks. Building a dock during boating season was nearly impossible. Remnants of earlier docks can be spotted from time to time. When these pieces of antiquity are pulled from their watery lodging, they usually have been set 'top' down' to get greater penetration into the lake bed.

As an old pile is pulled up, often there is evidence as old as the tree. The part that has been sunk in the lake bottom sometimes comes up looking as fresh as the day it was set. Early dock builders would



View of the Deer Lake Inn from the east side of the lake ca 1900s. If you concentrate on the right corner of the Inn you will see rental cottages in the foreground. Deer Lake and the Inn were popular destinations for travelers from Ohio, Detroit and Pontiac. Photo courtesy of the Clarkston Community Historical Society.



Dock on southwest end of Deer Lake 1912.

Photo courtesy of the Clarkston Community Historical Society.

sharpen the tree tops with a hatchet or an axe. When the marly residue is washed away from a post that has been retrieved, you can imagine the fellow who felled and stripped the tree, walked the ice and manhandled the post into position. Like an archeologist, you can see and hold history in your hands, evidence of man's struggle to tame his surroundings.

## An Early Log Cabin

In the late sixties, Dad found a couple of low-lying lots at the end of a small gravel drive on Deer Lake in Independence Township. He built a home for us there.

In its earliest days, a handful of homes sat on the southwest shore of Deer Lake, including one of the oldest dwellings on the lake, an old

(Continued on page 8)



# Deer Lake

(Continued from page 7)



Photo courtesy of the Clarkston Community Historical Society.

log cabin belonging to Ralph and Alma Mimmis. They were French Canadians who had built the cabin themselves in 1929. Ralph was a hunter, trapper and fisherman who hunted and fished into his last days.

Frank Strother, a lake neighbor, recalls coming to Deer Lake as a youngster with his parents and initially staying high on the hill at Deer Lake Inn. Then his family rented a cabin from the Inn right on the lake. His father so enjoyed respites on Deer Lake, he bought property on the lake and built a home. So young Frank, and his sister Jody, grew up next to one of the oldest homes on the lake, the log cabin. The Strother children skated on the lake with Alma, avoiding the soft ice where springs kept water moving even in harshest winters. Ralph and Alma built a wishing well in the lakeside yard with the hope of draining the soggy spring-soaked soils and corralling the flow. Today the cabin is long gone, and a modern home has replaced it. But the springs still run, cold and clear.

## Lessons Learned

Deer Lake has taught me many lessons. In the early seventies, just after the house was built, Dad acquired a pontoon boat for fishing. In my early twenties, I invited a young lady to the lake for a boat ride and a swim. Off we went on the 'toon' up to the north end. The north end of the lake is a no wake zone, perfect for more leisurely activities, things with which I had little experience. In my eagerness to become leisurely, I set the throttle to full stop and tossed the anchor over the side. Turning to my date, I said, "Isn't this great!" just in time to notice the anchor line was not secured. I'll not make that mistake again.

## Work and Fun

Some years ago our crew returned to base after working on one of Oakland County's other lakes. We had been blown off our project by a strong, north wind. As we went lakeside, just to check the waves, we were amazed to see a boatlift, canopy with vinyl and boat floating by! The wind had worked on the hoist canopy enough to move the boat and hoist over the drop off. The hoist canopy frame dropped over the boat, and the speed boat carried the hoist the length of the lake, beaching it. That was a neat trick!

Experiences like these have led us to present awards for 'Flying Boatlifts'. Not yet an official Olympic Event, every spring early birds will install their canopy vinyl before their boat is on the hoist. This has been proven to attract wind storms-hence the need for awards. They are given for distance, the most damaged hoist, and the coveted deep-water award.

Then there's the Deer Lake Athletic Club, located about a stone's throw from Deer Lake. Tennis, racquetball, swimming pools (indoors and out) restaurant and banquet facilities-the total 21st century pleasure palace where you can get slim, go for a



Clarkston Train Station. Photo courtesy of the Clarkston Community Historical Society.

(Continued on page 9)



(Continued from page 8)

swim, eat until it ouches you, play ball games, and have a personal trainer work you to a fit frazzle. I've personally referred to it as the rhinestone in the navel of Oakland County. And I can say that with some authority because of the several years spent in the employ of the builder/developer/owner. Forest Milzow is proprietor of the club and is a hands-on fellow. The facility started modestly and has expanded over more than four decades.

## Henry Ford's Impact on Deer Lake

The Clarkston Community was richly influenced by Henry Ford. Prior to 1940, the Ford Motor Company was planning to make this area a manufacturing site, using the flowing waters of Mill Pond in Clarkston to generate electricity for its plant. The founders of Clarkston chose to maintain the existing atmosphere and not create an industrial complex. Eventually, Mr. Ford donated some of the property to Clarkston and sold off the rest.

Mr. Ford also had a tractor proving ground located on his Clarkston properties and provided training classes for Ford tractors. Participants came from as far away as Australia

## Beavers, Beavers, Everywhere Beavers

Some time ago in the spring, our upstream neighbors on Bridge Lake called about their sinking dock. Sure enough, it had been under water long enough for light, mustard-colored algae to form on the formerly lovely white PVC decking.

"Yes, your dock is submerged but so are all the others on the lake including one built by my dad and Jim back in the fifties," I told them. "I can raise your dock, but the problem is beavers damming the lake," I explained. Well, my suggestion didn't really resonate, just so much tosh. I raised the dock a foot, and relocated it several feet into shore.

That fall came another call, "Our dock is under water again!"

Inspection revealed many poplars around the lake were chewed off and felled leaving cone-shaped stumps just about beaver belly high. A giant mound of limbs and mud had been built right at the inlet next to Bridge Lake road end where the bridge once stood. Downstream, at the outlet, beavers had built a dam filling the watercourse and stretching across 300 feet of cedar swamp lowlands. The outlet property is owned by local forester and greenhouse owner, Calvin Bordine. When made aware of the width and breadth of the drowning cedars, he readily allowed access for our team to remove the dam. But first we had to remove the pesky rodents!

John Caretti, experienced trapper and president of the Michigan Trappers Association, stepped into his boots and surveyed the watercourse and dam. He formed a plan; and when the season opened, he went to work. A permit for damage and nuisance animal control was obtained from DNR Wildlife Division that was timely and helpful.

A total of seven two-year-old troublemakers were removed. An engineering grade stake was set to track the lake level and subsidence. March 29, 2012 the beaver dam itself was dismantled gingerly, twig

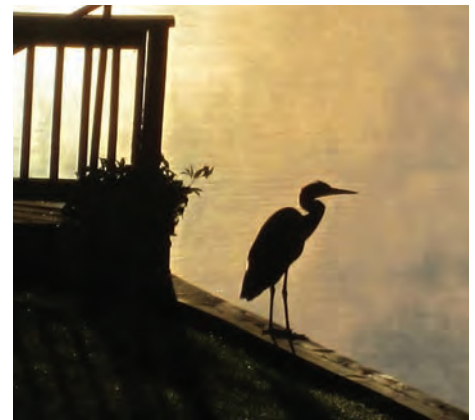


Participants in Ford tractor training a few hundred yards from Deer Lake's north shore. The house in the background belonged to Henry Ford. Photo courtesy of the Clarkston Community Historical Society.

by branch, to prevent a massive sudden surge. The lake level dropped 18" in 48 hours, drawing an approximate 1,400,000 gallons out of the Bridge Lake watershed. A grade stake on Deer Lake showed a level increase between three and four inches. Bridge Lake and other connecting smaller lakes wore a bathtub ring until late May when the shoreline vegetation returned.

## Bird Watcher's Paradise

Deer Lake is a birder's delight. An astounding array of winged life can be seen, and often the color contrasts are startling. We have seen mallards, blue winged teal, wood duck, ruddy duck, canvas back, coots, grebes, buffle heads and golden eye. Small flocks of mergansers, both common and hooded, king fishers, and swarms of swallows are plentiful.



We also have a good share of herons, both blue and green. The small green heron or shag pokes, as they are sometimes called, are quite timid and make an eerie ethereal squawk. Sand hill cranes in smaller numbers arrive throughout the year, along with egrets, great white herons, Canada geese and large and small sea gulls. One fall, we saw a small flock of tundra swans, slightly out of their migration route. They rested here a few hours and then continued their skyward journey.

## Lake Changes

Because of its depth and hard water springs, the lake sometimes turns a beautiful aqua blue like one sees in the Florida Keys. When the hard wind is out of the north, foam blows in across lawns and

(Continued on page 10)

# Deer Lake

(Continued from page 9)



beaches. Spring and fall seasons can be easily tracked by the winds and water temperature. Waterfowl species stop during migration for rest and food, delighting birders. Fishermen are challenged because of the abundance of minnows and smaller fish. Natural fish food keeps the larger fish chubby; artificial baits are scoffed by the pike. Sometimes, when the lake is very still, I can hear them laughing.



*A Deer Lake Pike*

In deep winter, the ice sheet can easily get a foot thick. When the temps dip into single digits and below, the lake creaks and moans, snapping and cracking; and you can hear the fissures dancing across the lake ice, the sound sometimes mimicking whale songs. This phenomenon is best enjoyed after dark during a full moon while wearing many layers of clothing. Lying on the ice, you can feel the low thundering, shudder of the lake. A sense of wonder collides with the prehistoric to hear a tiny bit of Creation at work.

## Guarding the Treasure

In earlier days, my good fortune with Michigan Lake and Stream Associations included working with its many founders: Don Winne, Pearl Bonnel, Ray Bier, Wally and Bene Fusilier and many others. They helped deepen my appreciation and understanding that a

body of water is not just a static display, but a constant changing palette and canvas of our Creator working the magic of life before our very eyes. Lake living imbues sensitivity to outdoor wonders every waking moment.

That appreciation develops into an educated guardianship. We riparians become ever mindful of what happens on and around the lake, how upstream waters affect downstream waters, that H<sub>2</sub>O is a simple molecule without which all life would be impossible.

Just because Deer Lake's history is traced back to the glaciers does not mean that her timeless beauty can be neglected. Careful diligence is becoming more and more important for protecting the quality of our 137 acre lake. Our lake association, like yours, is only one tool to be used for the preservation of that resource.

Deer Lake volunteers will begin their 10th year participating in the MiCorp water quality monitoring program. This excellent and professionally managed program has provided valuable data to assist in our lake management plan.

Through education, our lake association is taking steps to guard against invasive aquatic plants. We partner with other associations and boards, governmental units, the drain commission, Michigan State University, Michigan Lake and Stream Associations, the Clinton River Watershed Council, the DEQ and others in order to maintain the excellence we enjoy on Deer Lake and to be proactive for others to enjoy Deer Lake far into the future.


Water has become a voyage without end, a flow of which we become a small part. Our duty is to stewardship, for the future will belong to others. Let us work now so they will look back and say we did our job well. ●●●





progressive|ae  
The Leader in Lake Management

Experience is the Difference



1811 4 Mile Road, NE Grand Rapids, MI 49525-2442  
tel.: 800-556-5560 fax: 616-361-1493  
www.progressiveae.com www.michiganlakeinfo.com

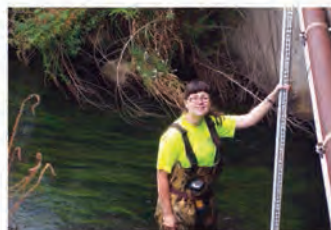
## LAGGIS FISH FARM INC.

08988 35th Street  
Gobles, Michigan 49055  
— *in business since 1979* —  
Work Phone • Daytime  
**269•628•2056**

Residence Phone • Evenings  
**269•624•6215**

- Giant Hybrid Bluegills - Up to 8 inches
  - Walleye - Up to 8 inches
  - Largemouth Bass - Up to 8 inches
- Rainbow Trout - Fingerlings to Adult
  - Smallmouth Bass - Fingerlings
- Channel Catfish - Fingerlings to Adult
  - Yellow Perch - Up to 8 inches
  - Northern Pike - Fingerlings
  - Fathead Minnows

## The Go-To-Firm for Innovative and Practical Solutions



Watershed Studies ■

Sanitary Sewer Systems ■

Grant and Loan Applications ■

Rate and Assessment Studies ■

Bathymetric Surveys ■

Dredging, Bridge and Dams ■

Lake Level Management ■

Ponds and Water Features ■

Low Impact Developments ■

Wetland Assessments ■

Hydro-geologic Studies ■

**W** WIGHTMAN & ASSOCIATES, INC.  
ENGINEERING ♦ SURVEYING ♦ ARCHITECTURE

2303 Pipestone Road  
Benton Harbor, MI 49022

Phone: 269.927.0100 • Toll Free: 877.927.0109  
Fax: 269.927.1300 • www.wightman-assoc.com



# 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: [info@mi-riparian.org](mailto:info@mi-riparian.org)  
Mail: The Michigan Riparian  
300 N. State St., Suite A,  
Stanton, MI 48888

**Question:** Do Michigan's county road commissions continue to have jurisdiction in Public Act 56 public road end use cases?

**Answer:** No. The Michigan legislature recently passed and Governor Snyder signed legislation that excludes Michigan's county road commissions from jurisdiction in Public Act 56 public road end use cases. Revising the language of Public Act 56 which was passed by the state legislature in 2012 in an attempt to thwart the construction of privately owned docks and boat hoists at lake and stream public road end sites throughout Michigan, Senate Bill 680 specifically defines local unit of government with jurisdiction over public road ends as townships, cities, or villages in which the public road end is located.

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.

## A Sandy Beach in One Day!

ELIMINATE THE PROBLEMS OF MUCK AND WEEDS

**SAND & WATER MIX**

**WATER FROM LAKE**

**GUARANTEED SANDY, STABLE LAKE BOTTOM REGARDLESS OF EXISTING CONDITIONS**

**NO SITE DISTURBANCE**

**Cross-section labels:** WATER, 6" SAND, TYPAR STABILIZING FABRIC, GAS & WATER PERMEABLE, TRAPPED WEEDS & MUCK, TOE, DROP-OFF, ANCHOR.



- 30 years experience
- Invented and Patented "Sand-Pro" Beach Sanding Process
- DEQ Approved
- DEQ Permit Assistance

**(517) 546-3035**

**[www.ttcbaches.com](http://www.ttcbaches.com)**

e-mail: [ttcbaches@yahoo.com](mailto:ttcbaches@yahoo.com)

**A Sandy Beach in One Day!**

Visit us on: [facebook](https://www.facebook.com/ttcbaches)

**ASK ABOUT:**

- Dock Installation/Removal
- Boulders/Seawalls



## LIABILITY POTENTIAL FOR ASSOCIATIONS

By: Clifford H. Bloom, Esq.  
Bloom Sluggett Morgan, PC  
Grand Rapids, Michigan  
[www.bsmlawpc.com](http://www.bsmlawpc.com)



The Michigan Court of Appeals recently decided an interesting case that has implications for property owners, lake and similar associations that own or control lake access sites on Michigan Inland lakes. In *Gibbons v. Horseshoe Lake Corporation* (unpublished Michigan Court of Appeals decision dated March 11, 2014; Case No. 311754; 2014 WL 953568), the Horseshoe Lake Corporation (“Association”) owned and controlled a lakefront lot on Horseshoe Lake. The Association had a committee that periodically checked the trees on the lake access lot for insects, dying trees and similar matters. During a storm, a tree located on the access lot fell onto the house of the adjoining lot (which is owned by the Plaintiffs in the lawsuit). Ironically, Plaintiffs had complained to the Association on many prior occasions about the condition of the lakefront lot and the trees on it. Plaintiffs sued the Association for the tree damage to their house and for physical injuries suffered by one of the Plaintiffs.

The trial court dismissed the damages lawsuit against the Association. However, on appeal, the Michigan Court of Appeals indicated that the matter should proceed to trial and that it was possible that the Association could be held liable for the damage to the house and injuries suffered by one of the Plaintiffs caused by the tree. Does this mean that all associations have significant potential liabilities regarding platted, dedicated, deeded or other lake access sites? Not necessarily.

*Gibbons v. Horseshoe Lake Corporation* involved a somewhat unusual fact situation. In that case, the Association owned and controlled a lakefront lot. The Association had a committee that actively monitored and maintained the lakefront lot at issue. Finally, Plaintiffs had

complained repeatedly to the Association about the condition of the Association’s lot, including the trees thereon.

In order for an association to be found liable for damages in court pursuant to death, injury or property damage, the association involved must normally own or control the property or site where the accident occurred. “Ownership, possession and control” (or at least possession and control) is normally a prerequisite before an association or anyone can incur liability for something that happens on a piece of real estate. See *Merritt v Nickelson*, 407 Mich 544 (1980) and *Orel v Uni-Rak Sales Company, Inc.*, 454 Mich 564 (1997).

There are many lake access or use easements, platted/dedicated roads, parks, walkways or alleys for which no association has ownership, possession or control. In those cases, even if a lake or neighborhood association exists but does not own or actively maintain, possess or control the easement, park, road or alley at issue, the potential for liability for that association is minimal.

Of course, if an association actually owns a lot, parcel or other property and someone is killed or injured thereon, the potential for liability could be significant. Such properties typically include an association boat launch, access lot, clubhouse or storage building. Even if an association did not initially own, control or have possession of a site, it could incur liability if it voluntarily assumes control or possession of the property.

Rather than worry about endless scenarios by which an association (or even its officers or members) can be potentially liable, it is better to make sure that the association has good and adequate

liability insurance. Even if a liability lawsuit is brought wrongfully against an association, the attorney fees and costs that must be incurred in getting such a case dismissed could be considerable. Typically, a liability insurance policy covers not only any potential damages award, but also attorney fees and court costs, up to the specified limits of the policy.

In a situation where an association does not own, possess or control an easement, park, road or alley, its officials should think twice before voluntarily commencing to maintain, possess or control a property. Should the association undertake such activities, the so-called Pottery Barn rule can apply - “you break it, you pay for it.” See *Zychowski v A. J. Marshall Company, Inc.*, 233 Mich App 229, 231 (1998).

[Just as this issue went to print, the Michigan Supreme Court released an interesting decision in *Sholberg v Truman*, \_\_\_\_ Mich \_\_\_\_ (2014) regarding liability for the possession, ownership or control of real property.] ■■■

“Ownership,  
possession and  
control”

# Au Gres-Sims Elementary Youth lead watershed monitoring project

**From its upper stretches to where the Au Gres River flows into Lake Huron, Au Gres-Sims Schools elementary students are exploring water quality across their watershed, and inspiring new partnerships and community awareness.**

**Posted on May 22, 2014 website by  
Brandon Schroeder, Michigan State University Extension and  
Jacob DeWitt, Huron Pines AmeriCorps (serving Northeast Michigan Great Lakes  
Stewardship Initiative)**

This school year, elementary students from Au Gres-Sims School District have embarked on an ambitious water quality monitoring project and study focused on the Au Gres River within the Saginaw Bay watershed. In just their first year, students can boast that their school was the first across the Great Lakes region to contribute data in piloting a new water-focused citizen science website, Great Lakes FieldScope, created by Michigan Sea Grant, National Geographic Society, and U.S. Geological Survey. Collaborating with Michigan State University Extension 4-H Youth Programs and the NOAA Thunder Bay National Marine Sanctuary, they are also building underwater remotely operated vehicles (ROVs) which may help them expand their future water studies.

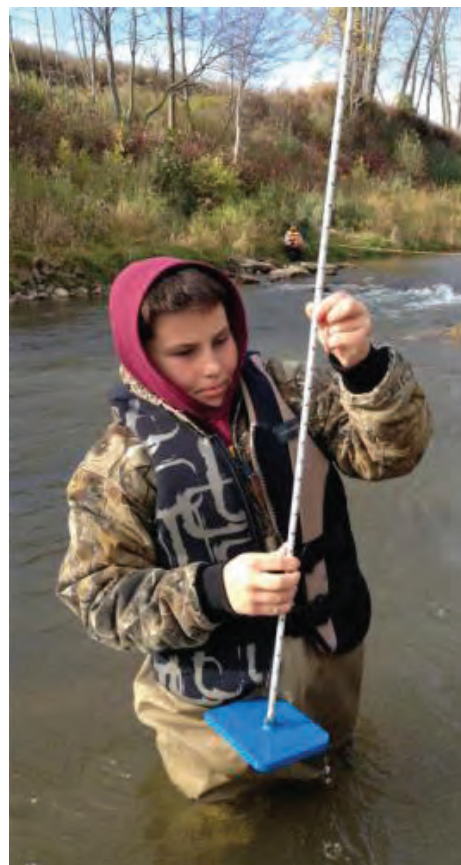
The Au Gres-Sims Watershed Project, a place-based education effort in water monitoring led by teacher, Michael Fields, involves nearly 50 students and is coordinated with resource experts and community partners. These elementary students are studying the Au Gres River at various sites from its upper stretches to where it eventually drains into Saginaw Bay. They are some of the youngest citizens within the Saginaw Bay Watershed, but they are stepping up (and getting their feet wet) in hopes of making some important contributions to their environment and community.

Taking a watershed approach, they are looking inland and to the rivers that feed Saginaw Bay. At the heart of Lake Huron, Saginaw Bay is fed by an impressive network of rivers and streams draining the land—the Saginaw Bay Watershed—from approximately fifteen percent of Michigan's total land area into Lake Huron. Saginaw Bay waters and vast coastal wetland habitats are the largest continuing system of freshwater coastal wetlands in the country and support a wide diversity of fish and wildlife—an important and treasured resource. This stewardship opportunity is not lost on these students.

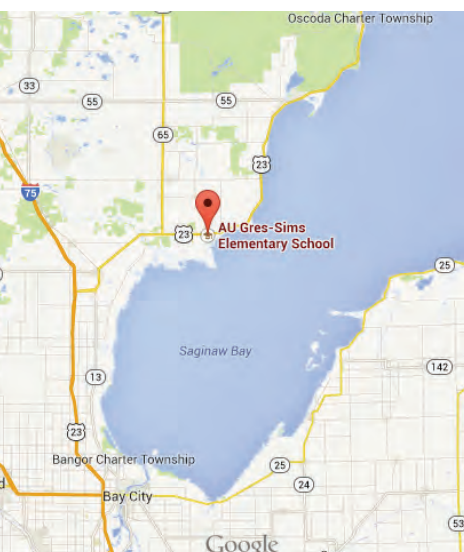
In the river, students become the water resource experts themselves. Separating into teams, they measured physical parameters of the river such as width, depth, type of river bottom, and flow rates. Applying chemistry, they tested



*A student group leader records data on the physical attributes of the river as classmates perform different tests in the background. Photo credit: NEMIGLSI*



*(Continued on page 15)*





(Continued from page 14)

stretches of the river to determine levels of ammonia, nitrate, and dissolved oxygen in the water. Connecting biology to their study, they surveyed and counted aquatic macro-invertebrates (some of the smallest organisms inhabiting the river) documenting biodiversity of life in the river. Applying math, they used the counts of these organisms as biological indicators in calculating a water quality rating that could be compared with their chemical tests. As a writing project back in the classroom, students summarized their data and findings. Through this combined assessment, and applying in-class lessons, students gained a better picture of the health of the river as it flows downstream.

Entering their data as part of the Great Lakes FieldScope website, students learn about geography and GIS technology by contributing their school's testing sites and project data to online and interactive maps allowing students to further explore

their findings in the context of different geographic scales—their watershed, Lake Huron, or the world. Through this innovative website, students are able to map and share their findings with other schools, their local community, and environmental experts. Together, they are contributing to a web of interconnected schools and citizen scientists working to promote water awareness.

Through the Northeast Michigan Great Lakes Stewardship Initiative and the NOAA B-WET program, the Au Gres-Sims Elementary team effort has also connected with a diversity of community and conservation partners. These include U.S. Fish and Wildlife Service, Huron Pines, NOAA Thunder Bay National Marine Sanctuary, Saginaw Bay Watershed Initiative Network, Saginaw Chippewa Indian Tribe of Michigan, local township officials, among many others. These partners contribute environmental

expertise and volunteers, professional development, and resources to the project. In trade, they benefit from the accomplishments of this student-led project.

These young student leaders are not only exploring science and technology, but also collecting valuable water quality data. Students are conducting water sampling this spring, as will be the incoming class of new students next school year. They have continuing goals of expanding to new sampling sites, exploring new community partnerships, using innovative technology to expand their studies and communicate their findings. Au Gres-Sims Elementary teachers, and students expect to contribute as a long-term partner in stewardship of Saginaw Bay and Lake Huron waterways.



### Avalon Pontoon Boat Sales



### Outdoor Products



**Marine Automated Dock Systems**  
2900 Doc Dr.  
Harrison, Michigan 48625

Just off US 127 — Exit 176





# HANDS-FREE OPERATION!

**ELIMINATES ALL TYPES OF WEEDS**

**Chemical Free • Easy Installation**

**Mount from Dock or Shore**

The WeedRoller PRO moves in a slow, broad arc, pivoting more than 300°.

Linked rollers rotate along lake bottom, detaching existing weeds and agitating the lake bottom.

Available in lengths of 21', 28', 35' & 42'



CRARY

**WeedRoller<sup>®</sup> PRO**

For a free DVD, or to locate a dealer  
call 800.247.7335

[www.EliminateLakeWeeds.com](http://www.EliminateLakeWeeds.com)



Michigan Clean  
Water Corps

**MiCorps**  
Monitoring Michigan's Water Quality

## Michigan's Inland Lakes, Ours to Protect



- 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.

Registration will begin October 1, 2014.

Contact Program Administrator, Jean Roth at 989-257-3715  
or e-mail [jroth@mlswa.org](mailto:jroth@mlswa.org)

To enroll on-line visit [www.micorps.net](http://www.micorps.net)



*It's "snot funny" as rock snot is real  
and could be a potential aquatic invader  
in Michigan's streams and lakes.  
Avoid spreading this aquatic hitchhiker  
by cleaning, draining and drying your  
watercraft and gear.*



# Didymo (Didymosphenia geminata) aka 'Rock Snot' is Spreading

Posted on May 22, 2014 website by  
Beth Clawson, Michigan State University Extension

Characterized by the development of thick mat-like growths at the bottom of streams, Didymo (*Didymosphenia geminata*), or rock snot, can last for months. Didymo is an algae, declared as non-native invasive in New York and Pennsylvania, that sends tendrils into the water column in search of nutrients. Scientists at Dartmouth College in New Hampshire say it is native and occurs globally. Conditions for its growth are rare but increasing in the United States. Didymo is currently being monitored in Lake Superior.

Didymo threatens aquatic habitat by affecting the insect populations in trout and salmon streams and oligotrophic lakes. It is tan, brown or white, (not green); it does not feel slimy but has a texture somewhat like wet wool and is typically firmly attached and does not fall apart when rubbed with your fingers. The nickname "rock snot" is based purely on how it looks. Didymo, unlike other algae, prefers waters where phosphorous is low. Other "green" algae species thrive in phosphorous nutrient loaded waters.

It should be noted that the Didymo diatom or single-cell microscopic algae is not new. What is new is where the organism colonies are appearing. The New York Department of Environmental Conservation suggests that Didymo is spread by anglers, kayakers, canoers, tubers, boaters and other people engaging in water-based recreation who do not thoroughly clean their boats and gear. The microscopic parts of this species of algae and other water organisms can cling to boat parts, boots, waders, lures, hooks and line. Water recreationists are encouraged to clean, drain and dry their watercraft and gear between uses to help reduce the spread of invasive species in Michigan's inland lakes and streams.

If you or your lake association is interested in watercraft checkpoints education or in a volunteer training to educate boaters at local public launches contact Michigan State University Extension educator


Beth Clawson at [clawsonb@anr.msu.edu](mailto:clawsonb@anr.msu.edu). For more information about Clean Boats Clean Waters aquatic invasive species program or other water quality concerns contact MSU Extension. Water quality educators are working across Michigan to provide natural resources water quality educational programming and assistance. You can contact an educator through MSU Extension's "Find an Expert" search tool using the topic "water quality." 



Photo courtesy of New Hampshire Department of Environmental Services.

# MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.

## ML&SA NEWSLETTER



Michigan Lake & Stream Associations, Inc.  
300 N. State St., Suite A  
Stanton, MI 48888  
Phone 989-831-5100

E-mail [info@mlswa.org](mailto:info@mlswa.org), [sbrown@mlswa.org](mailto:sbrown@mlswa.org)  
Web sites [www.MyMLSA.org](http://www.MyMLSA.org), [www.micorps.net](http://www.micorps.net)  
William Scott Brown, Executive Director

### OFFICERS

**PRESIDENT - Sondra (Sue) Vomish**  
52513 Twin Lakeshore Drive, Dowagiac, MI 49047  
Phone 269-782-3319 E-mail [vomish@comcast.net](mailto:vomish@comcast.net)

**VICE PRESIDENT - Richard Morey**  
50230 E. Lakeshore Drive, Dowagiac, MI 49047  
Phone 269-424-5863 E-mail [rdm@sisterlakescable.com](mailto:rdm@sisterlakescable.com)

**SECRETARY - Nancy Beckwith**  
264 Paris SE, Grand Rapids, MI 49503  
Phone 616-459-6536 E-mail [lbeckwi@sbcglobal.net](mailto:lbeckwi@sbcglobal.net)

**TREASURER - Tom Murphy**  
24 Chateaux Du Lac, Fenton, MI 48430  
Phone 810-750-0088 Email [chateaux24@aol.com](mailto:chateaux24@aol.com)

### REGIONAL REPRESENTATIVES

**REGION 1 - Mark L. Teicher**  
6245 Wellesley Dr, West Bloomfield, MI 48322  
Phone 248-851-4327 E-mail [marklteicher@aol.com](mailto:marklteicher@aol.com)

**REGION 2 - William Scott Brown**  
11250 Riethmiller Rd, Grass Lake, MI 49240  
Phone 517-914-1684 E-mail [sbrown@mlswa.org](mailto:sbrown@mlswa.org)

**REGION 3 - Sondra (Sue) Vomish**  
52513 Twin Lakeshore Drive, Dowagiac, MI 49047  
Phone 269-782-3319 E-mail [vomish@comcast.net](mailto:vomish@comcast.net)

**REGION 4 - Jennifer Medema**  
7549 Ravin Dr. NE, Belding, MI 48809  
Phone 616-691-7057 E-mail [mlswa.region4@gmail.com](mailto:mlswa.region4@gmail.com)

**REGION 5 - Virginia Himich**  
1125 Sunrise Park Dr., Howell, MI 48843  
Phone 517-548-2194 E-mail [himichv@michigan.gov](mailto:himichv@michigan.gov)

**REGION 6 - Ron Cousineau**  
1875 Long Pointe Dr., Bloomfield Hills, MI 48032  
Phone 248-335-8353 E-mail [rjcousineau@aol.com](mailto:rjcousineau@aol.com)

**REGION 7 - John Hood**  
5913 Shirley Ann Dr., Harrison MI 48625  
Phone 248-760-0853 E-mail [jmh371@juno.com](mailto:jmh371@juno.com)

**REGION 8 - Jim Maike, Jr.**  
977 Eighth St. White Cloud, MI 49349  
Phone 231-335-8272 E-mail [Kb8life@ncats.net](mailto:Kb8life@ncats.net)

**REGION 9 - Sarah and Mike Litch**  
8282 S. Dunns Farm Rd., Maple City, MI 49664  
Phone 231-334-3612 E-mail [saralitch@gmail.com](mailto:saralitch@gmail.com)

**REGION 10 and REGION 11 - Cecile Kortier**  
18200 Valerie Dr., Hillman, MI 49746  
Phone & Fax 989-742-3104

**REGIONS 12, 13, and 14 - VACANT**

**REGION 15 - Army Domanus**  
N 4176 Kari-Brooke Ln, Watersmeet, MI 49969  
Phone 906-358-9912 E-mail [armydrjr@gmail.com](mailto:armydrjr@gmail.com)

**NEWSLETTER EDITOR - Sharon Wagner**  
300 N. State St., Ste A, Stanton, MI 48888  
Phone 989-831-5100 E-mail [swagner@mlswa.org](mailto:swagner@mlswa.org)

## A New Threat to Great Lakes Restoration and Our Health

Submitted by Freshwater Future  
[www.freshwaterfuture.org](http://www.freshwaterfuture.org)

It's been refreshing to hear positive news about restoring the Great Lakes these last several years. A much needed source of federal funds ~ the Great Lakes Restoration Initiative, which began in 2010 ~ provided a much needed boost to long-term regional cleanup and protection efforts in the U.S. The initiative helped to speed up "toxic hotspot" cleanups, restore critical habitat, tackle the problem of invasive species, and improve water quality. These large strides forward, however, still leave other concerns such as a new and serious problem threatening the health of the Great Lakes, and in particular, its smallest human inhabitants ~ young children.

Scientists have identified a common product in everyday use ~ coal tar sealcoats used to repair and protect pavements such as parking lots and driveways ~ and shown relationships to impaired water quality, a threat to aquatic life, and an alarming health risk to the public, especially young children.

Scientific studies have shown that the coal tar sealcoats are responsible for high levels of polycyclic aromatic hydrocarbons (PAHs) found in the sediments of lakes and streams near coal tar sealcoat-treated pavements, and in particles and dust from the pavements. PAHs are a group of chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or grilled meats. PAHs remain in the environment for a long time and a number are suspected or known carcinogens.

High levels of PAHs run off of coal tar sealcoat treated pavements for months following the application of the product. Routine wear and tear also causes small particles of the pavement (contaminated with PAHs) to run off and end up in nearby waterways harming aquatic life and increasing sediment cleanup costs. People, especially young children, who

live by the treated pavements, can breathe in or accidentally ingest the dust and small particles contaminated with PAHs.

For someone who spends their entire lifetime living adjacent to coal tar sealcoated pavement, the average excess lifetime cancer risk is estimated to be 38 times higher than the urban background exposure. More than one-half of the risk occurs during the first 18 years of life, and most of it (84%) is from ingestion of soil. Williams, E.S., Mahler, B.J., and Van Metre, P.C. 2013. Cancer risk from incidental ingestion exposures to PAHs associated with coal-tar-sealed pavement. *Environ. Sci. Technol.* 2012, 47 (2):1101-1109.

The news is not all bad, however. There is a safer alternative ~ asphalt sealcoat ~ which contains about a thousand times fewer of PAHs than coal tar sealcoats.

Freshwater Future is launching a new project aimed at reducing the use of coal tar sealcoats in the Great Lakes. As part of the project, we will be reaching out to communities, universities, suppliers and contractors to obtain their commitment to reduce or eliminate the use of coal tar sealcoats. "It's astounding that this one product causes many risks and has slipped through the crack of regulation," notes our Cheryl Kallio. "There are quick and easy things groups can do to join in these efforts." The benefits are most definitely worth it ~ a cleaner and safer Great Lakes and healthier people, especially young children. Plus, we will help continue a positive trajectory of restoring the Great Lakes.

To learn more about coal tar sealcoats, the problems they cause and how you can team up with Freshwater Future to help phase out and end the use of the product in our region, contact Cheryl Kallio at [Cheryl@freshwaterfuture.org](mailto:Cheryl@freshwaterfuture.org).



# MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.

## ML&SA NEWSLETTER



## Invasive European Frog-bit Rapidly Spreading Throughout Michigan

by Scott Brown, ML&SA Executive Director

Michigan lakefront property owners would be well advised to keep a watchful eye out this summer for yet another potentially harmful exotic aquatic invasive plant – European frog-bit (scientific name: *Hydrocharis morsus-ranae*).

Detected last summer within Saginaw Bay, Alpena and Munuscong Bay in Chippewa County, the highly invasive free floating plant is native to Europe, Asia and Africa, and was intentionally imported to Canada from Europe in 1932 for commercial use as an ornamental plant. European frog-bit has since spread to several rivers, Lake Ontario, Lake Erie and many other inland waters within the Great Lakes region.

Capable of rapid growth rates, European frog-bit often forms dense floating mats that force out other beneficial native floating plants (like water lilies) and effectively prevents sunlight from reaching native submerged aquatic plants. Dense monotypic mats of European frog-bit may also impede navigation and interfere with recreational uses such fishing and swimming.

The invasive free floating plant may be easily identified by the presence of a single white flower of up to three quarters of an inch in width with three rounded petals and a yellow center. The leaves of European frog-bit are one to two inches wide and are round to heart-shaped. The leaf bottom is purple-red with a spongy coating along the middle vein of the leaf that allows it to float on the water.

If you should see this rapidly spreading invasive plant, note its location and the extent of the infestation, and then call the Michigan Department of Natural Resources Early Detection and Rapid Response coordinator at 517-641-4903 – ext. 260.



FRIEND AND COLLEAGUE

*Sue Vomish*

PASSES AWAY



It is with deep sadness we share heartbreaking news that Sue Vomish, ML&SA's president, passed away on June 29, 2014. Sue Vomish played a major role in ML&SA serving as both Board President and Region Three Representative for many years. The reason many of the lake property owners in her area became ML&SA lake association members is due to her tireless efforts. Because of her passion, they continue to stay involved and committed to good stewardship. On behalf of the board and staff of both ML&SA and The Michigan Riparian, we would like to express our sincere condolences to Sue's family. She was a tremendous leader, volunteer and friend. Our hearts are heavy. She will be greatly missed. A special tribute to Sue will be featured in our Fall 2014 issue of The Michigan Riparian. If you have a memory, picture or note to share for Sue's tribute please email to: [swagner@mlswa.org](mailto:swagner@mlswa.org) no later than Sept. 1, 2014.

## Live On A Lake? Concerned About the Future of Your Water Resources?

Membership dues of \$35 entitles you to a year's membership and subscription to The Michigan Riparian magazine as well as other benefits. **Mail check payable to ML&SA to:**  
Michigan Lake and Stream Assoc., 300 N. State St., Ste A, Stanton, MI 48888  
**Or go online to download a membership form**  
<http://www.MyMLSA.org> (989)831-5100

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone Number: \_\_\_\_\_ E-Mail: \_\_\_\_\_



FOR OFFICE USE ONLY:

date rec'd: \_\_\_\_\_ amt: \_\_\_\_\_  
ck no: \_\_\_\_\_ member: \_\_\_\_\_

### Michigan Lake and Stream Associations, Inc.

A 501(c)3 non-profit corporation registered within the State of Michigan will hold its

**Annual Corporate Meeting on  
Monday, October 6th, 2014 @ 10:00 AM**

Public invited to attend  
at the Turk Lake Inn  
161 S. Turk Lake Drive  
Greenville, MI 48838

## Lake Safety on Deer Lake, Oakland County

Article submitted by Deer Lake Property Owners Association  
Clarkston, MI

Safety on Deer Lake has always been one of the primary concerns over the last 30 years. The first significant study of lake safety was conducted by a consortium of lake residents, township officials and several lake associations in April, 1987. This panel decided that boat usage was becoming a burden on lake safety. Although there were many recommended ideas to improve lake safety, no significant action was taken.

In 2013, a lake density study of boat usage capacity was conducted for Deer Lake to determine the amount of boats using the lake during peak times. The north shore of the lake is a No Wake zone and the south shore allows power boating between the hours of 11:00 AM to 7:30 PM. The total lake acreage is 137 with 32 acres in the north shore. The power boating area of

the south shore was established by putting a perimeter around the lake with a 100-foot setback from any dock, swim area or shallow area. The net acreage that can be used for power boating is 72 acres.

During the peak times, it has been noted that 12 power boats were in operation in the 72-acre area. This calculates to 6 acres per power boat. The recommended safety requirement by many agencies, including the MDEQ is 20 acres per boat. The study indicated that the lake is unsafe for power boating during peak times at the current use.

In 2009, the Oakland County Sheriff's Department stopped patrolling Deer Lake due to cuts in their budget. Deer Lake Front Property Owners took it upon themselves



to pay for the patrol of their lake by the Oakland County Sheriff.

DLPOA is starting its 4th year funding a Sheriff Marine Patrol. We feel this endeavor is extremely important and provides a safe but fun atmosphere on the lake. The patrol is not there to write tickets. They are there to enforce the rules of safe boating.



## Experience the LakePro Difference

Complete Water Management

[www.lakeproinc.com](http://www.lakeproinc.com) • 810.635.4400



## The Way It Used To Be

by Dick Magee  
Retired Klinger Lake Association Board Member

*Editor's note: Dick Magee is a free lance contributor writing about Michigan's lakes and streams. He has graciously given us permission to reprint this article that he wrote for the 2013 Klinger Lake spring/summer newsletter.*

In my youth, I spent my summers in a tidy cottage on Lemon Street in Mound Springs. It was my grandmother's house. She first came to Klinger in 1902, when she could have bought anywhere on the lakefront. But she didn't. She thought it was too windy by the shore! She was a city girl and wanted neighbors close by. Those on Lemon Street were, in the main, relatives from Chicago, who were used to living in crowded two-flats.

Living in a country cottage was a big change from living in Chicago. There were no streetlights, no street cars, no cars and no hoards of people. There was only quiet, with the soft rustle of trees, and the lake waiting in the wind at the end of the lane. The peace and quiet were so beguiling that only when the thermometer hit 90 did my kin don their fancy bathing costumes and parade to the lake.

Our cottage had one bedroom downstairs and two upstairs. Getting upstairs wasn't easy. We had to go outside and then up a flight of stairs. Since we were in the wilderness, there was no bathroom. There was a privy. Does anyone ever forget the dim, dankness of the place, the cracks between the planks of the wall, the creaky door, the unimaginable in the dark below? Girls didn't take to privies. Boys did.

The iceman delivered ice to our door. With an ice pick, he would chip off pieces of ice for our summer day treat. After awhile, neighbors discovered electricity and bought refrigerators. Not us. That was too much like city life. So, when the iceman quit coming, we hauled a block of ice in the trunk of the car from the Sturgis ice plant, and manhandled it into our ice box.

However, we finally gave in to progress and plugged in with the rest of the world. We



traded kerosene lamps for light bulbs. We bought an electric pump and a hot water heater. Before then we had heated water in a kettle to wash whatever needed washing. Of course, none of us took a bath in the cottage because there was no bathroom. That's what the lake was for. The Ivory soap was just a float away.

Then, what with electricity and all, my mother got fancy. She remodeled the cottage. Now we had inside stairs to the second floor. This changed the personality of the place. Upstairs was no longer "special". This alarming trend continued when she put in a bathroom on the second floor - with a bathtub! We had gone city! I never took a bath in that tub. For me, it was just for show. When it was too cold to bathe in the lake, it was time to head for Chicago.

Oh, like those of my generation, I could go on, lose myself in a sweet reverie of times long past - smile with the memories that flood from old scrapbooks and photos. Our "HiBelle" cottage was named after my grandmother. So, thanks, dear Belle. You offered a Klinger experience that I have treasured for a lifetime.

### THE POND SHOP® EVERYTHING YOU NEED FOR THE PERFECT POND



#### Professional Products at Discount Prices.

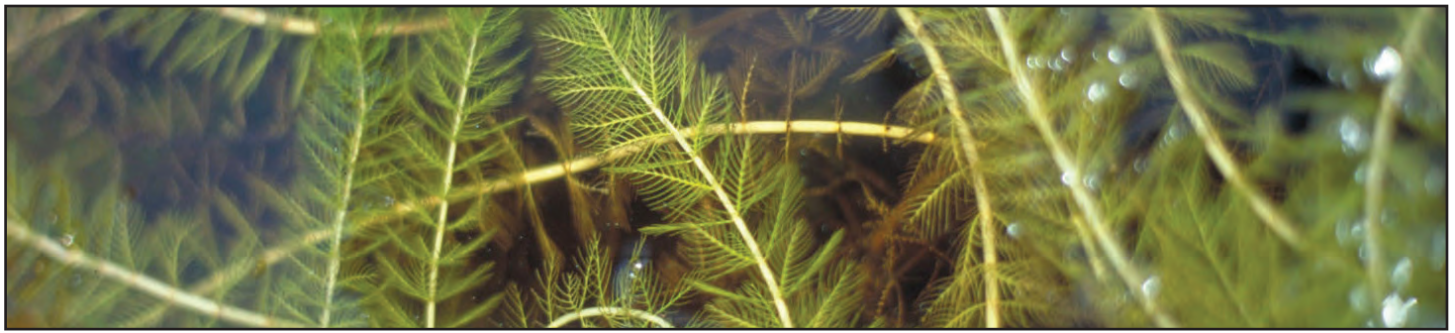
- AERATORS
- ALGAE CONTROL
- FLOATING FOUNTAINS
- MUCK CONTROL & WATER CLARIFIERS
- POND MAINTENANCE TOOLS
- WATER CIRCULATORS
- WATER SAFETY EQUIPMENT



Vertex Water Features  
Pond and Lake Aeration

POND  
BIOLOGICS®  
WATER TREATMENT PRODUCTS

(855) 206-Pond (7663)  
[www.ThePondShop.com](http://www.ThePondShop.com)



# Incorporating genetic identifications of watermilfoils into aquatic vegetation mapping to inform management decisions

**Syndell Parks, Ryan Thum and Jeff Pashnick-**  
**Grand Valley State University Annis Water Resources Institute**  
**Pam Tying- Progressive AE**  
**Lisa Huberty- Michigan Department of Environmental Quality**

Aquatic vegetation mapping has long been an important component of developing and implementing aquatic plant management plans. Vegetation maps provide important information on the distribution and abundance of plants over time, which helps to identify important changes that help stakeholders identify when and where management should occur, as well as to determine the efficacy of management actions. Aquatic vegetation mapping therefore plays an important role in adaptive management of lakes, where the overall goal is to reduce uncertainty in management responses over time by careful monitoring to evaluate management actions.

Aquatic vegetation surveys have historically been conducted using visual identifications of species. However, some aquatic plant taxa can be very difficult to distinguish from others using visual identification methods alone. For these taxa, new technologies such as genetic methods of identification can provide an objective alternative to visual identifications.

For example, Eurasian watermilfoil (*Myriophyllum spicatum*) is an invasive aquatic plant that is extensively managed with herbicides to mitigate its large economic and ecological impacts in many lakes. Eurasian watermilfoil hybridizes with the ecologically benign and native northern watermilfoil (*Myriophyllum sibiricum*). These hybrids can differ significantly from Eurasian watermilfoil in patterns of nuisance growth and response to management. However, due to their morphological variability, many hybrids are difficult to distinguish from Eurasian and northern watermilfoil, even

for those with aquatic plant identification training. In contrast, molecular genetic methods of identification have proven more reliable. Here, we stress the importance of careful identification of distinct watermilfoils using molecular genetic methods, and suggest incorporating genetic monitoring of watermilfoils into existing aquatic vegetation mapping to assist in the prescription and evaluation of management actions.

## More than Meets the Eye

Watermilfoils are notoriously difficult to identify to species. Eurasian watermilfoil is most commonly confused with its native sister species, northern watermilfoil, and hybrids between these two. Eurasian watermilfoil and northern watermilfoil can be distinguished visually by counting the number of pairs of leaflets (about 9-11 for northern watermilfoil and about 12-20 for Eurasian watermilfoil). Nevertheless, the two species can be mistaken for one another. More importantly, since hybrids are a cross between Eurasian watermilfoil and northern watermilfoil, distinguishing hybrids is even more challenging. For example, leaflet counts of hybrids can resemble either Eurasian watermilfoil or northern watermilfoil. Moreover, not all hybrids look the same (Fig. 1). Finally, it is important to recognize that there are several other native species of watermilfoils, and it is important to accurately distinguish these native species from Eurasian watermilfoil or hybrids that are targeted for management.



Figure 1. Leaves from different genotypes of northern watermilfoil (top row), hybrid watermilfoil (middle row), and Eurasian watermilfoil (bottom row). Leaf characteristics can differ among different genotypes within taxa, and hybrids can exhibit characteristics of both Eurasian and northern watermilfoils. Genetic analyses are therefore more reliable for distinguishing Eurasian, northern, and hybrid watermilfoils. (Continued on page 23)



## Problems with Mistaken Identity

Accurate identifications of watermilfoils are critical for informing aquatic plant management programs. We highlight three general situations spanning the range of intensity of in-lake aquatic vegetation management in which accurate distinction of Eurasian, northern, and hybrid watermilfoils can inform management decisions.

- **Early Detection and Rapid Response** – Early detection and rapid response provides the greatest likelihood of preventing the establishment and spread of introduced species. To be effective, introduced species must be rapidly and accurately identified and verified (see Table 1). For example, misidentifying native northern watermilfoil as non-native Eurasian or hybrid watermilfoil would lead to unnecessary management actions. In the best case, this unnecessary management would incur superfluous management costs to stakeholders; in the worst case, unnecessary removal of northern watermilfoil could open up habitat for invasion by non-native Eurasian or hybrid watermilfoil. On the flip side, misidentification of Eurasian or hybrid watermilfoil as native northern watermilfoil could result in the rapid development of a nuisance population that ultimately requires more intensive and costly management actions, and that spread to nearby water bodies.

Visual ID (What you think it is)	Genetic ID (What it actually is)	Outcome
Eurasian or Hybrid	Northern	Natives identified as invasive can lead to inadvertently treating native plants. Removing native plants may lead to future invasion.
Northern	Eurasian or Hybrid	Plants may not be treated and may become a problem locally and/or spread to nearby lakes.
Hybrid	Eurasian	May use more potent treatment than necessary.
Eurasian	Hybrid	Hybrids may have muted response to treatments normally effective on Eurasian.

Table 1. A summary of the ways to misidentify watermilfoils visually, and their potential consequences for management of non-native watermilfoil.

- **Developing Precise Management Prescriptions in Lakes with Co-occurring Watermilfoil Types** – It is important to recognize that different types of watermilfoil can co-occur within a lake, either in the same or different locations (Fig. 2). Genetic surveys where multiple plants and locations were sampled have revealed that co-occurrence of distinct watermilfoils is common in lakes (Sturtevant et al. 2009; Thum, unpublished data). We posit that managers should take care to accurately identify and map watermilfoils throughout a lake to determine the distribution and abundance of any different types. For example, it may be desirable to avoid management activities, such as herbicide application, in northern watermilfoil patches to preserve this native species. Recent research demonstrates that hybrids, on the other hand, are more likely to exhibit nuisance growth conditions in lakes and ponds compared to either parent species. In addition, hybrid watermilfoils can demonstrate a muted response to some herbicides. Thus, hybrids may warrant increased vigilance in terms of prescribing and monitoring management activities (Fig. 2)

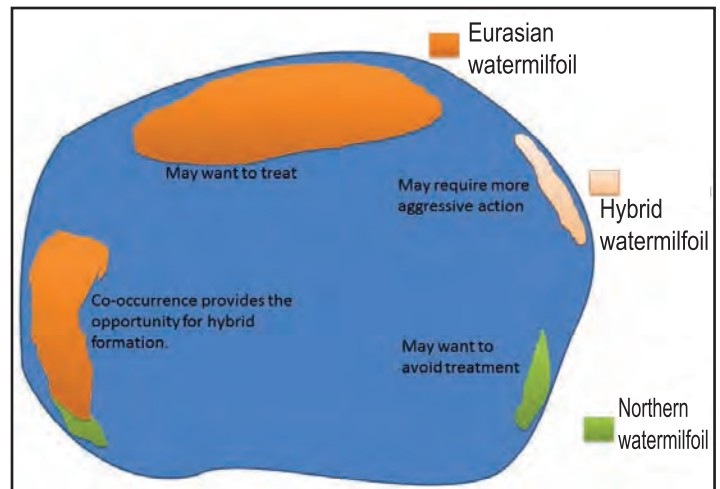


Figure 2. Eurasian, northern, and hybrid watermilfoil have been observed to co-occur in the same lake. The abundance of these different types of watermilfoil in each patch may impact treatment prescriptions and the amount of monitoring effort post-treatment.

- **Long-term Aquatic Vegetation Management Projects** – Many lakes with established infestations of non-native watermilfoils require periodic treatments with herbicides or other management techniques because plants frequently re-establish, even after a treatment successfully reduces non-native watermilfoil distribution and abundance. However, there is considerable variation in how widespread and dense the regrowth is, and how soon after treatment it occurs (see Fig. 3). For example, some lakes may have several seasons of ‘relief’ from non-native watermilfoil following management while others may only get one season of relief; still others may experience rapid regrowth within the same season of treatment. Furthermore, anecdotal reports from some lakes indicate that the extent of regrowth can increase across successive treatments. Given the considerable economic costs associated with management activities, understanding the variation in the magnitude and timing of resurgence is essential in order to minimize the economic costs and ecological effects of management.

While many factors can influence the efficacy of any given management activity on a specific lake, we posit that significant changes in the composition of watermilfoil types in a lake is one possible cause for variation in the extent and speed of regrowth in lakes. Recall that hybrid watermilfoils have been shown to exhibit faster growth and reduced sensitivity to some herbicides. It stands to reason that the extent and speed of regrowth may change if the watermilfoil shifted from Eurasian watermilfoil to hybrid watermilfoil over time in a lake (Fig. 3). We therefore argue that frequent monitoring of watermilfoil in lakes with long-term aquatic vegetation management projects can be used to adapt management techniques. For example, in the absence of accurate monitoring data of watermilfoil types, it is impossible to determine whether any observed changes in watermilfoil regrowth or management efficacy are related to changes in the composition or distribution of different watermilfoil types (e.g., Eurasian versus hybrid) versus other factors.

(Continued on page 25)



Providing the World with Surface Water Management Equipment for



Years!!

800-328-6555

[www.aquarius-systems.com](http://www.aquarius-systems.com)

When it comes to the health of your lake,  
we prefer to look at the big picture.



**KIESER & ASSOCIATES**  
ENVIRONMENTAL SCIENCE & ENGINEERING

*Finding solutions to your lake and  
watershed challenges for nearly 20 years.*

Kalamazoo, MI 269.344.7117  
[www.kieser-associates.com](http://www.kieser-associates.com)

- USEPA-approved watershed management plans
- Grant writing and partnering assistance
- Aquatic plant surveys and mapping
- Agricultural and urban stormwater management
- Water quality monitoring
- Wetland evaluations
- Stream habitat restoration
- Dredging feasibility studies
- Lake level augmentation studies



# Incorporating genetic identifications of watermilfoils

(Continued from page 23)

## Integration of Genetic Identifications with Aquatic Vegetation Mapping –

Integrating genetic identifications into existing aquatic vegetation mapping services begs the question of how best to do it. How much sampling is required within a lake? How frequently should genetic surveys be conducted?

Ideally, genetic identifications would be integrated into standardized aquatic vegetation survey methods designed to quantify the distribution and abundance of aquatic plants, such as Point-Intercept methods. Since these surveys rely on species-specific identifications, and since Eurasian, northern, and hybrid watermilfoils can easily be misidentified, we recommend that at least one plant from each survey point with watermilfoil be genetically identified in order to accurately map their distribution and abundance. However, we recognize that this level of detailed sampling may not be economically feasible at the present time for all lakes. We predict this will become the standard, especially as the per sample costs for genetic identifications decrease with increased technology and infrastructure to support genetic identifications.

For more limited budgets, we recommend sampling plants from each area of the lake where watermilfoil is present. Because native and non-native watermilfoils can occur in the same water body, and because native and non-native watermilfoils can be difficult to distinguish, it is important to sample plants from all areas of the lake instead of sampling only plants that are thought to be non-native. For example, in early-detection-and-rapid-response scenarios, it is important to sample both the putative invasive and native plants to ensure that management actions are based on accurate identifications (see Table 1). Similarly, for lakes undergoing management, it is important to sample treated areas both before and after treatment in order to detect any important changes in biotype distribution before and after management.

The overall goal of adaptive management is to make effective decisions in the face of uncertainty. As with management of any natural resource, lake management is inherently uncertain. A critical part of adaptive management is detailed monitoring of the system in order to evaluate and modify management approaches. Aquatic vegetation mapping plays a critical role in the development and evaluation of aquatic vegetation management actions. However, in the case of watermilfoil management, limited ability to distinguish Eurasian, northern, and hybrid watermilfoils may have historically limited the ability to develop, implement, and evaluate management actions that target the selective removal of

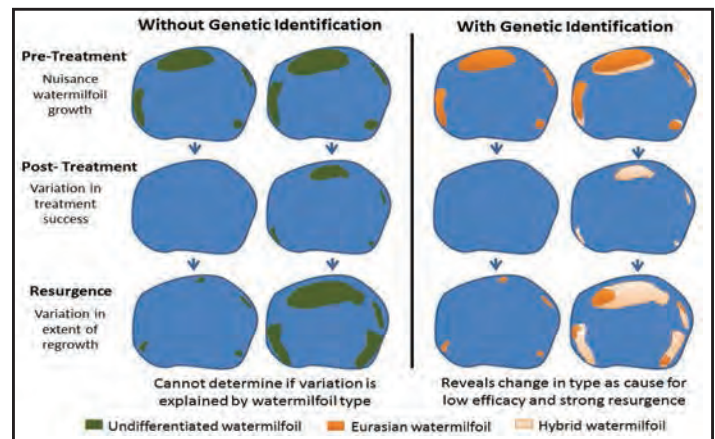


Figure 3. Genetic identifications provide information on whether variation in treatment efficacy and resurgence is related to changes in dominance of different watermilfoil types.

non-native watermilfoils. Genetic identifications can improve vegetation mapping by providing more accurate distribution and abundance estimates of Eurasian, hybrid, northern and other native watermilfoils. As genetic monitoring becomes routine, we believe that our understanding of watermilfoil distribution and abundance over time in managed lakes will become more apparent. This, along with continued results from active research on the genetics of invasiveness, promises to provide additional tools for lake evaluation and maximizing treatment efficacy in the future. With this increased understanding will come more cost-effective and environmentally responsible aquatic vegetation management.

For more information and guidelines on genetic identifications, go to: <http://www.gvsu.edu/geneticidentification/>.



**MICHIGAN HYDRAULIC DREDGING, INC.**  
9100 LAKE COURT, CHEBOYGAN, MI. 49721

\*\*\*\*\*

**Dredging Michigan Lakes and Streams since 1950**

\*\*\*\*\*

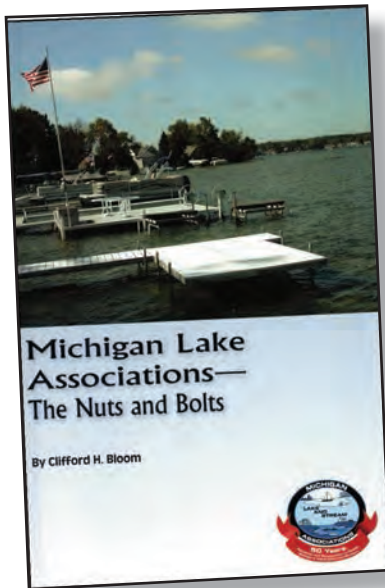
**Very Portable: 8" Mudcat and 8" & 12" Cutterhead  
dredges... pumping capability of 2 1/2 miles.**

**For more photos go to our web site @  
[www.michhydraulicdredging.com](http://www.michhydraulicdredging.com)**

\*\*\*\*\*

**Email: [mhd@nmn](mailto:mhd@nmn) et Phn e: (313) 555-1111**

TWO BOOKS WRITTEN BY CLIFFORD H. BLOOM AND PUBLISHED BY  
ML&SA TO BENEFIT LAKEFRONT PROPERTY OWNERS IN MICHIGAN!

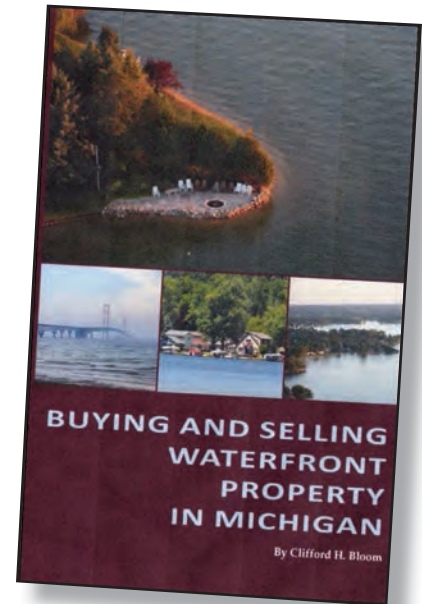


Are you and your lakefront neighbors pondering the creation of a lake association? Would you like to improve an existing lake association? Are you wondering about the legal ramifications of forming a lake association in Michigan? If so, this book will provide you with every detail and answer every question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

**(Quantity discounts available)**

**To purchase these books, contact ML&SA Central Office Manager  
Sharon Wagner at [swagner@mlswa.org](mailto:swagner@mlswa.org) or visit our website at [www.mymlsa.org](http://www.mymlsa.org)**

Waterfront Book ☐ Nuts and Bolts ☐

Name (please print): \_\_\_\_\_

Address: \_\_\_\_\_

Street or P.O. Box Number \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip Code \_\_\_\_\_

Email address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Please select:

**Waterfront Book**

\_\_\_ 1 book @ \$20.00 ea.  
plus \$6.00 S/H = \$26.00

**Nuts and Bolts Book**

\_\_\_ 1 book @ \$15.50  
plus \$5.00 S/H = \$20.50



## LEADING THE WAY IN BIOCONTROL & LAKE MANAGEMENT



EXCELLENCE  
in Any Environment

The Lake Management division of EnviroScience not only leads the way in biocontrol for the invasive plant, Eurasian watermilfoil, but also is staffed with experts in watershed and lake management. Our biologists specialize in comprehensive evaluations to identify and solve problems in lakes, ponds, reservoirs and watersheds.

### HOLISTIC MANAGEMENT APPROACH

Problems associated with lakes and bodies of water are often a result of nearby land use. For example, nuisance aquatic plant growth is often caused by excessive nutrients entering the lake from failing septic tanks, lawn fertilizers and/or agriculture runoff. It's our job to find the source of the problem, not just treat the weeds.

EnviroScience is also the exclusive provider of the Milfoil Solution® process, a natural, non-chemical alternative for controlling the growth of Eurasian watermilfoil. Using a native insect, the milfoil weevil, we are able to provide long-term control while encouraging natural lake habitat.

### LAKE MANAGEMENT SERVICES

- Sediment Profiling
- Watershed Assessment
- Water Quality Testing
- Aquatic Plant Surveys
- Milfoil Solution®
- Fishery Evaluations
- Bathymetric Mapping
- Shoreline Restoration

### REPRESENTATIVE CLIENTS

- Private Organizations: Lake Associations, Lake Improvement Boards, Homeowners Associations
- Local Agencies: Townships, Conservation Districts, Park Districts, Watershed Districts
- Federal, State and Provincial Agencies: USEPA, US Army Corps of Engineers, DNR, DEQ, MNR, MOE
- Utilities and Power Industries: Municipal Services, Hydroelectric Companies



*Collecting water samples*



*The milfoil weevil is smaller than a grain of rice*



*Measuring water quality parameters*

**Every Sound Management Plan Starts with an Assessment of Current Conditions**  
Contact Our Experts Today! **800.940.4025** OR Visit Us at **[www.EnviroScienceInc.com](http://www.EnviroScienceInc.com)**



## Over 30 Years of Invasive Plant Management

- Lake Management Planning
- Vegetation Surveys
- Bathymetric Mapping
- Herbicide Applications
- Water Quality Monitoring
- Weed Harvesting
- Fish Evaluations
- Fountain & Aeration Systems
- Retail Sales

P.O. Box 132, Caledonia, MI 49316  
PO Box 424, Evart, MI 49631  
10222 Rose Blvd, Morris, MI 48857  
800-382-4434 [www.plmcorp.net](http://www.plmcorp.net)



Michigan Lakes &  
Streams Foundation, Inc.  
300 N. State Street, Suite A  
Stanton, MI 48888

NON-PROFIT ORG.  
U.S. POSTAGE  
**PAID**  
LANSING, MI  
PERMIT #975

#### NOTE TO SUBSCRIBERS:

Please call The Michigan Riparian office at 989-831-5100 or e-mail [swagner@mlswa.org](mailto:swagner@mlswa.org) with any changes regarding your mailing address.

## Aerial Images of Every Michigan Lake



School House Lake



**Order Today!**

(616) 956-0419 | [AerialGRAPHICS.COM](http://AerialGRAPHICS.COM)

## Does Your Pontoon Boat Need a Face Lift?

Top Quality Aftermarket Marine  
Upholstery & Accessories  
for Pontoon & Deck Boats  
Buy Manufacturer Direct –  
Shipped Worldwide

Custom Marine  
Upholstery Applications  
& Colors

Rectangular & Round  
Table Kits

Fiberglass Helm  
Stands

Marine Carpeting &  
Vinyl

Bimini Tops

Re-decking Kits

[www.americansofttrim.com](http://www.americansofttrim.com)

**Call Toll Free 877-463-0356**

*For Brochures, Pricing & Color Samples. OEM & Dealer Inquiries Welcome*



**AST**  
AMERICAN SOFT TRIM, INC.

300 Woodside Dr.,  
St. Louis, MI 48880

TEL: 989.681.4300 FAX: 989.681.4333

