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THE MICHIGAN RIPARIAN

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FROM THE PUBLISHER

Front — and — Center



I often am asked how a lake can be featured on the front cover of *The Michigan Riparian*. Here's the secret... We welcome articles from the UP to the Lower Peninsula and all around the state. Lakes, rivers, or watersheds, big and small, all have a story to tell. Just send it in. Readers enjoy learning about the history, current activities, challenges and victories experienced by riparians located throughout our great state. Your lake's story is unique, so tell it like it is!

Our front page feature, Gilead Lake, located in Branch County, shares a common concern about managing the spread of Eurasian Milfoil. It's interesting to note how many of the same challenges have plagued lakes all over the state. Read about how Gilead Lake succeeded in its endeavors because people chose to work together for the lake they love.

So, to answer the question about getting your lake on the front cover of *The Michigan Riparian*, we say just do it! Find the writers, historians and veteran residents around your lake and encourage them to put together what is unique about your lake's history, or its annual events and the people involved, or what problems and solutions your lake has experienced. And, of course, no story is complete without lots of pictures. Send your information to: info@mi-riparian.org. Why not? You might just find your lake on the next cover!

In this issue, you will find helpful information about the growing trend for natural shorelines and from Michigan Lake & Stream Associations' Executive Director, Scott Brown, on the Michigan AIS Advisory Council. Learn about the ins and outs of ORV's on the beach or what the rules are for wave boats. Cliff Bloom's articles on those subjects will put you 'in the know'.

We hope you enjoy the fall season. Take a moment to take in the beauty surrounding all of us who are privileged to live on the water.

-publisher, Sharon Wagner

Send your information to:

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A STORY OF COOPERATION: GILEAD LAKE AND ITS SOLUTION TO THE CONTROL OF EURASIAN WATERMILFOIL

Michael T. Biesiada, Secretary
Gilead Lake Association

RECOGNIZING THE PROBLEM

As early as 2001, concern over the existence of Eurasian watermilfoil¹ in the waters of Gilead Lake was brought to the attention of the board of the lake association. The board proceeded to do a considerable amount of research on the behavioral aspects of this invasive species and to consider options.

Eurasian watermilfoil (*Myriophyllum spicatum*) is a submersed perennial non-native, aquatic plant that was imported from Europe and Western Asia. It is readily transported from lake to lake on boat motors and trailers. It is self-propagating. Fragmented pieces can root themselves and start a new crop. Left unchecked, it will slowly choke out a shoreline and make navigation a nightmare. Because it starts its spring growth earlier than native plants it can easily shade out beneficial species and crowd out and replace native vegetation, playing havoc on the ecosystem. The lake board's research established that there is no known way to eradicate it. It can only be controlled. The board was determined to protect the waters of Gilead Lake by integrating the most effective, economically feasible, and environmentally sound method available.

In September of 2002, a survey of the problem was conducted by the Michigan Department of Environmental Quality (DEQ).² Their findings displayed varying degrees of concentration of the milfoil in Gilead Lake with the heaviest being near the boat launch area. The milfoil was widely scattered around the lake and represented 4.76% of the plant life observed.

The report concluded that currently native plants dominate the aquatic plant community and stated, "However, Eurasian watermilfoil has a strong potential to expand its presence within the shallow areas of the lake... Eurasian watermilfoil should be monitored for possible aquatic plant management activities." The time to act was opportune as the milfoil was still at a manageable level.

The methods of aquatic plant management that were investigated by the lake association board included: harvesting, chemical applications and the milfoil weevil (*Euhrychiopsis lecontei*), a native species. Harvesting proved to be expensive, too labor intensive and the process causes fragmentation with the further spreading of the weed. This method also needs to be repeated on a regular basis and the decaying vegetation must be disposed. Chemical applications were also investigated. In 2003 some chemical applications were deemed dangerous to the environment and to wildlife; others were reported to be safe but required proper handling and permits. Applications would have to be repeated periodically and the long-term effects of the constant use of these chemicals remained questionable. Additionally, there was a large outcry against the use of chemicals on the part of some property owners on Gilead Lake.

The only method that made sense was the introduction of the milfoil weevil. Milfoil is this bug's primary source of food. In its life-cycle, it provides continuous consumption of the plant. Also of importance is that the weevil does not attach to people or pets; it simply feasts on the milfoil. Adult weevils lay

their eggs on the milfoil plant. The hatched larvae bore down through the stem eating the cortex. This suppresses plant growth. Use of the weevil proved to be successful in many earlier case studies. A University of Minnesota study also demonstrated that once the weevil is exposed to Eurasian watermilfoil, it prefers Eurasian over its native host, northern watermilfoil.³

The board conceded that the milfoil could not be fully eradicated and that the weevil provided the best means of control. They also recognized that Eurasian watermilfoil was a lake-wide problem and needed to be addressed on a lake-wide basis. A random survey of property owners was conducted in the fall of 2002 and it supported the adoption of a program using the milfoil weevil.

The Gilead Lake board contacted EnviroScience Incorporated, an environmental solutions company that provides services for the placement of the weevils. Their staff consists of a multi-disciplinary team of biologists with a



Note: Gilead Lake is located in southwest Branch County, approximately six miles south of Bronson.

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GILEAD LAKE

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proven track record. The company sent a representative to a meeting of concerned citizens at the Gilead Township Hall in November of 2002. Their biologist familiarized the group with the milfoil weevil and the success of its usage on other lakes in the Midwest.

FUNDING THE SOLUTION

The initial estimate for the full application of the milfoil weevil in 2003 was \$13,530. EnviroScience recommended that stocking be applied using several thousand weevils at selected sites around the lake. The goal was to apply enough weevils at each site so they could find each other and reproduce rapidly.

The board conducted extensive investigations into methods to fund the project. Voluntary participation of property owners was discussed but the board felt there must be other ways to acquire funding. Board members explored the option of obtaining a grant to help finance these efforts but with cutbacks in the State of Michigan, they experienced a lot of dead ends. In Indiana, money to finance weed control was channeled through cost-share grants. The cash came from Indiana's Lake and River Enhancement Fund (LARE) administered by the state's DNR Division of Soil Conservation. The board contacted the Michigan Soil Conservation District offices but were told there were no funds available for such a project.

Board members also connected with several other lake boards that were contending with Eurasian Milfoil. Many were larger lakes that had extensive problems with weed control. Most of the associations collaborated with their township or county

offices to set up special assessments levied against riparian property owners to pay for weed eradication. The North Chain Association in northeastern Branch County Michigan worked with two township boards, the drain commission, the DNR and a representative from the City of Coldwater to set up a special assessment in 2003. The assessment is still in place today and the group spends over \$100,000 annually in weed control according to Terry Reen, association president.

Special assessments not only take time, but the process is also multifarious requiring many legal steps. The procedure was initially developed with the passage of Public Improvements Act 188, established in 1954. The board realized that to be managed properly, it would be necessary to retain legal counsel. The first step in the process involves the circulation of a petition to create the special assessment district. Each property owner is asked to sign the petition and at least 51% have to endorse the effort in order for the process to move forward. If this majority is achieved, the next step is to submit the petition to the township, which has well-defined legal obligations to perform before a special assessment can be enacted. These obligations include notices of hearings, the hearings themselves and the usual "red tape" connected with this type of undertaking. After implementation, the assessment would be levied in addition to the riparian's property taxes. Given all of these steps and the bureaucracy involved, the first year's assessment would easily exceed the amount of voluntary payment being considered by the board.

Working on the assumption that the cost of the project would have to be paid for by the property owners on Gilead Lake,

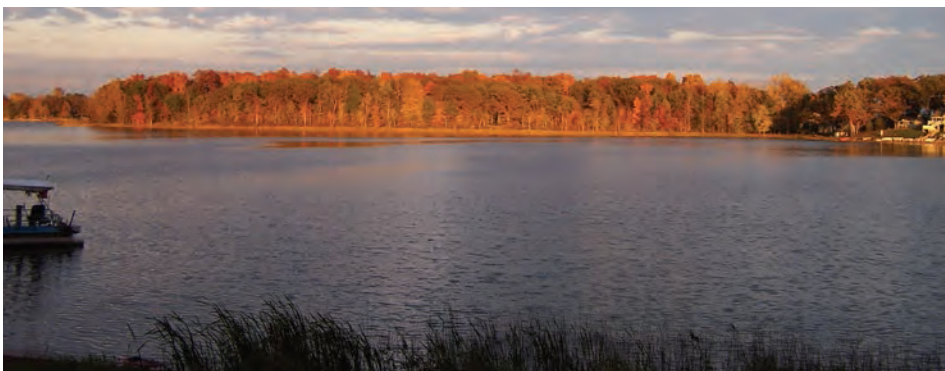
either voluntarily or with the use of a special assessment, the board drew up a detailed report outlining the problem and the options. The report was distributed to all property owners at the end of April 2003. The board realized that if they were to educate folks on the lake, they may be able to muster 100% voluntary financial participation. In addition to the "out-of-pocket" cost considerations, people were also asked to consider the probable effect on the market value of their properties. Should the degree of infestation reach undesirable levels, it would, in all probability, have a negative impact on the worth of their homes. They were made to realize that if navigation became difficult and shorelines were choked with the weed, home owners may find it hard to sell their cottages for fair market value.

EnviroScience was invited to Gilead Lake to conduct a preliminary survey on May 6, 2003. Association members ferried the biologists around the lake, and they suggested target areas for the introduction of the weevils should the board hire their services. It was ascertained that the test sites should yield results by the end of the summer. These sites were selected away from high traffic areas to "give the little critters a chance." Now it was up to the board to approve the contract and to advance the funding.

VOLUNTARY PAYMENT

In 2003, there were 123 individual property owners on the lake. If each were to voluntarily pay an equal amount, this would equate to approximately \$110 each for a complete application of the weevils (\$13,500). The cost of the initial application included the stocking of the weevils, a survey and report

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in the fall of 2003 as well as a follow-up survey and report in the fall of 2004.

Led by the board's treasurer, Marilyn Walters, efforts were made to contact every property owner personally, explain the situation and to ask for their participation. In the first part of May 2003, the board reached 82% voluntary participation. By the end of June 2003, the board achieved 98% participation with only three property owners abstaining due to personal reasons. The level of cooperation was phenomenal.

Based on this support of the program, the board felt empowered to move forward with the initial application. On June 26, 2003, the biologists from EnviroScience arrived at Gilead Lake. Suiting up with scuba gear, they entered the waters of the lake. Again, board members conveyed the biologists to the test sites. The stocking itself consisted of 7,000 weevil eggs and larvae which were evenly divided between two sites of milfoil infestation in the lake: S1 off of Stoney Point and S2 near the boat launch area (see map). They were manually introduced on the stems of the milfoil. A monitoring site (M1) was also established. M1 was not stocked with weevils nor were any found living in the vicinity. Instead, M1 was used as a control site to monitor the movement of the weevils in the lake.

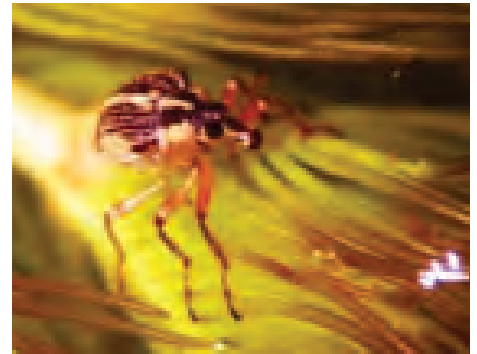
June 26, 2003 was also used as the date of the initial survey. Samples of the milfoil were collected and analyzed using a microscope. This was conducted to determine if the milfoil weevil was already present in the waters of the lake and to determine the number of meristems.⁴ The composition of the plant community in the lake was also sampled. By noting the dominant plant species for a given area, a comparison could be drawn between the follow-up survey and the initial survey. It could thus be established if the native plants were rebounding. Finally, by measuring the distance from the surface of the water to the top of the plant canopy (freeboard), it could be determined if the weevils were causing the Eurasian watermilfoil to fall out of the water column over the course of the summer. The biologists did find a small population of milfoil weevils already living in the lake who were about to meet an abundance of their cousins.

The biologists put in a hard day in the waters of the lake carefully depositing the bugs on the stems and leaves of the milfoil. Now, all concerned parties would have to wait to see if the weevils enjoyed their new environment and would reproduce.

FOLLOW UP SURVEY, 2003

One of the biologists from EnviroScience returned to Gilead Lake on September 8, 2003 conducting the follow-up survey and reporting on the progress of the weevils. He observed that the group in site S1 had performed as would be expected for the end of the first season. Moreover, he reported that the weevils near the site at S2 had actually reached a rate of control that would not have been expected until the end of 2004. Many of the stems were bare signaling successful weevil growth and reproduction. At the monitoring site (M1) weevils were also found. Since no weevils had been introduced at this site, it was obvious that they had made their way downwind naturally.

Qualitative and quantitative data was collected using the same methods as the initial survey. The field observations and laboratory analysis returned results indicating that a healthy population of weevils was established and had commenced



One heroic little bug: the milfoil weevil ⁵

to control the Eurasian milfoil. The original weevil eggs and larvae had developed into adults and had started to reproduce. Weevil damage was noted in S1, S2 as well as M1. Pockets of the milfoil were observed to have brownish stems and were falling out of the water column.

New growth of native plants including Sago pondweed and Chara were observed at S2. Adult weevils were spotted on the stems of the milfoil at all three sites and on the collected stems used for analysis. The density of the Eurasian watermilfoil had decreased at all of the sites.⁶ The introduction of the weevil was deemed successful. This was welcomed by association members and reinforced the board's decision of voluntary cooperation.

In their spring newsletter for 2004, the board reported: "The weevils have overwintered... and have already returned to their duties. The population is expected to expand and disperse throughout the waters of the lake. The environmental conditions in Gilead Lake support a healthy and growing weevil population. More dramatic results are expected to be seen through the 2004 growing season. Large holes will open in the beds near the stocking sites to be replaced by native plants."

SECOND SURVEY, 2004

On August 5, 2004, the second survey was conducted. Two biologists arrived and were met by two board members and their spouses who transported them and their gear to the test location sites. Data was collected using the same protocol as the 2003 surveys. The analysis demonstrated extensive weevil damage at all of the survey sites. The Eurasian watermilfoil had brittle



Gilead Lake showing stocking sites S1 near the boat launch and S2 off Stoney Point. M1 is a control site and no weevils were introduced in this area.

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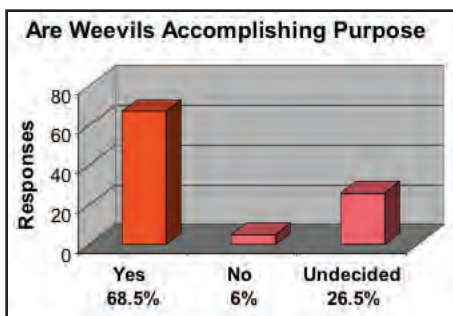
GILEAD LAKE

stems and its population was unhealthy and well below the surface of the water at the test sites. Large pockets of native plants had returned.

Association members were very much in agreement that the weevils had been most successful at site S2 off of Stoney Point. The board conducted a survey to garner input from association members on the success of the weevils. There were 68.5% that felt that the weevils were accomplishing their intended purpose; 26.5% were yet undecided but only 6% felt the weevils had failed. The board also questioned members on their response to voluntary participation and found that 80.5% were either in favor or still undecided. Another 19.5% were opposed to the use of this method yet only 2% of the property owners had initially refused to cooperate.

As the weevils decimate a bed of Eurasian watermilfoil, they begin to migrate to adjacent beds in search of better quality plants. Given this, it's not surprising that weevil density may be lower in some sites after the first year of stocking. Field observations noted that the majority of the milfoil within the surveyed sites was badly damaged by the weevils, indicating that most of the weevil population was in the process of migration. Also noted was the return of native species replacing the decimated milfoil.

The populations of both the Eurasian watermilfoil and the weevils will fluctuate over time. With the absence of the migrated weevils, the milfoil will rebound and spread which will, in turn, attract more weevils. The process then repeats itself. In the long run, the magnitude of the fluctuations decreases until both populations reside at a lower, sustainable level. This model is similar to most "predator-prey" relationships.



The concentration of the milfoil near the boat launch area declined in 2004 but bounded back in 2005. This was largely due to its continued reintroduction in Gilead Lake on the boats and trailers of people visiting from other infected bodies of water. This was further complicated by the heavy traffic at the boat ramp. Propellers from visiting watercraft chop up the milfoil and the loose pieces proliferate in the nearby shallow waters of the lake.

The environmental conditions in Gilead Lake continued to support a thriving weevil population. The weevils "over-wintered" successfully and continued to destroy the milfoil in 2005 through 2008. In 2009 expansion of the milfoil in certain areas of the lake once more became a cause of concern. Early in 2010, the board again contacted EnviroScience to request another survey of the lake.

SURVEY 2010

On July 20, 2010 an EnviroScience biologist returned to Gilead Lake to conduct the Milfoil Solution Maintenance Survey.⁷ The biologist studied several sites around the lake including the two original sites for comparative purposes. The survey was again conducted to monitor the weevils' progress and to record the extent of Eurasian watermilfoil.

A survey report based on this visit was submitted to the board in the autumn of 2010. It noted that: "In 2009, concern of increasing Eurasian watermilfoil growth in several areas in the lake brought EnviroScience back to the lake to assess the weevil and Eurasian watermilfoil population in Gilead Lake." The biologist that performed the assessment determined that a healthy weevil population was still present in the waters of the lake and the resurgence of Eurasian watermilfoil was likely temporary for the weevil population had naturally increased and regained control.

"The results of the survey revealed that the milfoil weevils stocked in 2003 are remaining strong and effective seven years post augmentation. These impressive results, revealed in both the low density of milfoil and the healthy weevil population density



Board Treasurer, Julie Strack with grandsons
Brandon (L) and Wyatt (R)

found in sites that were never stocked, demonstrate that the milfoil weevils have been an effective, sustainable management program for Gilead Lake."

Analysis data, along with field measurements and observations, displayed that a weevil population was thriving. While Eurasian watermilfoil has shown up in several new areas since weevils were stocked in 2003, the survey provided evidence that weevils have been able to locate the new beds and have continued to keep them in check.

The information collected from the 2010 survey provided support for the long-term, cost effective value of utilizing biological control. A significant result of the program is that in some sites, weevil densities achieved what the scientific literature indicates is a critical density (≥ 0.5 weevils/stem). This density is necessary to suppress and bring about a decline in Eurasian watermilfoil growth.

"Gilead Lake is an excellent example of successful Eurasian watermilfoil management using weevils as demonstrated from the results of the 2010 survey. Comparing the 2003 to the 2010 milfoil densities provides strong evidence that weevils continue to effectively control Eurasian watermilfoil in Gilead Lake seven years post stocking."

The biologist recommended that the residents of Gilead Lake also be on the lookout for new milfoil beds to ensure that they are not spreading out of control. Diligent monitoring and observation will allow for a faster response with lower costs should additional management be deemed necessary.

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GILEAD LAKE

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EnviroScience biologists, Kim Sage and Sarah Lomske, during their September 2012 visit to Gilead Lake



This was taken at our annual picnic and shows riparians: Gene Pignataro, Dan Marsonok, Marilyn Walters, Linda Yingling and Marv Morrill proudly wearing their Gilead Lake shirts.

SURVEY 2012

With the high temperatures experienced in 2012 and the lack of rain, Gilead Lake experienced low water levels and excessive plant growth. Consequently, the weeds in some areas of the lake seemed to have proliferated. This was especially noticeable at the far west end of the lake near the boat landing. There was again concern that the Eurasian milfoil was out of control. The board contacted EnviroScience.

On September 6, 2012, EnviroScience returned for a field analysis. Two biologists traveled from Stow, Ohio to Gilead Lake arriving in the afternoon. They performed their survey of the entire lake escorted by two association board members.

What they found was that there is an excessive amount of milfoil closer to the shore west of the boat ramp which continued along the shoreline in front of the first few homes back to the east. What was observed in this area appeared to be a hybrid: a cross-pollination of Eurasian and Northern Milfoil. The biologists explained that, not only does the milfoil weevil prefer Eurasian watermilfoil over Northern milfoil but it favors the hybrid over the native species as a second choice.

There was a smaller concentration of Eurasian observed at the far north end and one biologist in her examination, actually found a weevil on a stem in this patch and showed it to the board members. Another problem area is the channel behind Stoney Point and other smaller spots of Eurasian

were spread throughout the lake but none of any concern.

With the unusual climatic conditions that we experienced in 2012, Eurasian watermilfoil, as well as many native species, thrived and expanded. And, as the water level dropped, the plants formed mats in some shallow sections of the lake. The board in its autumn newsletter issued a report on the biologists' survey along with information to help residents identify Eurasian watermilfoil.

In any event, "weeds" became a problem in some areas of the lake in 2012 and some property owners were asking for other methods to check the spread of not only the milfoil but weeds in general. The board contacted an environmental quality analyst at the Michigan Department of Environmental Quality (DEQ). This gentleman provided some insight as to what options, beyond the weevil, were available to property owners who have an excessive amount of weeds. There are products on the market now that are not only legal but safe if used properly.

The DEQ analyst outlined the steps to be taken to gain a permit and to utilize the chemicals. To gain a permit, residents must complete a permit application using form EQP 2790 which is available at the DEQ website. The DEQ website also provides additional information on the proper use of chemicals for the purpose of controlling nuisance aquatic plants and algae.

For most chemical products, certification is not necessary for application unless

the property owner decides to hire a paid applicator. All property owners within and adjacent to the application site must be notified before the herbicide can be employed. Today there are several safe herbicide products on the market that can be employed to treat lake weeds. Application is best in the springtime or early summer when the plants are rapidly growing.

These herbicides will kill the Eurasian milfoil, but many are marketed that destroy native species. So the chemicals will kill Northern milfoil as well as pondweeds and other beneficial weeds in the lake. Some of these herbicides can also terminate species you may enjoy, including spatterdock, cattails and water lilies. This should be considered as lily pads will shade the bottom surface reducing sunlight and discouraging the growth of submersed species below as well as adding to fish habitat. Cattails filter water entering the lake and remove pollutants. They are capable of storing large amounts of nitrogen and phosphorous as well as reducing shoreline erosion and encouraging wildlife.

If the product application kills Eurasian milfoil, one of the biologists from EnviroScience stated that the weevils may swim away and find new plants but they are very poor swimmers. Their eggs and larva living in the stems will die. This should also be a consideration when making a decision to use chemicals.

In their newsletter, the board of the Gilead Lake Association stated that they did not

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GILEAD LAKE

Continued from page 11

condone or refute the use of chemicals. Their position is neutral. The board did present information in the newsletter that outlined the legal procedure for the use of chemicals. In providing this information, people who were inundated with weeds could take the necessary steps to eliminate them.

2013

In 2013 Gilead Lake returned to a normal water level and the milfoil did not present any problems except near the boat launch. Early in the summer, some property owners exercised their legal option to use chemicals. The board realized that while the weevil has done an outstanding job of controlling the milfoil, the weed's constant reintroduction near the boat launch is more than the little critters can handle.

But our story is one of cooperation. It was the banding together of the residents

of Gilead Lake to voluntarily pay for the introduction of the milfoil weevil that allowed for intervention before Eurasian watermilfoil was out of control. It was the cooperation of trained biologists whose methods had been perfected...and it was the cooperation of a few thousand specialized native bugs that made this effort a success. Our journey is presented as an example for other lake associations to emulate when faced with similar lake-wide problems. To our group of concerned riparians, cooperation was key to a successful and effective method of implementation.

Michael T. Biesiada



¹For purposes of this report, Eurasian watermilfoil, Eurasian milfoil and "milfoil" are used interchangeably and denote the same plant species.

²Aquatic Plant Survey Field Report, DEQ Land and Water Management Division, Inland Lakes and Wetlands Unit, Gilead Lake, 2002. On September 6, 2002, conditions were sunny with a light wind.

³<http://fwcb.cfans.umn.edu/research/milfoil/milfoilbc/weevil.html>

⁴Meristem - the growing point or area of rapidly dividing cells at the tip of the stem. New stem growth.

⁵Photo by Tom Alwin

⁶Progress Report for the Implementation of the MiddFoil® Process, 2003 prepared for: Gilead Lake, EnviroScience Incorporated, November 2003. Today, Milfoil Solution® is the updated name for this patented method used by EnviroScience to introduce the weevils for control purposes.

⁷2010 Report of the Milfoil Solution® Maintenance Survey in Gilead Lake, EnviroScience Incorporated November 26, 2010

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Using Native Plants in Landscape Design Projects:

What Contractors Need to Know



A series of three tours of Michigan native plant and seed production facilities increases understanding of this 'growing' industry.

Posted on September 17, 2013 by Jane Herbert, Michigan State University Extension

Interest in more natural shoreline (and upland) landscapes is helping grow Michigan's relatively small native plant industry. From corporate properties to residential shorelines, landowners are seeking to increase the ecosystem services their properties can provide. These services include food, cover and habitat for birds, butterflies and other pollinators, filtering polluted runoff and stabilizing eroding upland or shoreline soils. This growing interest is beginning to translate into work for Michigan's landscape industry which has historically sourced plant material from traditional nurseries. But are there differences in the way native plants and seeds are produced, marketed, sold and shipped? According to members of the Michigan Native Plant Producers Association (MNPPA), the answer is "Yes" and the better a contractor understands this industry, the more successful they will be in servicing customers.

Michigan State University Extension, in cooperation with three MNPPA members (who are also active in the Michigan Natural Shoreline Partnership), recently hosted a series of three tours during which landscape contractors, and others, could learn more about Michigan native plant and seed production practices. The

tours were attended by twenty participants representing eight counties. Seventeen of those in attendance were Certified Natural Shoreline Professionals who earned continuing education units towards maintaining their CNSP certification.

Participants saw firsthand how native plant seed is collected, cleaned and stored. They learned that it is sold by the ounce of Pure Live Seed (PLS) and that custom seed mixes are created using 'recipes' that can be scaled up from a few square feet to large scale acreage. Also, the seed of most native plants require a cold period (cold stratification) before they will germinate which insures the seed does not germinate prematurely once planted. This means that processed and stored seed for sale will germinate best if cold stratified either in the field or under refrigeration.

Participants also saw how nursery-grown native plants may be grown in containers similar to traditional nursery stock but may also be grown bare root. Some aquatic and wetland plants can be seeded into small ponds and later harvested for pick-up or shipment. The window for shipping bare root plants is shorter than that of container-raised stock – a consideration for contractors ordering plants for a shoreline project. In fact, the big take home message of the tour series seemed to be "Order as far in advance as possible" since native plants are grown for a local market. This means sourcing native plants can be limited, unlike horticultural varieties which are grown and sourced over a much larger region.

Marie Muehlenbein, owner of Global Garden, Inc. in Northville, attended all three tours and made the following observation: "This year's MNPPA tours of native species nurseries gave me a clear picture of what plants and seeds are available, where to purchase them and the time sensitive manner in which to order the plants for optimal planting success."

MSU Extension would like to thank Wildtype Nursery in Ingham County,

Michigan Wildflower Farm in Ionia County and Wetlands Nursery in Manistee County for their generosity in hosting these tours.



This article was published by Michigan State University Extension. For more information, visit <http://www.msue.msu.edu>.

To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).



Photo: Jewel Richardson, owner of Wetlands Nursery near Manistee, explains the rooting power of wetland and aquatic plants. Photo by Jane Herbert.



Photo: Bill Schneider, owner of Wildtype Nursery near Mason, explains his process for growing native plants in containers in a greenhouse. Photo by Jane Herbert.



Photo: Esther Durnwald, owner of Michigan Wildflower Farm near Portland, explains how some native plant seeds must be hand-harvested while others are harvested mechanically with a specially designed combine (shown). Photo by Jane Herbert

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
Mail: The Michigan Riparian
300 N. State St., Suite A,
Stanton, MI 48888

Question: Our neighbor is going to treat the lake in along their shoreline with chemicals to kill the aquatic nuisance plants. Our property juts out into the water from their property line. Do they have a right to put the chemicals down along our shoreline where our property juts out into the water in that corner of the lake??

Answer: They have a right to apply aquatic herbicides to the aquatic vegetation near their shoreline if they and/or the company they have hired to do the treatment has a permit from the Michigan Department of Environmental Quality. You might want to ask to see their DEQ permit. In applying the aquatic herbicides, they must be very careful not to affect your native aquatic vegetation with the herbicides. If they do not have a permit, please report them to the local DEQ field office.

Thanks,
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.



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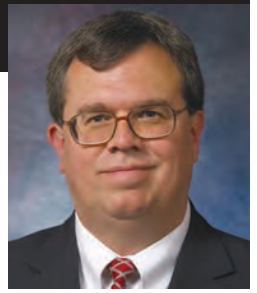
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Can an ORV be driven on the BEACH?

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



In Michigan, people often wonder whether it is lawful to operate an ORV (a four wheeler, ATV, motorcycle, go kart, Jeep®, dune buggy, side-by-side or the equivalent) on the shoreline or beach of an inland lake or the Great Lakes. There appears to be an almost uniform belief among laypeople and law enforcement officials alike that ORV's cannot be operated on the beach or shoreline of the Great Lakes in Michigan absent an emergency or use by law enforcement officials. However, the law is not that simple.

There is no statute in Michigan that outright bans the operation of ORV's on the shoreline or beach of the Great Lakes or inland lakes. MCL 324.81133 generally prohibits ORV use on the shore or beach of any inland lake or the Great Lakes where any of the following factors are present:

1. The property is state or federal land or park lands.
2. A designated natural area, game area, recreation area, or the equivalent is involved.
3. There is a trespass on the land of another without permission.
4. On lands lawfully posted as prohibiting ORVs.
5. Operation on any land or area in such a manner "as to create an erosive condition, or to injure, damage or destroy trees or growing crops."

If the topography is such that ORV use on the shore or beach will not cause erosion, the property is private, and no other factors listed above are involved, then it appears that such use would be lawful if done with the permission of the landowner (and in accordance with other applicable laws regarding speed, helmets, etc.)

The penalties for violating MCL 324.81133 can be severe. A person who operates an ORV in a prohibited area, or in a prohibited manner, can be charged with a criminal misdemeanor. Upon conviction, the person involved would have a criminal record and might have to disclose such a conviction on employment, loan and other applications. In addition to normal fines and penalties upon conviction, a person found guilty of violating the statute can be ordered to restore, at their cost, "any land, water, stream bank, streambed, or any other natural or geographic formation

damage." See MCL 324.81147. In addition, the ORV involved can be seized and sold in extreme cases.

Can an ORV be operated on the beach or shoreline of the Great Lakes without the permission of the adjoining riparian property owner? Assuming that such ORV use is not unlawful under any of the categories within MCL 324.81133 and such use occurs lakeward of the ordinary high water mark, it is possible that such use would not constitute a trespass. In 2005, the Michigan Supreme Court held in *Glass v Goeckel*, 473 Mich 667 (2005) that there exists a public trust easement lakeward of the ordinary high water mark on the Great Lakes adjoining Michigan for navigability (i.e., travel) purposes. Although that case involved a pedestrian, given that navigability typically involves travel, ORV use could conceivably fall under the definition of "navigability." Only time will tell if the Michigan courts will extend the *Glass v Goeckel* case to ORV use.

However, there is somewhat of a "wrinkle" with regard to the public trust easement situation. In the *Glass v Goeckel* case, the Michigan Supreme Court held that in most cases, the riparian landowner owns to the water's edge (wherever that might be on a given day) along the Great Lakes, subject to the public trust easement. This is consistent with part of a July 6, 1978 written opinion by the Michigan Attorney General stating that pursuant to *Hilt v Weber*, 252 Mich 198 (1930), a riparian landowner on the Great Lakes takes title to the water's edge. Attorney General Opinion No. 5327.

Despite that, the State of Michigan apparently takes the position that it owns all of the exposed bottomlands of the Great Lakes lakeward of the ordinary high water mark. Some law enforcement officials assert that ORV use on any portion of the shore or beach of a Great Lake constitutes "state land" for purposes of prohibiting ORV use thereon. This position is consistent with another part of that same Attorney General Opinion stating that under state statute, riparian ownership only extends to the ordinary high watermark (and not lakeward thereof). Attorney General Opinion No. 5327. A Michigan statute entitled the "Great Lakes Submerged Lands Act", MCL 324.32501 *et seq.* (referenced in the Attorney

General opinion), purports to establish state ownership of exposed bottomlands at the ordinary high water mark (and lakeward thereof). This, again, conflicts with *Glass v Goeckel*; however, a statute cannot take away or redefine existing property rights.

Thus, given the conflict and differing legal interpretations regarding how far a private riparian's ownership extends on the shore or beach of the Great Lakes in Michigan, a ticket authorized by a law enforcement official based on supposed state ownership of exposed bottomlands may not prevail.

ORV use on the shoreline or beach of inland lakes is different. In most cases, the riparian property owner owns not only to the shore or beach of an inland lake, but also the bottomlands under the water to the center of the lake. See *Hall v Wantz*, 336 Mich 112 (1953); *Gregory v LaFaive*, 172 Mich App 354 (1988); *West Michigan Dock & Market Corp v Lakeland Investment*, 210 Mich App 505 (1995). Accordingly, anyone who operates an ORV on the beach or shoreline of a private riparian property on an inland lake without permission would be trespassing. The exception would be if there exists a public road right of way or the equivalent running along the shore of the inland lake involved.

Regardless, even if ORV use does not violate a particular state statute, or is even done with permission on private property, the operator of an ORV on a beach or shoreline could conceivably be charged with malicious destruction of property or a similar charge if their ORV use is careless or reckless and causes damage to any lawful structure, foliage or other aspect of the beach or shoreline involved. In addition, it is highly likely that a local municipality (township, village or city) could ban ORV use on the beach or shoreline of any lake (including one of the Great Lakes) within the geographical limits of that municipality via a local ordinance, and could impose penalties for violating the ban.

I am not, of course, advocating ORV use on the shoreline or beaches of any Michigan inland lake or the Great Lakes. Rather, this article simply points out an area of the law that most people assume contains certainty when it does not. ■■■

MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.

ML&SA NEWSLETTER



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Recommendations of the Michigan AIS Advisory Council and Proposed Legislation Fall Far Short of Effectively Addressing the Aquatic Invasive Species Problem

August 14, 2013

by Scott Brown, ML&SA Executive Director

In a state blessed with so many high quality inland lakes whose immense intrinsic, economic and recreational value no one really questions, it is difficult for me to believe that after more than 65 years since the beginning of an onslaught of aquatic invasive species (AIS) that continues to erode the ecological health and value of our freshwater resources, Michigan has yet to enact a well-funded and viable program to prevent and manage these water-borne biological invaders.

Two recent proposals offered by State Senator Casperson and the Michigan Aquatic Invasive Species Advisory Council fall far short of funding the type of AIS management program that we need in Michigan to fully address the immense problems created by the presence of the aquatic invasive plants and animals that continue to devalue thousands of our state's most valuable freshwater water resources.

Although well intended, a bill recently introduced by Senator Casperson as well as the final recommendations of Governor Snyder's Aquatic Invasive Species Advisory Council both fall far short of creating the sort of well-funded, multi-faceted approach to combating aquatic invasive species that will ultimately be necessary to slow the spread of and effectively manage the adverse ecological impacts of aquatic invasive plants and animals.

While Senator Casperson's proposed bill seeks to revamp and streamline the Michigan DEQ AIS management permitting process and offers local units of government the option of passing ordinances that would allow the collection of public boat launching fees to be used to pay for local AIS management efforts, the proposal leaves the brunt of the workload for controlling AIS at

the local level. I suspect that often financially strapped townships and municipalities would be reluctant to implement yet another program that would further strain already overburdened budgets and workloads. Moreover, his proposal for collecting user fees at the local public boat launch facility would leave the work intensive task of collecting petition signatures to gain approval of such ordinances on the backs of lake associations or communities. While we believe that portions of the MDEQ AIS permit process revision language of this legislation may reap tangible benefits that could help reduce the cost and improve the efficiency of AIS management efforts and is worthy of consideration as the sole component of another bill, the language in the proposed legislation that attempts to reaffirm an unofficial de facto state policy for funding of AIS management efforts on inland lakes at the local level is a non-starter that does little to address the immense problems presented by the increasing existence of aquatic invasive species in our inland lakes and therefore should not receive the support of the state legislature or the Governor.

The final recommendations of Governor Snyder's AIS Advisory Council involve asking the state legislature to approve a nominal AIS management assessment fee on recreational boat registrations that would raise a mere five to six million dollars annually to fund the implementation of the state's newly revised AIS management plan. In light of the complexity, scope and severity of Michigan's AIS associated problems, we view this recommendation as woefully inadequate to effectively address the problem. We suspect that the majority of

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MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.

ML&SA NEWSLETTER



Recommendations of the Michigan AIS Advisory Council

Continued from page 16

these funds will be committed to addressing Great Lake AIS issues, a situation that will again leave the burden for funding inland lakes AIS management efforts on the backs of folks who live on or near inland lakes. Our state's lake associations and/or communities have been left "holding the bag" for the \$20 million per year cost of AIS control for over six decades, it is well past time for the State of Michigan to enact an adequate AIS funding mechanism that is capable of at least sharing some of this inordinate financial burden.

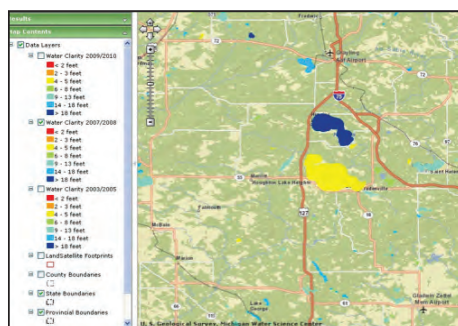
In the face of a massive invasion of AIS, the on-going efforts of our state's lake associations have ensured the preservation of viable recreational boating and fishing opportunities for the public as well as the unique lakefront lifestyles and private businesses whose success is so dependent on healthy aquatic ecosystems and good water quality.

The time to fully address and adequately fund the AIS problem in Michigan has come...a state AIS funding mechanism that raises any less than \$20 million annually does not allow for effective remediation of the AIS issue. In our view, one half of this amount should be allocated to efforts focused on the immense Great Lakes associated AIS problem and for funding of adequate staffing levels as well as operations and management of the MDEQ Office of the Great Lakes and the Aquatic Nuisance Species office, the remaining ten million dollars per year should be allocated to cost sharing the burden of AIS management on our magnificent inland lakes. This issue is ultimately epi-centered on good public policy as well as on equity and fairness for Michigan's recreational boating community and to our lake associations and communities.

Please call your state legislators today and strongly suggest to them that the time for a realistic and well-funded response to Michigan's aquatic invasive species is now!

USGS Michigan Lake Water Clarity Interactive Map Viewer

On-line Resource Allows Users to View Predicted Water Clarity of Michigan Lakes



Readers of The Michigan Riparian would be well-served by visiting the United States Geological Survey (USGS) Michigan Water Science Center's Lake Water Clarity Interactive Map Viewer – a free on-line resource that allows users to view the water transparency of thousands of inland lakes in Michigan. The site provides statewide data layers with predicted Secchi-disk transparency and corresponding trophic state index (TSI) values for Michigan inland lakes.

The interactive map viewer is an advanced remote sensing application that has effectively utilized the data collected over the years by MiCorps Cooperative Lakes Monitoring Program volunteer water quality monitors to develop and calibrate a predictive water transparency model. In a state with over 11,000 inland lakes, the application allows users to glean an accurate glimpse of probable lake water clarity for many more lakes than have been directly monitored by CLMP volunteers or lake science practitioners.

To view available water transparency predictions for Michigan inland lakes of greater than 20 acres without interference from clouds, cloud shadows, dense vegetation or shoreline, point **your web browser** to <http://mi.water.usgs.gov/projects/RemoteSensing/index.html>.

The DEQ Coastal and Inland Waters Permit Information System (CIWPIS)

A Valuable Tool for Well Informed Lakefront Property Owners

The Michigan Department of Environmental Quality (DEQ) is the state regulatory agency responsible for the issuance of permits for various projects that may impact Michigan's environment. Various divisions within the DEQ issue a wide variety of permits annually as required by state statute and/or based on agency requirements to grant authority to conduct certain activities.

Readers of The Michigan Riparian and ML&SA members may be interested in searching for and viewing various permits issued to conduct projects on or near coastal areas or inland waterways, including inland lakes and streams.

The **Coastal and Inland Waters Permit Information System (CIWPIS)** is an on-line resource maintained by the DEQ that allows users to conduct specific searches for permits issued within their area. The system allows searches to be conducted using the date, county, township, name of permit applicant and/or affected waterbody name. The site also allows users to search for and view upcoming public hearings and newly received permit applications.

To view the DEQ CIWPIS on-line system, visit www.deq.state.mi.us/ciwpis/.



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



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

Dear MWA Members, MWA Lake Association Members and Friends,

Please be aware that Public Act 98 is now law. There are a number of topics that relate directly to Michigan riparians, especially Sec. 30101a (see below). For the complete act go to this link: <http://www.legislature.mi.gov/documents/2013-2014/publicact/pdf/2013-PA-0098.pdf>. Note: your local government may require different permits than the state.

This December your MWA board of directors is meeting with Natural Resources Commission Chair J.R. Richardson and DNR Director Keith Creagh. We will discuss Public Act 98 and review two pieces of pending legislation regarding funds to fight invasive species on our inland lakes and streams and prevent the spread of invasive species to Michigan's publicly accessible bodies of water.

We met with Joe Bondra and Dick Pinagel of Michigan Aquatic Managers Association this September and were surprised to learn that Michigan is the No. 2 state in the USA regarding spending to control invasive species. Florida spends over 40 million dollars a year and Michigan spends over 20 million dollars. The difference is that the burden in Michigan is left primarily to the private sector (read pg. 18 in summer issue of *The Michigan Riparian*) while in Florida, the State government shares much of the burden.

Sincerely,
Bob Frye, *Michigan Waterfront Alliance,*
President

**Act No. 98, Public Acts of 2013,
Approved by the Governor, July 2, 2013**

Sec. 30101a. For the purposes of this part, the powers, duties, functions, and responsibilities exercised by the department because of federal approval of Michigan's permit program under

section 404(g) and (h) of the federal water pollution control act, 33 USC 1344, apply only to "navigable waters" and "waters of the United States" as defined under section 502(7) of the federal water pollution control act, 33 USC 1362, and further refined by federally promulgated rules and court decisions that have the full effect and force of federal law. Determining whether additional regulation is necessary to protect Michigan waters beyond the scope of federal law is the responsibility of the Michigan legislature based on its determination of what is in the best interest of the citizens of this state.

Sec. 30103. (1) A permit is not required under this part for any of the following:

- (a) Any fill or structure existing before April 1, 1966, in waters covered by former 1965 PA 291, and any fill or structures existing before January 9, 1973, in waters covered for the first time by former 1972 PA 346.
- (b) A seasonal structure placed on bottomland to facilitate private noncommercial recreational use of the water if it does not unreasonably interfere with the use of the water by others entitled to use the water or interfere with water flow.
- (c) Reasonable sanding of beaches to the existing water's edge by a riparian owner.
- (d) Maintenance of an agricultural drain, regardless of outlet, if all of the following requirements are met:
 - (i) The maintenance includes only activities that maintain the location, depth, and bottom width of the drain as constructed or modified at any time before July 1, 2014.
 - (ii) The maintenance is performed by the landowner or pursuant to the drain code of 1956, 1956 PA 40, MCL 280.1 to 280.630.
- (e) A waste collection or treatment facility that is ordered to be constructed or is approved for construction under state or federal water pollution control law, if constructed in upland.
- (f) Construction and maintenance of minor drainage structures and facilities which are identified by rule promulgated by the department pursuant to section 30110. Before such a rule is promulgated, the rule shall be approved by the majority of a committee consisting of the director of the department, the director of the department of agriculture and rural development, and the director of the state transportation department or their designated representatives. The rules shall be reviewed at least annually.
- (g) Maintenance of a drain that either was legally established and constructed before January 1,

1973, pursuant to the drain code of 1956, 1956 PA 40, MCL 280.1 to 280.630, except those legally established drains constituting mainstream portions of certain natural watercourses identified in rules promulgated by the department under section 30110, or was constructed or modified under a permit issued pursuant to this part. As used in this subdivision, "maintenance of a drain" means the physical preservation of the location, depth, and bottom width of a drain and appurtenant structures to restore the function and approximate capacity of the drain as constructed or modified at any time before July 1, 2014, and includes, but is not limited to, the following activities if performed with best management practices:

- (i) Excavation of accumulated sediments back to original contours.
- (ii) Reshaping of the side slopes.
- (iii) Bank stabilization where reasonably necessary to prevent erosion. Materials used for stabilization must be compatible with existing bank or bed materials.
- (iv) Armoring, lining, or piping if a previously armored, lined, or piped section is being repaired and all work occurs within the footprint of the previous work.
- (v) Replacement of existing control structures, if the original function of the drain is not changed and the original approximate capacity of the drain is not increased.
- (vi) Repair of stabilization structures.
- (vii) Culvert replacement, including culvert extensions of not more than 24 additional feet per culvert.
- (viii) Emergency reconstruction of recently damaged parts of the drain. Emergency reconstruction must occur within a reasonable period of time after damage occurs in order to qualify for this exemption.
- (h) Projects constructed under the watershed protection and flood prevention act, chapter 656, 68 Stat. 666, 16 USC 1001 to 1008 and 1010.
- (i) Construction and maintenance of privately owned cooling or storage ponds used in connection with a public utility except at the interface with public waters.
- (j) Maintenance of a structure constructed under a permit issued pursuant to this part and identified by rule promulgated under section 30110, if the maintenance is in place and in kind with no design or materials modification.
- (k) A water withdrawal.
- (l) Annual installation of a seasonal dock or docks, pilings, mooring buoys, or other mooring structures previously authorized by and in accordance with a permit issued under this part.



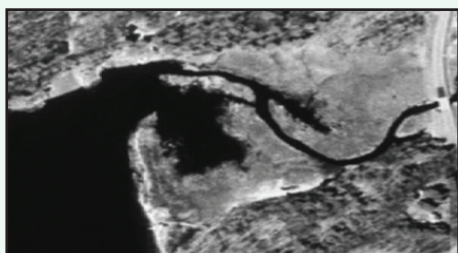
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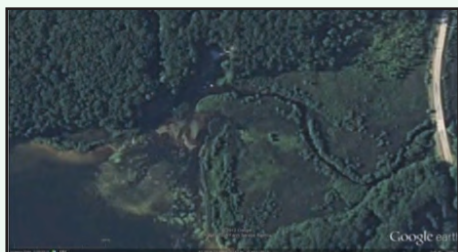
What Will Be the Future of Duck Creek and Duck Lake?

Duck Lake is spring-fed and Duck Creek enters Duck Lake on the east side of the lake. For the last two decades, the mouth of Duck Creek has been gradually filling up with muck and sediment to the point that the creek is no longer navigable from Duck Lake.

Twenty years ago small fishing boats could navigate several hundred yards up Duck Creek past Nestrom Bridge to a boat launch. None of that is possible today. The two aerial photos below, one from 1997 and one from 2010 show the impact of sediment and muck deposits. Two properties in this area have become completely inaccessible by water.



Duck Creek entering Duck Lake 1997



Duck Creek 2010

It has been estimated that over 6,000 cubic yards of sediment and muck have accumulated at the mouth of Duck Creek. Heavy aquatic vegetation has encumbered the east end of the lake even more.

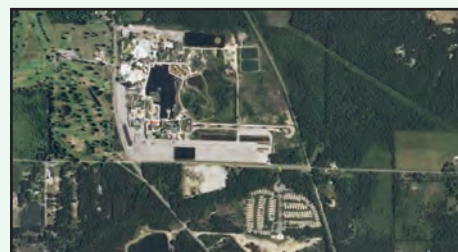
The Duck Creek Watershed that feeds Duck Creek is approximately 22 square miles in size and runs east to west approximately 10 miles from Lake Michigan to just past U.S. 31 on the east. A detailed report of the watershed, "Duck Creek Watershed Management Plan" was published this February by the Muskegon Conservation District and the Annis Water Resources Institute of GVSC with the aid of the Duck Creek Watershed Association.

The report is complete with historical information, outlining current and potential future problems, as well as preventative actions

to take for watershed improvement. It is several hundred pages in length and will take a period of time to fully review. It is important to note the high priority of pollutants identified in section 3.6-sedimentation caused by human alterations and temperature pollution. Although Duck Lake and Duck Creek are a state designated Type F trout lake and stream, it has been many years since trout populations have flourished. Warm water discharges in the watershed have negatively impacted the cold water fisheries. Section 4.2 of the report (Goals for the watershed, Objective 2.1) "Abate as necessary the warm water contributions from all impervious services including road crossings, parking lots and storm water infrastructure, with specific attention given to operations at the Michigan Adventure Amusement Park."

The history of Michigan Adventure dates back to the late 1950s when it was a small petting zoo. It grew steadily over the years to become Michigan's largest amusement park. Attendance that was once measured in the thousands on an annual basis in the 1960s hit 400,000 in 2002, 550,000 in 2005 and over 900,000 currently. The park has 53 rides. Across the street from the park is a new RV resort with room for 156 RVs. Aerial photos of the now 250-acre park reveals approximately 28 acres of paved parking for 300 cars and over 40 acres of paved amusement park. Local owners sold the park to Cedar Fair in 2001 and the park was again sold and purchased by a major New York private equity firm in 2010. In the early 2000's Muskegon County extended its water and sewer service to Whitehall Road past the amusement park. Michigan Adventure chose to hook up to the water service but not the sewer service. Michigan Adventure has its own on-site sewage treatment system, so company officials have said they don't need a connection with city sewers. The park's on-site sewer system eventually filters into the Duck Creek watershed. The oil and salt pollution from thousands of cars each week, and the runoff from over 60 acres of concrete, as well as the sanitary pollution of 900,000 visitors is being processed and eventually filters into the Duck Creek Watershed. Regardless of the cause, which no doubt will be highly debated, the mouth of Duck Creek at Duck Lake over the last 15 years has filled up with muck and aquatic vegetation. Wouldn't it just make common sense for the park to use a municipal waste system if it is available?

Editor's Note: Duck Lake, located in Muskegon County, was featured as the cover story in this summer's issue of The Michigan Riparian. Dave Pequet, author of "Duck Lake, a Muskegon County Treasure", has submitted a follow-up article.



Michigan Adventure and RV Park 2010

About the author:

David W. Pequet

Dave has been a Board member of The Duck Lake Riparian Association for 12 years and is its current president. He lives in Chicago and owns an investment management firm. Dave and his wife have owned a home on Duck Lake for 28 years. His first year on Duck Lake was 1963 as a Boy Scout at Camp Shawondossee. He was a staff member at Shawondossee in 1968, the year the camp closed.

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Article References:

Duck Lake Watershed Management Plan, Feb 2013

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WARNING!

Invasive Crayfish Should Not be Used as Bait

Crayfish sold alive in pet shops, grocery stores, and live food markets are not intended for use as bait or release into lakes and rivers. Many are red swamp crayfish – an aggressive invasive species that is nearly impossible to eradicate.

**Posted on August 19, 2013 by Dan O'Keefe,
Michigan State University Extension**

In the Deep South, crawfish boils have long been popular at social gatherings. The crawfish, or crayfish as we tend to call them in the upper Midwest, are cooked alive in much the same way lobsters are with one exception—the crawfish are cooked with cayenne pepper, other spices, corn, and potatoes to provide a spicy one-pot feast.

Crawfish boils, and to a lesser extent other Cajun dishes like crawfish etouffee, have become so popular that an aquaculture industry has grown to meet the demand. The species of choice is the red swamp crayfish, which is native to Gulf Coast states and the lower Mississippi River north to the southern tip of Illinois.

Live crayfish can be found at grocery stores and gas stations in most any small southern town, and they are also becoming more available in northern states. This might be encouraging for those of us who love spicy seafood, but there is one downside—red swamp crayfish is not native to the Great Lakes basin.

The red swamp crayfish is also highly aggressive and large relative to many native crayfish, which explains why this species quickly became more abundant than native crayfish in places like Pine Lake in Washington. It can also carry crayfish fungus plague and burrow into river banks, de-stabilizing shorelines and smothering in-stream habitat with sediment.

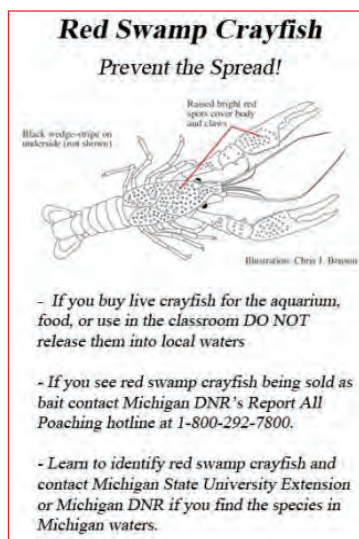
This is why the Michigan Department of Natural Resources officials were concerned when anglers were found using red swamp crayfish as bait off a west Michigan pier this summer. It is illegal to import any crayfish into Michigan for use as bait; however, red swamp crayfish remain available for sale. While it remains legal to buy live red swamp crayfish to eat, to study, or to display in an aquarium, this species could be a real threat to the environment if released into the wild. It could also cost taxpayers a small fortune to control.

In Wisconsin, red swamp crayfish were found in two ponds in residential neighborhoods a matter of miles from Lake Michigan. It seemed like a best-case scenario in terms of potential to eradicate the pests before they spread. The ponds were small and the crayfish apparently had not spread, so eradication was, at least theoretically, possible.

Unfortunately, the red swamp crayfish proved exceedingly difficult to combat. Over the course of two years, managers spent \$250,000 in attempts to eliminate the crayfish from two ponds. Bleach was used in one pond to kill all aquatic life, but some red swamp crayfish were able to ride out the treatment in burrows. Another pond was drained and treated with an insecticide, and when that failed to eliminate crayfish, the pond was filled in.

Michigan anglers, and others, need to do their part to prevent red swamp crayfish from ever becoming established in Michigan waters. Red swamp crayfish may taste great, but they could be the next addition to the long list of destructive Great Lakes invaders if prevention efforts fail.

This article was published by Michigan State University Extension. For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).



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Activities traditionally associated with the Michigan Lake and Stream Associations annual conference such as our annual banquet, the annual review of riparian rights and water law, our awards ceremony, silent auction and the 50-50 raffle will be conducted as usual within the larger context of the overall convention.

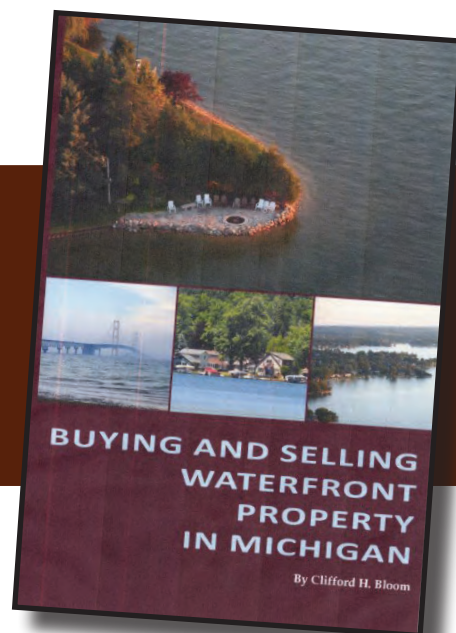
To learn more about the first-ever Michigan Inland Lakes Convention, visit the **Michigan Inland Lakes Partnership** website at <http://michiganlakes.msue.msu.edu>.

Information regarding the convention will be posted to this website as specific details become available later this fall and early winter. Look for more information regarding the convention in the Winter 2014 edition of The Michigan Riparian which will be out in late January or early February.

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The Michigan Lake & Stream Associations, Inc. ("ML&SA") is pleased to announce its new book entitled *Buying and Selling Waterfront Property in Michigan* by Grand Rapids Attorney Clifford H. Bloom. This is the second book from ML&SA, the first being the 2009 book called *Michigan Lake Associations—The Nuts and Bolts* (also authored by Cliff Bloom).

This new book is a "must" for anyone who is interested in waterfront property in Michigan. The list of people who should purchase the book includes not only riparians (and would be riparians) but also realtors and real estate agents, attorneys, government officials, surveyors and teachers. This book is a "how to" publication that deals with numerous real estate and waterfront issues, including:

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OF MOSQUITOS AND KILLER BEES

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

There have been many headaches for lakefront property owners in Michigan over the years, particularly with regard to the latest watercraft “toy”. During the 1960’s and 1970’s, the main safety problem on inland lakes was speed boats (with or without water skiers) operated in a fast or unsafe fashion. During the 1980’s, the proliferation of jet skis or personal watercraft struck many riparians as a nuisance and safety hazard. Today, riparians are becoming increasingly concerned about the popularity of “wave boats” (also sometimes referred to as bladder boats, wave runner boats or wakeboard boats). Unfortunately, the impact of wave boats on Michigan inland lakes appears to be dramatically worse than the negative consequences of personal watercraft and conventional speed boats. As one law enforcement officer put it, personal watercraft are mosquitos and problem speed boats are bumble bees, while wave boats are African killer bees!

What is a wave boat? It is a watercraft of speed boat size (or slightly larger in some cases) that uses mechanical means to fill its reservoirs (sometimes called “bladders”) with water or other liquid to increase the boat’s weight and mass, and to raise or lower the boat in the water. Depending upon how a wave boat is operated, it can throw a tremendous wake and create huge artificial waves. In fact, such boats are actually designed and intended to throw huge waves. That is part of the fun associated with these watercraft – they create waves that can be “surfed” by water skiers or wake boarders.

There are three major concerns regarding the use of wave boats in inland lakes. First, on many lakes, they have had severe negative environmental impacts. If one of the purposes of a wave boat is to create huge waves, that goal has proven all too successful! On some lakes, wave boats have caused considerable erosion along the shoreline and banks of the lake. Many riparian landowners have had to install new seawalls, rocks and other shoreline protection devices to guard against the huge waves and wakes intentionally generated by wave boats. Some riparians have even had to install larger seawalls to guard against increased erosion as their existing seawalls are not adequate. Wave boats also keep the water “churned up,” particularly in shallower areas, thus disturbing plant life, fish, aquatic insects and other natural lake organisms.

The second negative impact of wave boats is property destruction (beyond the negative impacts of erosion). Riparians throughout the state have reported instances of moored boats being swamped, boat tether lines snapping, adjoining anchored boats being slammed into each other and similar property destruction caused by the huge waves generated by wave boats.

The third and final problem associated with wave boats involves safety. There have been reports throughout Michigan of people

being thrown off swim rafts and even other boats due to the waves generated by a wave boat passing too close. The risk for bodily injury and even death to others associated with wave boats passing too close to (or even running into) other boats, swim rafts, fishing boats, or swimmers is obvious.

Can anything be done to solve the problems associated with wave boats? Many believe that wave boats should only be operated on the Great Lakes (and at some distance from the shore) or in very large inland lakes far away from the shore. However, there is no statute in Michigan that regulates or treats wave boats differently than conventional speed boats or pontoons. For decades, it has been the general policy of the State of Michigan not to “discriminate” against any particular type of boat or watercraft. A cynic might say that state officials believe that any type of substantial regulation of watercraft (including even potentially dangerous watercraft) would adversely impact tourism.

It is likely that the most practical way of minimizing the adverse impacts of wave boats is to vigorously enforce state boating laws. For example, any type of motor or power boat operated at greater than a slow or no-wake speed must remain at least 100 feet away from the shore, a dock or swim raft, a marked swim area, a swimmer or an anchored vessel. Both careless and reckless uses of a watercraft are illegal. Water skiers and wakeboard users must also generally remain at least 100 feet away from any dock, swimming area or an anchored vessel. If such regulations are vigorously enforced, it could minimize the dangerous aspects of wave boats and even lessen shoreline erosion, but not completely solve the problem.

In addition, associations for lakes with heavy power boat usage (including potentially wave boats) should consider “purchasing” extra sheriff marine safety patrol hours. That is a fairly common practice for many populated lakes throughout Michigan. The physical presence of law enforcement officials on a given lake normally does have a big impact upon boating speed and safety.

Some owners of wave boats argue that it is not fair to “profile” or “discriminate against” a particular type of watercraft. However, it cannot be denied that the impacts of wave boats on inland lakes in Michigan (particularly smaller lakes) can be much more severe than conventional speed boats. Few would argue that it would be appropriate to use a huge cabin cruiser or a “cigar” power boat in a small inland lake. Highly specialized race cars of the type used at the Indianapolis 500 or the Daytona 500 races could be driven on the streets of a residential subdivision, but that certainly would not be safe or reasonable! The problems associated with wave boats are different from other watercraft, not only in kind but also in magnitude and intensity. ■■■

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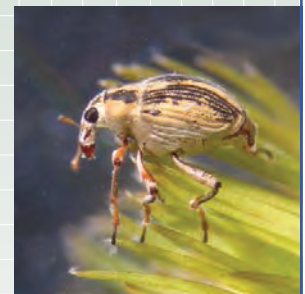
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