

February 2000

# THE MICHIGAN **RIPARIAN**

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

Published Quarterly – February, May, August and November



**OJIBWA (Chippewa) INDIAN PICTOGRAPHS  
AGAWA BAY—EAST LAKE SUPERIOR SHORE**

# OJIBWA INDIANS AT LAKE SUPERIOR — “A LOOK INTO THE PAST”

By Don Winne



The pictures on the front of this issue of the Michigan Riparian were taken by Bruce Bonnell when Bruce and Pearl Bonnell and I stopped at Agawa Bay in 1992 while on a trip around Lake Superior.

Agawa Bay is at the east shore of Lake Superior and about 70 miles north of Sault St. Marie. The paintings on the sheer cliff of the Bay are attributed to the Ojibwa Indians,

and were painted prior to the settlement of the Northwest Territory.

The Ojibwa Indians came from the north shores of Lake Superior and settled along the rapids of the St. Mary's River at what is now Sault St. Marie. They seemed to have no agriculture and were primarily hunters and nomads. They were called Ojibwa by neighboring Indian Tribes. Their name was later corrupted by the French and British into the word "Chippewa." Chippewa tribes were spread across the Great Lakes basins including southern Canada and as far west as the Dakotas.

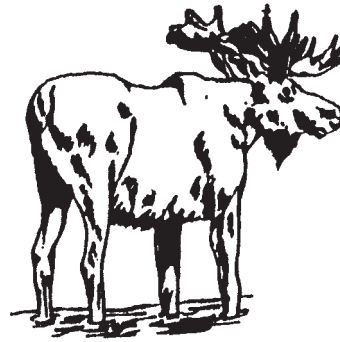
The Iroquois Indians, made up from numerous tribes from northern New York, and joined together into the Five Nations, included members from the Seneca, Mohawk, Oneida, Onondaga, and Cayuga tribes. They fought other tribes in the New York and Great Lakes area (1640-1700) for the purpose of keeping the trade in furs open to the British. Other Indian tribes in the Great Lakes area included the Hurons southeast of Georgian Bay in Canada, the Pottawatomi in Southwest Michigan, the Miami in northeast Indiana, and the Menominee in Green Bay, Wisconsin. The Iroquois drove the Ojibwa from the Sault area until 1662, when they soundly defeated the Iroquois and drove them to the East.

The Chippewa had many brave warriors and were feared and respected by all the other tribes around the Great Lakes. Some settled at Duluth while others spent summer months in the Saginaw Bay area. Some, however, stayed all year at the Sault subsisting on whitefish which were easily caught in the St. Mary's rapids.



STURGEON

Fish were very important in the economy of the Chippewa. The principal ones caught were whitefish and sturgeon. The sturgeon were speared in the vicinity of the Islands of Lake Huron during the summer, however, it was the abundance of the whitefish at the rapids that attracted a large number of people to the banks of the stream. It is at the foot of the rapids, and even among the boiling waters that extensive fishing is carried on, from spring until winter. The land animals sought by the Indians included deer, hare, elk, moose, buffalo, beaver and migratory birds. Parrot said that a band of Chippewa made an extraordinary catch of more than twenty-four hundred moose on Manitou Island in the winter of 1670-71.



Alexander Henry, a British Fur Trader visiting both Fort Michilmackinac and Sault St. Marie between 1760 and 1764, describes some of the life as it was lived at this time.

*"The amusements consisted chiefly in shooting, hunting, and fishing. The neighboring woods abounded in partridges and hares, the latter of which is white in winter. And the lake is filled*

*with fish, of which the most celebrated are trout, whitefish, and sturgeon. Trout are taken by making holes in the ice in which are set lines and baits. These are often left for many days together, and in some places at the depth of fifty fathoms; for the trout having swallowed the bait, remains fast and alive until taken up. This fish, which is found of the weight of from ten to sixty pounds and upward, constitutes the principle food of the inhabitants. When this fails, they have recourse to maize, but this is very expensive.*

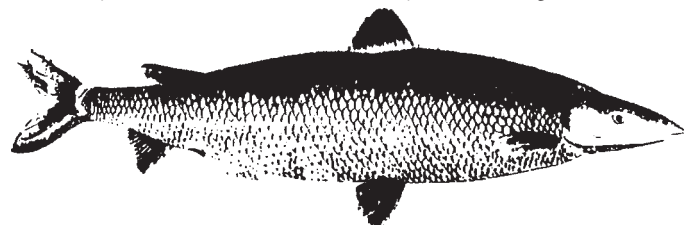
*High prices for grain and beef led me to be very industrious in fishing. I usually set 20 lines and visited them daily, and often found at every visit fish enough to feed a hundred men. Whitefish, which exceeds the trout as a delicious and nutritive food, are here in astonishing numbers. In shape they somewhat resemble the shad, but their flavor is perhaps above all comparison whatever. Those who live on them for months together preserve their relish to the end. Whitefish is used for bait for trout, but they are much smaller than trout, but usually weigh, at Michilmackinac, from three to seven pounds."*

Fishing for whitefish at St. Mary's rapids is described as follows:

*"The method of taking them is this: each canoe carries two men, one of whom steers with a paddle, and the other is provided with a pole ten feet in length, and at the end of which is a scoop-net. The steersman sets the canoe from the eddy of one rock to that of another; while the fisherman in the prow dips his net and sometimes brings up at every succeeding dip as many as it can contain. The fish are often crowded together in the water in great numbers, and a skillful fisherman in autumn will take 500 in two hours.*

*The fishery is of great importance to the surrounding Indians, whom it supplies with a large proportion of their winter's provision; for having taken the fish in the manner described, they cure them by drying in the smoke, and lay them up in large quantities."*

Information Source: The quotes are from the book entitled, ATTACK AT MICHILMACKINAC 1763, a report on the "Travels of Alexander Henry, 1760-1764, and edited by David A. Armour. Publisher, I. Riley, New York. Pages cited 34-38.



WHITEFISH

"THE MICHIGAN RIPARIAN (ISSN 0279-2524) is published quarterly for \$2.00 per issue by the Michigan Riparian Inc., P.O. Box 249, Three Rivers, Michigan 49093. Periodicals postage paid at Three Rivers, Michigan and additional mailing offices."

The Michigan RIPARIAN is the only magazine devoted exclusively to protection, preservation and improvement of Michigan waters and to the rights of riparian owners to enjoy their waterfront property.

The Michigan RIPARIAN is published quarterly and is mailed to subscribers during February, May, August and November.

**THE MICHIGAN RIPARIAN** magazine is owned and published by the Michigan Riparian Inc., a Michigan non-profit corporation.

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**ADVERTISING DEADLINE:** No later than 10th of the month preceding month of publication.

**ADVERTISING RATES:** Sent upon request.

**SUBSCRIPTION RATES:**

Individual Subscription ..... \$8.00  
Group Rates: 10 to 49 Subscriptions ..... \$7.00  
50 or more, or all members of a Lake Association ..... \$6.00

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Printed by J.B. Printing, Kalamazoo, MI 49007.

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**EDITORIAL**

**THE IMPORTANCE OF LOCAL CONTROL**



Don Winne

In one of the saddest episodes of Michigan legislative history, the Legislature severely undercut the sacred principle of local control by passing several special interest bills during its 1999 legislative session. Based on the new legislation, local governments can no longer regulate huge intensive livestock operations (particularly, large out-of-state owned corporate hog farms), set residency requirements for municipal employees, or set local school calendars around Labor Day. Every one of these anti-local control bills was pushed through the Legislature by a small group of special interest lobbyists. Many municipal officials, environmental groups and ordinary citizens are so

upset with the assault upon local control that they might even attempt to get an initiative on the state-wide ballot in order to prevent future legislative raids on local control.

Why do the special interest groups lobby the Michigan legislature to take power away from local government and place it in the hands of state governmental agencies? Because they know that the state has been very lax in enforcing various acts passed by the Legislature which have placed regulatory power at the state level. A good example is the Wetlands Protection Act, Act 203.P.A of 1979. It was hailed across the country as one of the best state wetlands protection acts yet passed. It provided that local government could adopt even more restrictive wetland protection ordinance than that at the state level. This didn't last long. The legislature amended the Act in 1992, to take power away from townships. As a result, practically no township has been able to give any consideration to wetland protection ordinances since that time. The State Legislature has declared that wetlands are essential to the survival of natural resources, but most applications to destroy them are permitted with impunity.

The state has declared that it does not have the power to regulate the overcrowding of lakes by boats and marinas. Only the local government can do so. If zoning power is taken away from townships and counties, the door is left wide open for developers to do their thing in lakes and streams unrestrained.

If we don't come to the aid of local government we will all be victimized by the failure of state government to protect us from all kinds of abuses at the hands of the greedy and selfish.

Each time that the Legislature is successful in undercutting one aspect of local control, it will make it easier for legislation in the future to undermine other areas of local control. I have no doubt that given the success of the anti-local control forces in the Legislature in 1999, developer groups will undoubtedly seek their own legislative exemptions from local zoning in the near future—how will Riparians feel if and when local governments lose the right to enact antifunneling regulations or the ability to require large minimum lot sizes or clustering or similar zoning techniques? As Benjamin Franklin said, if we do not hang together, surely we will all hang separately! Let your local Michigan House and Senate representatives know your feelings about local control.

Best Wishes for 2000!

*Donald E. Winne*

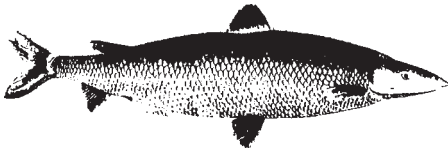
*The Michigan Riparian* welcomes letters to the editor, articles for publication, comments, suggestions, and article ideas. If you wish to write an article or just have an idea for one, it would be best to write us a short note or give us a call to discuss it.  
—The Editor

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# What Happened To the Great Lakes Fishery During the Last 150 Years?

(The following article was written by Jack D. Bails for the MICHIGAN NATURAL RESOURCES MAGAZINE, May-June 1986 issue.) MDNR has given permission to print this article.



WHITEFISH

Michigan's Great Lakes fishery has changed dramatically in the last 150 years. Once abundant species have been eliminated, others

now exist only in isolated populations. Numerous new species have found their way into the Great Lakes; some by accident, others through planned introduction. A significant number of resilient, native fish species have withstood the impacts of man and remain plentiful even in the face of pollution, pressures from introduced species, commercial exploitation and loss of habitat.

Substantial investments by the Great Lakes states, the federal governments of Canada and the United States, and the Province of Ontario in fisheries management during the last three decades have overridden major man-made problems to make this resource the most valuable freshwater fishery in the world. While it remains vulnerable, the Great Lakes fishery has the potential of increasing in value as a food and recreational resource for future residents of the Great Lakes Region, and for the tens of thousands of tourists already attracted from around the world by this unique natural resource.

To better understand both the vulnerability of the Great Lakes and the need for continued protection and management of this resource, one need only reflect on the history of the fishery. As American philosopher George Santayana put it so well: "Those who cannot remember the past are condemned to repeat it." However, for those who may despair when confronted with yet unforeseen threats to the Great Lakes, there is comfort knowing that seemingly insurmountable catastrophes of the past have been successfully overcome.

Before the 1800s, Great Lakes fish populations were isolated from the Mississippi and Hudson River drainages. Also, the upper four Great Lakes were isolated from the Atlantic Ocean by the Niagra Falls escarpment between Lake Erie and Lake Ontario. Although native peoples of the Great Lakes region harvested fish from the Great Lakes and tributary streams, fish populations showed no significant signs of exploitation until the mid-1800s.

## FISH EXPLOITATION BEGINS IN EARNEST IN 1850

Early fur-trading companies in the Upper Great Lakes began to contract with commercial fishermen for barrels of fish in the 1800s, but it was not until the region's population began to boom in the 1850s that exploitation began in earnest. Over harvesting of fish stocks followed the path of highly effective European pound nets, which gained favor over crude gill nets and seines. These more productive nets were first introduced in Lake Ontario in about 1836, and in all of the Great Lakes by the 1860s. Fear of declining Great Lakes fish stocks, particularly white fish, prompted our state's governor and legislature to create the Michigan Fish Commission in 1873. Early efforts of the Commission were focused on attempts to replenish depleted fish populations through the use of hatchery reared whitefish. Estimates from historical records indicate that the commercial catch in Michigan's Great Lakes waters grew from

just under two million pounds in 1830 to more than 30 million pounds in 1890.

Innovations introduced to the commercial fishery, such as the steam tug in 1860 and the power gill net filter in 1891, placed further pressure on the declining stocks of high-value Great Lakes fish populations. By 1900, historical records are replete with pleas from the Michigan fish Commission to curb that over-exploitation through regulation. The following report from Walter D. Marks to the Michigan Legislature (Tenth Biennial Report of the Michigan Fish Commission, 1892) illustrates the concern.

## ALARM SOUNDED IN 1892

*"If the State is willing to devote its money to the restocking king of its waters, it should also take steps by the passage of just laws to protect this work, and fishermen who are not actuated by selfish motives should be willing to be*

*governed by just and fair laws for the protection and preservation of the fisheries. Let the fisherman understand that the public proprietorship in these fisheries is paramount to any right he may exercise or enjoy in them, and that it is against public policy that he should pursue methods of fishing which will in his lifetime ruin the industry he follows."*

While over-exploitation threatened the fishery resource head on, indirect changes wrought by man in the Great Lakes watershed were also taking their toll-in both water quality and fish habitat. Clear-cutting of Michigan's vast northern forests, initiated in the late 1800s, triggered siltation and raised stream temperatures. Habitat destruction was also brought about by log rafting and saw mill operations. These forces seriously depressed both the inland fishery resource in the northern two-thirds of Michigan and Great Lakes fish species, which spent part of their life in tributary streams and in or near stream mouths along the Great Lakes shoreline. In addition, mining activities in the Upper Peninsula left some once productive shoreline habitat filled with waste material.

## CLEAR CUTTING OF FOREST DESTROYS STREAM AND LAKE HABITAT

By the turn of the century, it was clear that the once valuable and relatively stable fishery resources of the Great Lakes were undergoing rapid change. Once abundant near-shore populations



LAKE TROUT

of herring, whitefish, lake trout and blue pike had been seriously depleted and fishing effort was shifting to less valuable species and to more isolated offshore stocks. While later declines in

fish abundance and environmental problems appear to have been more dramatic, this initial period of fishing exploitations, had set the stage for the drastic changes that would occur within the next 60 years.

Unable to convince the legislature that stricter laws were needed to protect the Great Lakes fisheries, the Michigan Fish Commission turned most of its attention and resources to inland lakes and streams. In fact, the 1905 appropriation for the commission

(Continued on page 11)

(Continued from page 10)

contained a prohibition on expenditures for so-called commercial fishes, or for work in the Great Lakes—then considered ‘commercial fishing waters’. For the next ten decades, Michigan’s investments in the Great Lakes fishery was minimal and that neglect had a devastating impact on the entire fishery resource.

Exploited heavily at first were those fish populations nearest the human population centers of the Great Lakes. In Lake Erie, the maximum catches of whitefish, herring and lake trout occurred before 1900. The once abundant runs of whitefish (up the Detroit River, Lake St. Clair and St. Clair River from Lake Erie) had been all but eliminated by 1920. The shrinking fishery began to zero in on the less valuable but more plentiful secondary species of sauger, blue pike, walleye and yellow perch in Lake Erie during that period after the turn of the century. As the population of the Great Lakes region grew and as transportation to markets improved, the fishery spread into the Upper Great Lakes of Huron, Michigan and Superior. The familiar pattern of decline of the most valuable species, with resulting concentration of effort on the more abundant secondary species, was evidenced in each lake. Not unexpectedly, populations of exploited species fluctuated throughout the Great Lakes. Unfortunately, however, catch figures neither truly nor immediately reflected actual fish abundance. Increased fishing effort, improved fishing vessels, and increasingly more efficient gear sustained the harvest even in the face of declining populations.



**MICHIGAN STURGEON POPULATION CRASH IN 1900**

The collapse of entire fish populations was common throughout the Great Lakes in the first half of the present century. Lake sturgeon populations in Michigan waters of the Great Lakes crashed from a high of 4.3 million pounds of catch in 1880 to less than 150,000 pounds by 1900. Today, the sturgeon is listed as threatened throughout the Great Lakes. The blue pike, a close relative to the walleye and once a dominant predator in Lake Erie and Ontario, produced more than 25 million pounds commercially from Lake Erie in 1937. By the 1950s, this species yielded its last significant commercial catches from Lake Erie. It is now considered extinct,

**LAKE HERRING NO LONGER A MAJOR SPECIES IN LAKES ERIE AND ONTARIO**

Lake Herring, too, were progressively fished down in each of the lakes. The first crash of this species occurred in Lake Erie in 1924. Except for brief periods of recovery, lake herring populations continued their nose-dive in both Lake Erie and Lake Ontario from 1920s to the 1950s. They are no longer a major species in either lake. In lakes Michigan and Huron, lake herring suffered a similar fate, although somewhat later. In the early 1950s, more than 8 million pounds of herring were taken each year from Lake Michigan. A decade later, the catch had dropped to less than 50,000 pounds a year. During the 1930s, lake herring harvests in the U.S. waters of Lake Huron averaged more than 5 million pounds annually. By 1960, the average catch from those waters was less than 50,000 pounds a year. The commercial fishery for herring in lakes Michigan and Huron is now closed as a measure to rebuild the limited remaining stocks. The peak period for herring production in the U.S. waters of Lake Superior took place in the 1940s, when more than 15 million pounds were taken annually. Quotas now limit the herring harvest there. Other species

followed similar down-trends in all three lakes. In extreme cases, certain species vanished.

In retrospect, it is easy to second-guess management decisions of the time. The population declines often were accompanied by a variety of other simultaneous changes. In Lake Erie and Lake Ontario significant habitat changes undermined the fishery. Pollution associated with industrialization of the Great Lakes basin at the time degraded water quality to an alarming degree. Expanded agricultural activity accelerated erosion and sedimentation. Hydroelectric construction on nearly all major watershed in lakes Ontario and Erie, and on most rivers flowing from Michigan’s Lower Peninsula into lakes Michigan and Huron, reduced or destroyed former spawning areas for many species. Those changes along with the growing demand for fish, the competition from introduced species such as smelt, alewife, and carp, and the quantum advances in the efficiency of fishing gear (from cotton to linen, to nylon, and finally to monofilament nets) combined to divert attention from the need to initiate meaningful controls on the catch and effort of the commercial fishery.

**SEA LAMPREY INVADES GREAT LAKES IN 1921**

The invasion of the sea lamprey beginning in 1921 in Lake Erie further compounded the issue, notably for whitefish and lake trout whose population collapses closely paralleled the migration of this new predator in all the Upper Great Lakes. It is now surmised that the sea lamprey took hold in Lake Ontario following the opening of the Erie canal from the Hudson River in 1819, and in Lake Erie by moving through the Welland Canal built to bypass Niagara Falls in 1829.

There is little doubt that pollution, habitat destruction, dams introduced species, and the invasion of the sea lamprey all figured prominently in the demise of native species in the Great Lakes. Unfortunately, these factors were too often used as an excuse for not exercising appropriate controls on the rate of commercial production.

**GREAT LAKES FISHERY COMMISSION ESTABLISHED IN 1955**

Growing concern among the Great Lakes states, the Province of Ontario and the two federal governments about the declining Great Lakes fisheries in the early 1950s led to the establishment of the Great Lakes Fishery Commission in 1955. As ratified by the U.S. and Canada, the Commission had two major responsibilities: 1) To develop coordinated research programs for shaping management of fish stocks of common concern; and, 2) To mobilize and carry out plans to eradicate or control sea lamprey populations.

Drawing upon the overall direction of the two federal governments, much of the early work of the GLFC was keyed to fisheries research, data collection and efforts to develop lamprey controls. By 1958, development of a selective lamprey-killing chemical (TFM) had proceeded far enough to allow the first application of this lampricide in Lake Superior tributaries. Within three years of those initial treatments, lamprey-wounding rates on Lake Superior lake trout dropped significantly. Also, there was an 80 percent reduction-improvement-in stream counts of the lamprey’s spring spawning runs. By 1972, all known sea lamprey producing streams in lakes Huron and Ontario had been chemically treated at least once. Reduction of this parasite in the Great Lakes by as much as 90 percent paved the way for rehabilitation of larger valuable species—notably lake trout, whitefish, and steelhead. However, commercial over-exploitation still posed an immense problem.

In 1967, the Great Lakes Fishery Commission launched a study entitled, “The Ecology and Management of the Walleye in Western

(Continued on page 17)



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*Individuals interested in being the Vice President in any Vacant Region should contact ML&SA President, Richard Brown, or Don Winne, Executive Director.*

# ML&SA NEWS

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Donald D. Winne, Executive Director

### NEW ML&SA MEMBER ASSOCIATIONS

Missaukee Lakes Associations, Missaukee County

Richard A. Morrow, President

Thunder Bay River Watershed Council, Alpena, Montmorency, Presque Isle, Alcona, and Oscoda Counties

James Zavislak, President

### 39<sup>th</sup> ANNUAL ML&SA CONFERENCE

April 28, 29, 30 - 2000

Treetops Resort, Gaylord, Michigan

ML&SA - Lake, Stream and Watershed Associations, Corporations, and Individuals Members

*"COOPERATING TO PROTECT MICHIGAN'S WATER RESOURCES"*

*Conference is open to members and the general public.*

**Friday, April 28, 2000**

**Cooperative Lakes Monitoring Program training sessions**—Secchi Disk, Spring and Summer Phosphorus, Chlorophyll a, Dissolved Oxygen.

**MINALMS will be sponsoring a workshop on "Implementing Lake Management – Moving Beyond Education"** – Committee Lake Management, Township Public Works and Lake Boards. *Exotics* - where, what, and their control, *"Networking with other Associations."* Friday evening will be the great Open Forum session with the experts.

**Saturday and Sunday, April 29 and 30, 2000**

A special session is being planned on the importance of Watershed's; workshops on Aquatic Plant ID and Surveying; Association's Management of their Lake; and Development of an Association Web Page. Other sessions will be held on Water Levels - Cyclical or Man Created; Township Powers; Legal and Legislative issues; Who does what?-MDEQ, MDNR, or County Sheriff; and Land Use. A special "Round Table" discussion is being planned for Sunday on "Controlling Aquatic Plants as viewed by the experts."

### COOPERATIVE LAKES MONITORING PROGRAM

A new pilot program will be introduced in 2000. Testing for Dissolved Oxygen will be introduced to a limited number of associations taking part in the full CLMP. In 2000, the Phosphorus and Chlorophyll testing sites will be increased. For more information call 517.257.3583 or visit the CMP web page at [www.mi-water-cmp.org](http://www.mi-water-cmp.org)

### WEB SERVER FOR LAKE ASSOCIATIONS – ML&SA

ML&SA is now "hosting" web sites for member lake associations who would like to have a Home Page. For more information contact the Technology Committee at [Techcomm@mlswa.org](mailto:Techcomm@mlswa.org). Take time to visit the ML&SA web page at [www.mlswa.org](http://www.mlswa.org). We invite you to visit the web site of the Michigan Waterfront Alliance at [www.mwai.org](http://www.mwai.org).

### ML&SA WELCOMES CORPORATION MEMBERS:

Michigan Chapter of North American Management Society, Patrick Abstract & Title Offices, EnviroScience, Midwest Energy Cooperative, Professional Lake Management, Nauticraft Corporation, and Great Lakes Environmental Center.

*ML&SA wishes to express their appreciation to all individual members.*

#### UPDATE:

ML&SA has already hit a new time high in it's membership for the year 1999.

Nearly 340 lakes, streams/rivers or watersheds are current members.

Plan now to attend the 40th Annual Conference to be held April 28, 29, and 30<sup>th</sup> in the year of 2000.

ML&SA looks ahead to the year 2000 with a new pilot program added to the CLMP.



# Attorney Writes

By Clifford H. Bloom

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## TRESPASS!

“Trespass” is the venturing onto the lands of another without permission. As many riparians well know, trespass is a common problem around lakes.

There are two types of trespass and related legal remedies – criminal trespass and civil trespass. Criminal trespass is what most lay people think of when they consider pursuing legal action against someone for trespass. There are potentially three laws available whereby a trespasser can be prosecuted. First, under state law, trespass is illegal pursuant to several statutes. MCLA 750.552 is the general state statute for trespass. This statute prevents anyone from trespassing upon the premises of another after having been forbidden to do so. Violation of the statute is a criminal misdemeanor offense, punishable by a fine of up to \$50.00 and 30 days in jail or both. There are also several statutes which make it illegal to trespass and to damage property, cut trees, destroy or take crops, etc. Under such statutes, someone who is found guilty of entering the land of another without permission and destroying property is potentially liable for actual damages, and in some cases, even double or triple damages. See MCLA 600.2919, 750.546 and 750.547. Second, some local municipalities (i.e. cities, villages or townships) have their own trespass ordinances. Finally, the Michigan Recreational Trespass Act (MCLA 324.73101 et seq.) (“RTA”) covers trespass involving recreational uses. Depending upon the statute under which a trespasser is prosecuted, conviction can either constitute a criminal misdemeanor or civil infraction offense. The RTA was also amended recently to add “teeth,” such that the penalties have been beefed up significantly.

Unfortunately, many police agencies (i.e. county sheriff departments, city police officers, etc.) and prosecuting officials (i.e. county prosecutors, city or township attorneys, the Michigan Attorney General’s office, etc.) are reluctant to prosecute trespassers—it is simply not a high priority in most jurisdictions. Many law enforcement officials will tell a complaining property owner that they cannot prosecute a trespasser until the offender trespasses a second time. Although under most laws it is not technically true that someone has to trespass a second time before they can be prosecuted, it is true that most laws require some type of

prior notice. For example, MCLA 750.552 requires that the trespass occur after the trespasser has been “forbidden to do so by the owner or occupant” or that the trespasser neglects or refuses to leave when requested by the owner or occupant. The RTA requires that a property be posted with no trespassing signs or at least be fenced prior to a violation occurring, but it does not require any other notice to the trespasser. Some local ordinances do not require any prior notice at all. There are other reasons why law enforcement agencies are often reluctant to prosecute trespassers. First, trespass claims have unfortunately been used as fodder in domestic and neighborhood disputes. Second, it is often difficult for law enforcement officials to determine whether someone has trespassed due to uncertainty about boundary lines – this is particularly true with regards to bottomlands under a lake or upland boundary lines which are in dispute. Third, such disputes often involve one person’s word against another’s – the offender claims that he or she was given oral permission to be on the property while the owner denies that such permission was given. Such disputes are often viewed as more civil law matters with which law enforcement should not become involved.

The other remedy for trespass is a civil lawsuit. In such cases, law enforcement agencies are not involved and the individual property owner must file a lawsuit against a trespasser at his or her own expense. In some cases, the property owner can recover damages, even where little harm has been done to the property involved. See the RTA and MCLA 600.2919, 750.546 and 750.547. In most civil lawsuits for trespass, however, damages are rarely awarded, and the goal of the property owner is to obtain a court order precluding the offender from trespassing again under pain of contempt of court and possibly jail.

Around lakes, the issue often arises as to whether it is trespassing on a riparian’s bottomlands when someone else places a dock, shorestation or raft anchor on the riparian’s bottomlands or walks on the riparian’s bottomlands without permission. Under Michigan law, most riparian property owners own the bottomlands adjacent to their properties toward the center of the lake in a pie-shaped fashion. While both riparians and members of the public have the right to

*(continued on page 21)*

**WALLEYE POPULATIONS  
IN WESTERN LAKE ERIE  
STUDIED—1967**

Lake Erie.” Three prominent scientists—Henry Regier of the University of Toronto, Vernon Applegate of the U.S. Bureau of Commercial Fisheries and Richard Ryder of the Ontario Department of Lands and Forests—were charged with analyzing the causes of failing walleye fish in Lake Erie and with making recommendations for management. Their exhaustive report of study results gained in collaboration with a number of biologists chronicled the history of the Lake Erie fishery and called for a more enlightened management approach to the fisheries of the entire Great Lakes. The trio of scientist-authors captured the concern of many over past neglect.

“The view that a fishery may have little effect on a population or group of populations seems unique to a group of biologists that had some influence over Great Lakes fishery management from 1940 to 1965,” they concluded succinctly. “We know of no other group of biologists anywhere in the world that has held similar views in recent times. We have chosen to go onto this problem in some detail since their advice enshrined a management policy, was still being followed to some extent in 1967.

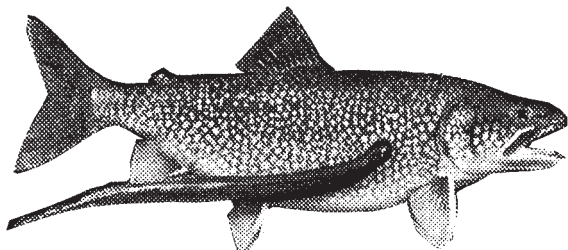
Such unabashed condemnation of their fellow biologists fueled a mild controversy and stirred those with similar views to tackle the difficult problem of placing needed constraints on the kind and amount of commercial fishing effort in the Great Lakes.”

**LAKE MICHIGAN TARGETED FOR  
FISHERY REHABILITATION—1964**

Lake Michigan was targeted for major rehabilitation efforts by the State of Michigan in 1964. This once-valuable fishery had deteriorated to the point that alewife dominated the lake. By the mid-1960s, this single species accounted for an estimated 85% of the total fish biomass of Lake Michigan. After showing serious signs of trouble even to 1900, whitefish and lake trout populations crashed in the 1940’s. The invading, predatory sea lamprey dealt the final blow to these high-value, heavily exploited species in Lake Michigan. As a matter of fact, native lake trout populations had been virtually eliminated from the lake. Lake herring, yellow perch, and walleye populations in Lake Michigan had been seriously depleted as well, each suffering a serious population plunge in the 1950s and 1960s. Chubs had been reduced to one dominant species, the smallest of the original seven in Lake Michigan. And even that remaining population was showing signs of over-exploitation. The one-two punch of over-fishing and competition from the alewife left little hope for recovery of many important native species in Lake Michigan.

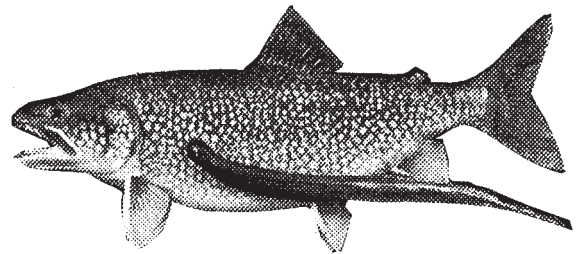
Beginning in 1957, annual alewife die-offs in Lake Michigan had begun to create problems. As their numbers increased, so did those problems. Massive die-offs in the early 1960s clogged water intakes of steel mills, power plants, and municipal water supplies. In 1967, several billion alewife were estimated to have died and washed ashore. Stinking, unsightly windrows of the dead fish made hundreds of miles of Lake Michigan beaches virtually unusable for any form of recreation.

— To be continued in May issue —



**Part II, to be printed in the  
May 2000 issue, will include:**

- Michigan introduces coho and chinook salmon (1966).
- Closure on commercial fishing for yellow perch, walleye and herring adopted to protect Lake Michigan populations.
- Other Great Lakes states adopted Michigan’s example in fish management techniques.
- Wisconsin and Michigan take the lead in controlling the manufacture and use of DDT and PCB.
- Commercial fishing by Indian tribes and sport fishing interests in Great Lakes reached a negotiated agreement in Federal District Court on March 28, 1985. Agreement expires March 28, 2000.
- The future of the Great Lakes fishery will depend upon fishery research, catch quotas, habitat restoration and stocking decisions.



**Three Lakes Association, Bellaire Clam  
& Torch Lakes  
Antrim County  
Jack Norris, President**

Three Lakes Association hires new Executive Director, Brad Jensen majored in conservation at Northern Michigan University securing a Bachelor of Science Degree in 1995. He has worked as a naturalist in Eagle River, Wisconsin and directed Outdoor Education in Massachusetts and Hawaii. He was also the Regional Coordinator for the Adventure Program at the Kalamazoo Nature Center. His work in the out-of-doors included field research with the U.S. Geological Survey on land use management, and monitored the feeding and breeding habits of peregrine falcon and bald eagles in Michigan. He has developed and published environmental articles and materials for all age groups. Three Lakes will keep him busy preserving and protecting the resources of the Three Lakes and their watersheds.



# Keeping the Pere Marquette River Restoration Effort Alive

Traverse City, MI. Back in the fall of 1998 when the Pere Marquette River Restoration Partnership unveiled the engraved boulder recognizing the completion of the 12 year, \$1.7 million Pere Marquette Restoration Project, many people felt that was the end of restoration work on Michigan's most famous river. In reality it may have been the beginning!

Back in 1987, six organizations launched the Pere Marquette River Restoration Project. The six partners include the Conservation Resource Alliance, Mason-Lake Conservation District, Michigan Council of Trout Unlimited, Michigan Department of Natural Resources, Pere Marquette Watershed Council, and U.S. Forest Service.

The Pere Marquette River, known to many as simply the "PM", is located in Mason and Lake Counties in northwest Michigan and is known nationally for its salmon and trout fishery. In 1985, the Conservation Resource Alliance identified more than 300 eroding streambanks in the Pere Marquette River Watershed. Concern over declining fish populations and reduced habitat triggered a practical, comprehensive restoration project that was the first of its kind.

Although the project accomplished many things since 1986, its primary achievement was stabilizing 172 moderate and severely eroding sites with 23,700 cubic yards of fieldstone placed over 30,800 lineal feet of eroding streambanks.

In addition, the Conservation Resource Alliance completed a watershed-wide inventory of road crossings on the PM and has identified 190 culverts and bridges in the watershed and leveraged funding to improve those that are detrimental to water quality and habitat.

Most remarkable is the legacy the Pere Marquette River Restoration Committee left to fisheries and wildlife management. Often called "the grandfather" of river restoration projects in Michigan, the Pere Marquette Project spawned a new era in habitat improvement and water quality. Never before had such a cooperative effort of time, energy, and expertise been concentrated to overcome all the political, economic, and social barriers to implement practical river restoration solutions on a large scale. No single agency or organization could have done what these partners accomplished by working together.

Today many of these partners continue to remain active in restoration work. Here is a short commercial on each:

**Conservation Resource Alliance** – In 1988 CRA launched River Care in northwest Michigan. River Care's overall goal is to maintain the aesthetic and economic value of northern Michigan's rivers by using local river partnerships to guide the decision making process. More recently they were awarded a \$200,000 state grant to help reduce sand delivery to the PM at road/stream crossings.

**Mason-Lake Conservation District** – The district continues to work with private landowners on the river and provide technical assistance to them on resource issues. More importantly they contract with individuals and agencies to do the habitat work that is still critically needed on the PM.

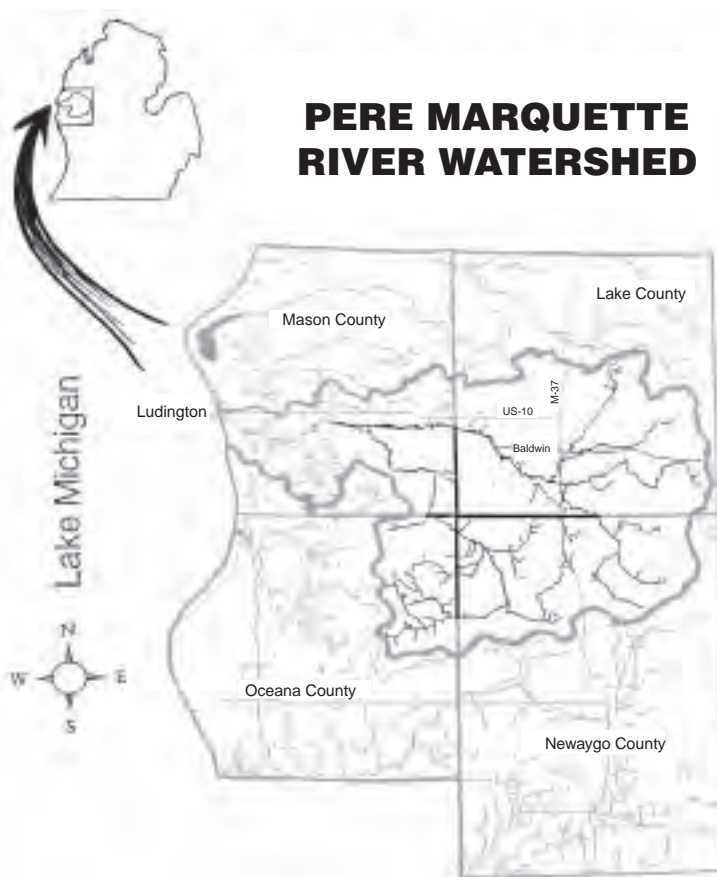
**Trout Unlimited** – The Michigan Council of TU recently completed the construction of a portable, sand sucker for use on Michigan's rivers. Last fall they demonstrated this innovative equipment on a tributary of the PM.

**Fisheries Division** – The MDNR-Fisheries Division continues to provide technical assistance to the various partners on key in-stream fisheries issues.

**PM Watershed Council** – The Council continues to do research work on the Big South Branch of the PM with funding provided by the Great Lakes Fishery Trust. A detailed report is expected in 2003.

**US Forest Service** – The USFS continues to manage much of land surrounding the PM. In addition they have provided financial assistance to repair road/stream and recreational access sites on the river.

To find out more about the Pere Marquette River Restoration Project or the River Care Program, contact the Conservation Resource Alliance at (616) 946-6817. CRA is a private, nonprofit organization founded in 1968 to provide a link between agencies, private interest groups, landowners and business concerned with northern Michigan rivers, lakes, forests and wildlife.



# An Update on Sonar®<sup>1</sup>

Ted R. Batterson<sup>2</sup>

Department of Fisheries and Wildlife  
Michigan State University  
13 Natural Resources Building  
East Lansing, MI 48824-1222

The aquatic herbicide fluridone (tradename Sonar®) has been shown to be an effective herbicide that controls many aquatic plants including the submersed exotic weed, Eurasian watermilfoil (*Myriophyllum spicatum*). The liquid formulation of this herbicide, the only formulation currently used in Michigan, was first used in the state to control aquatic weeds in 1987. It is a broad spectrum, systemic herbicide that effectively disperses throughout the water column. However, there has been little agreement on the appropriate uses and application rates of Sonar® in Michigan despite nearly a decade of evaluation and attempts to reach consensus amongst the various stakeholders. On October 14, 1998, the Michigan Environmental Science Board (MESB) was requested by Governor John Engler to review the research and evaluate seven preliminary conclusions reached by the Michigan Department of Environmental Quality (MDEQ), regarding the efficacy of the herbicide, Sonar®. MDEQ has regulatory authority over the use of herbicides to control nuisance aquatic plants and issues permits for the use of such chemicals.

A Panel of scientists was formed to address the Governor's charge to the MESB. Dr. Bette J. Premo (aquatic ecology, White Water Associates, Inc.) chaired the Panel, which consisted of Dr. Ted R. Batterson (aquatic ecology, Michigan State University); Dr. John A. Gracki (chemistry, Grand Valley State University); Dr. Clarence D. McNabb (aquatic ecology, Michigan State University); and Mr. Keith G. Harrison (ecology, Michigan Environmental Science Board).

The investigation consisted of the accumulation and evaluation of peer-reviewed and some non-peer-reviewed literature and data on the subject. In addition, oral and written testimony from experts, industry specialists, state regulatory agencies, environmental organizations, and concerned citizens was also considered. Ultimately, a 96-plus page report was prepared by the MESB Panel that was submitted to Governor Engler in October 1999. That document is entitled "Evaluation of the Use of Sonar® in Michigan" and can be obtained from the MESB in Lansing, Michigan (e-mail: mesb@state.mi.us; telephone: 517-373-4960; fax: 517-373-6492). It is also available electronically at MESB's Web site (<http://www.mesb.org/pubs/ss/ss.html>).

In turn, the report was submitted to Mr. Russell Harding, Director of the MDEQ on October 13, 1999. Ms. Diana Klemans, Chief of MDEQ's Inland Lakes and Wetlands Unit of the Land and Water Division, the unit responsible for issuing aquatic herbicide permits, has indicated that MDEQ agrees with the conclusions and recommendations of the Panel (see below). She reports that they will soon initiate the administrative rules process to define allowable uses of the liquid formulation of Sonar® in Michigan waterbodies and are modifying their interim strategy for Sonar® use in Michigan for the year 2000. The interim strategy will incorporate some of the Panel's recommendations, e.g., a treatment concentration of six ppb Sonar® followed by a potential retreatment boosting the concentration back up to six ppb.

The conclusions and recommendations that were reached by the MESB Panel regarding MDEQ's preliminary conclusions are presented below. They are taken verbatim from the Panel's report.

MDEQ Conclusion 1. A balanced, diverse aquatic plant community should be maintained in all water bodies for the maintenance of healthy fish and wildlife populations.

In general, the MESB Panel concurs with MDEQ Conclusion 1; however, history has demonstrated that aquatic ecosystems that are managed by humans using Sonar® or other means are likely to be never in balance. Given this, the MESB Panel recommends that Conclusion 1 be modified by omitting the word, *balance*.

MDEQ Conclusion 2. Sonar® should not be used in Michigan at or near the labeled rate to eliminate all or the majority of aquatic plants in a water body.

The purpose of the use of Sonar® is to rehabilitate water bodies that have become overpopulated with Eurasian watermilfoil. The process necessarily entails that such removal be accomplished in a manner that will not negatively impact the more desirable native species but, rather, encourage their proliferation and resurgence of dominance within the water body. Based on the available research, Sonar® application rates at or near the label rate will remove Eurasian watermilfoil; however, at these rates, it will also impact significantly the native species. Removal of all or the majority of the aquatic species (Eurasian watermilfoil and the native species) from a water body would be a component of a comprehensive lake restoration project, which is not the purpose of the MDEQ program. Therefore, the MESB Panel concurs with MDEQ Conclusion 2.

MDEQ Conclusion 3. When Sonar® is used to control Eurasian watermilfoil, negative impacts on native aquatic plants should be minimal in the year of treatment and in subsequent years.

The MESB Panel concurs with MDEQ Conclusion 3 but suggests that the option for rehabilitation of a given water body may be not only to control, but also totally eliminate Eurasian watermilfoil by the application of Sonar®. Implementing this option may, in the year of treatment, have a greater than minimum negative impact on native aquatic plants. Eliminating by administrative rule the option to eradicate Eurasian watermilfoil when conclusive data to condemn or promote this particular approach are not yet available, may be premature. Because of this, the MESB Panel suggests that Conclusion 3 be qualified to allow the option to use Sonar® in Eurasian watermilfoil elimination and water body rehabilitation programs, and that such use be allowed at the MDEQ's discretion on a case by case basis with decisions based on its review of the available scientific field studies and specific physical, limnological, and biological data for the particular water body in question.

MDEQ Conclusion 4. The Sonar® concentration that effectively controls Eurasian

(continued on page 21)

# BUBBLERS – AND WE DON'T MEAN CHAMPAGNE

By: Dennis Zimmerman and Cliff Bloom

For years, some marinas on the Great Lakes have utilized compressed air machines in the winter to prevent ice damage by ensuring that ice does not form around permanent docks and large boats. These are often referred to as “bubblers.” In the past, the use of bubblers on inland lakes in Michigan has been rare, but the practice is increasing.

Many riparians (including the authors of this article) believe that bubblers on inland lakes create a severe safety hazard and should be banned. What is the problem? Quite simply, bubblers create open water and also weaken the ice for some distance beyond the open water. It is very easy for children, pets, ice fishermen and snowmobilers to fall into the open water or through weakened ice near bubblers, particularly at night or during snowstorms. We believe that the limited benefit of bubblers to property such as docks and boats is greatly outweighed by the danger to life. Furthermore, permanent docks should generally not be utilized in inland lakes anyway, and boats should be removed in the winter.

Are bubblers legal? Probably. Under the Michigan Marine Safety Act (MCL 324.80103 et. seq.), the DNR does have jurisdiction to abate dangers or nuisances to navigation, but it is unclear whether “navigation” is involved in frozen waters. Local municipalities (cities, villages and townships) can enact local ordinances which expressly ban or severely regulate bubblers. However, in *Belle Maer Harbor v Harrison Charter Township*, 170 F.3d 553 (6th Cir. 1999), a federal appeals court invalidated a local ordinance which regulated bubblers. Notably, the ordinance was not struck down due to the inability of a municipality to pass such an ordinance, but rather because it was unduly vague. It is highly likely that a well-drafted ordinance would be upheld by the courts. Furthermore, while a riparian generally owns the bottomlands under a lake adjacent to his or her shoreline property, the waters are owned by the people in the state of Michigan. Accordingly, a use such as bubblers which dramatically affects public waters and the uses thereof would normally be an entirely appropriate subject for local municipal regulation.

In the old days, one of the incidents of riparian ownership was the right to cut and remove ice over one's bottomlands for use in the riparian's ice box or for sale to other users. That consumptive use of ice was still subject to the “reasonable use doctrine” (also sometimes known as the “riparian use doctrine”).

In other words, ice could only be removed to such a degree and in such fashion so as not to unreasonably endanger other riparians or interfere with the coequal rights of other riparians to remove ice. Is not the use of a bubbler simply another permitted use akin to removal of ice in the olden days? Perhaps, but it is possible that the reasonable use doctrine as applied today would prevent significant ice removal. In the distant past, open water pursuant to ice removal was much less of a threat to other people than it would be today for at least two reasons. First, most lakes were remote or lightly populated, such that the chances of someone falling through a large open hole in the ice were remote. Second, travel on the ice almost always involved walking, and on rare occasions, horseback travel. It is much easier to fall through a large hole in the ice today with a high speed snowmobile, 4-wheeler, or vehicle, which did not exist in the old days.

By definition, the reasonable use doctrine changes over time to meet contemporary situations. It is possible that the courts would find that large scale ice removal from lakes would now be unreasonable. It is also possible that the courts could find that bubblers on many inland lakes would constitute an unreasonable interference with the rights of others to use the whole surface of the frozen lake in a safe fashion. What about ice fishing holes? Rarely are they large enough on inland lakes to allow a snowmobiler, 4-wheeler, or even a pedestrian to fall into the water.

Even without a specific state or local law making bubblers illegal on inland lakes, it is usually foolish to utilize bubblers due to the liability potential. If someone drowns or is injured due to open water or weakened ice caused by a bubbler, it is almost inevitable that the owner or operator of the bubbler will be sued for damages under tort liability. It is highly probable that a jury could find such a person liable based on negligence, if not gross negligence or even recklessness. It is unlikely that markers or warning signs would prevent such liability.

It is unfortunate that in this litigious society everyone tends to think only in terms of legal requirements or potential tort liability. Before a riparian even considers using a bubbler, one would hope that they would decide not to use a bubbler due to more important considerations such as human life, safety and courtesy.

watermilfoil with minimal impacts on native species is between five and eight parts per billion (ppb).

MDEQ Conclusion 5. Boosting the concentration of Sonar® 10 - 14 days after the treatment (i.e., bringing the concentration of Sonar® in lake water back up to the target concentration) enhances the effectiveness and timeliness of the treatment without additional negative impacts on native species.

In general, the scientific literature supports and the MESB Panel concurs with both MDEQ Conclusions 4 and 5; however, several suggested changes regarding the current MDEQ methodology for calculating lake volume and a more precise application rate are offered by the MESB in the report. In particular, the MESB Panel recommends that the application rate of Sonar® for selective control of Eurasian watermilfoil be six ppb followed by the potential of retreatment boosting the concentration back to six ppb two to three weeks after the initial treatment based on results of a FasTEST® for water column concentrations of the compound. Under this protocol, impact to non-target native plant species would be minimal in the year of treatment and beyond, and the amount of native vegetation habitat remaining would be adequate for fish and wildlife.

MDEQ Conclusion 6. Sonar® is one tool for controlling Eurasian watermilfoil on a whole-lake basis.

The MESB Panel concurs with MDEQ Conclusion 6 since each lake has unique aquatic plant populations and distributions. When exotic species, such as Eurasian watermilfoil, grow in numbers that are considered nuisance then all control options must be considered including mechanical harvest, chemical control, and nutrient source reduction. Currently, the MDEQ requires that only a minimum of information be provided with a permit application. In order to better understand the dynamics of the interrelated natural ecological processes that operate within a lake and, therefore, the potential impacts that may take place due to manipulation of these processes, a greater level of information would be useful. There currently exist several lake information-gathering models that may be used to supplement the information currently required by the MDEQ. The MESB Panel suggests that the MDEQ evaluate the use of these and other similar models and encourage the use of such tools in conjunction with its permit program.

MDEQ Conclusion 7. Sonar® does not have any direct negative impacts on fish or wildlife populations, or pose any human health concerns when used according to the product label.

The MESB Panel concurs with MDEQ Conclusion 7 but recommends that it be modified by adding the words, “and its permitted use by the MDEQ” to the end of the sentence.

<sup>1</sup>A summary of a report written by the Michigan Environmental Science Board Sonar Investigation Panel.

<sup>2</sup>The author, who was recently appointed to the Michigan Lake and Stream Associations’s Science Advisory Committee, gratefully acknowledges the efforts of all the other Panel members who co-authored the report.

freely float on the water over another’s bottomlands and even to temporarily anchor thereon pursuant to navigation, people do not have the right to place docks, shorestations or raft anchors on the bottomlands of another without permission, or to moor boats other than temporarily on such bottomlands. Furthermore, one cannot normally walk on the bottomlands of another without permission. Unfortunately, law enforcement agencies will almost never prosecute bottomlands trespass cases due to their lack of knowledge of riparian law and the difficulty of ascertaining bottomlands boundaries. Only a county circuit court in a full-blown civil lawsuit can determine true bottomlands boundaries, which is an expensive and complicated process. Accordingly, the ultimate relief for the owner of bottomlands who experiences bottomlands trespassing is a private civil lawsuit.

The various trespass laws differ regarding whether or not a property must be posted before a trespasser can be pursued. The RTA requires signage at every visible point, or, alternately fencing. Some local ordinances do not require any signage or fencing, while others do. To be safe, it is best to post your property, utilize fencing or use both methods if you are concerned about trespassing. If you are dealing with a relatively small lot, a confined area or lake bottomlands where fencing or posting is not practical, either you or your attorney should send a warning letter to whomever has been a trespasser in the past warning that person not to trespass or you will take appropriate legal action. Obviously, you should keep a copy of the letter in your file and preferably send it by registered mail to the potential trespasser so you can later prove that he or she had prior notice if court action should be necessary.

Here are a few additional tips regarding trespass:

1 Once you have had a survey done (which can be quite expensive), you may desire to dig a small hole around each corner iron (without disturbing it) and pour a little redi-mix cement into the hole, leaving a half-inch or so of the iron protruding through the concrete. If you desire, you can place topsoil over this cement and plant grass. This will ensure that corners do not get moved, lost, bent, etc., so that your property lines will remain established.

2 If someone trespasses on your property and damages, cuts or takes your trees, crops, wood or other natural resources without permission, they are potentially liable for triple damages under MCLA 600.2919.