

August 2000

Volume 35 No. 3

THE MICHIGAN RIPARIAN

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

Published Quarterly – February, May, August and November



MIGHTY MAC—OPENED NOVEMBER 1, 1957

"A BRIDGE OF PEACE, WROUGHT OF THE DREAMS OF MAN." – D. B. Steinman

See article on Great Lakes, Pg. 9, by G. Tracy Mehan,
Director of The Michigan Office of the Great Lakes

"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."

POSTMASTER:

Send address changes to:
The Michigan Riparian
P.O. Box 249
Three Rivers, MI 49093

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.

EDITORIAL and BUSINESS OFFICE: 124½ N. Main Street, P.O. Box 249, Three Rivers, MI 49093.

TELEPHONE: 616-273-8200

FAX: 616-273-2919

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

EDITOR and PUBLISHER: Donald E. Winne

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

OFFICERS AND DIRECTORS OF THE MICHIGAN RIPARIAN, INC.

David Maturen, *President*
1125 E. Milham Road, Portage, MI 49002
Phone: (616) 342-4800

Merrill Petoskey, *Vice President*
2830 Cobb Road, Lewiston, MI 49756
Phone: (517) 786-2147

Donald E. Winne, *Chief Executive Officer*
124½ North Main Street, Three Rivers, MI 49093
Phone: (616) 273-8200

Dr. Robert King, *Director*
2640 W. Wing Road, Mt. Pleasant, MI 48858
Phone: (517) 866-2592

William Hokanson, *Director*
11242 Oak Avenue, Three Rivers, MI 49093
Phone: (616) 244-5477

Tom Edison, *Director*
23800 Caughlan Road, Hillman, MI 49746
Phone: (517) 742-3368

The Michigan Riparian, Inc. is not responsible for views expressed by our advertisers or writers in this magazine. While *The Michigan Riparian, Inc.* has not intentionally printed incorrect material or omissions, the contents are nevertheless the responsibility of the parties furnishing material for this magazine. Accuracy of information is subject to information known to us at printing deadline. We apologize for any errors.

Copyright ©1998 by *The Michigan Riparian, Inc.*

No maps, illustrations or other portions of this magazine may be reproduced in any form without written permission from the publisher.

GUEST EDITORIAL



Dave Maturen

LAKES AND STREAMS AT RISK FROM E-COLI

Just when you thought it was safe to go in the water—kind of sounds like a “Jaws” reference doesn’t it? Unfortunately the villain is many times smaller than a shark, though its consequences are just as deadly. Contact with E. Coli can lead to illness or even death. When neighbors in an adjacent community took samples from the river leading to our lake (Indian-Kalamazoo County) near a large livestock facility and found counts many thousands of times the public health threshold of 130 / 100 ml, the scene was reminiscent of the shore scene in the Jaws movie—no one wanted to go in the water. Imagine summer without swimming in your lake. The Confined Animal Feeding Facility or CAFO (get used to the term—you’ll be seeing a lot more of it) is seen by many to be a major contributor to the pollution. Fortunately, for the lake residents at least, the contamination was mostly contained in the river and likely diluted by the time it got to the lake—this time.

With no permitting process in Michigan for CAFOs, and instead voluntary guidelines to control the potential of massive pollution from these “factory farms,” our lakes and streams are at risk. The “zero discharge” policy in this state is a piece of bureaucratic fiction—see no evil, you know the rest. Revisions to state law prohibiting localities from enacting their own ordinances to control these CAFOs compound the problem. With “family farmers” out and “factory farms” in, lets hope the waters of our state are not turned into convenient waste conduits.

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

In This Issue:

Great Lakes: An Ecosystem Approach - G. Tracy Mehan 9
The Attorney Writes - Cliff Bloom 11
Swimmer’s Itch, Part II 13
Jet Skis Collide, Teen Killed 15
Lake Association News 16
Wetlands Protection - New Administrative Rules - Colleen O’Keefe 21
Another Lake Road End Case - Cliff Bloom 21

THE MICHIGAN RIPARIAN SUBSCRIPTION COUPON

(Mail to: The Michigan Riparian, P.O. Box 249, Three Rivers, Michigan 49093.)
Office address: 124½ N. Main St.

**Please enter my subscription to *The Michigan Riparian* magazine.
One year rate: \$8.00**

First Name _____ Initial _____ Last Name _____
Street Address _____
City _____ State _____ Zip Code _____

Great Lakes: An Ecosystem Approach

By G. Tracy Mehan and Emily Bankard

Great Lakes policy has expanded from one that focused primarily on chemical pollution toward a broader view that also encompasses physical and biological threats, including habitat destruction and exotic species introduction. Moreover, the nature of the chemical threats has changed due to an appreciation of the role of long-range air pollution and deposition. With more than 33 million people residing in the Great Lakes basin, ecosystem management is essential in order to achieve some semblance of balance between development and conservation. Although the United States population within the Great Lakes basin declined during the 1980s and has now stabilized, the Canadian population has increased dramatically in Ontario over the past 20 years.

The turn toward ecosystem management will significantly change traditional management of everything from fisheries to toxic contaminants and require a balancing of the physical, chemical, and biological components often overlooked. No longer can we deal with water quality separately from air deposition and activities on the land.

Suburban Growth

Michigan is projected to have almost a 12 percent population increase by 2020 resulting in an 87 percent increase in developed land. With increasing affluence and population comes the demand for more development. Suburban growth has been an important issue during the past decade. As population densities decrease in urban areas and increase in suburban areas, existing roads become superseded by increased congestion. Additional roads, parking lots, neighborhoods, and industries take the place of natural vegetation, increasing the percentage of impervious surfaces in any given watershed, which leads to greater, more polluted stormwater runoff. In southeast Michigan alone, a 6 percent population increase may yield a 40 percent increase in land consumption. This region's impervious surfaces are expected to increase from 11 percent in 1995 to 20 percent in 2020.

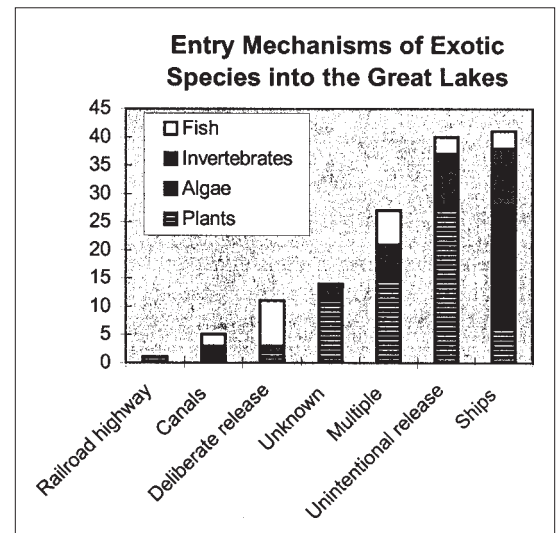
Despite the fact that the built environment consists of less than 10 percent of the land areas of the basin, most of this development is situated on or near the shores of the Great Lakes or on its major tributaries. In these areas, it is common to see the removal of natural vegetation, which under natural circumstances could retain and aid in the control of chemical runoffs and erosion of sediments along shoreline areas of lakes and streams. In parts of the basin, agriculture-related sediment, pesticide, and nutrient loading of the Great Lakes tributary rivers is a leading cause of nonpoint source pollution. Diffuse runoff from farms, concrete surfaces, and golf courses also contribute to nonpoint source pollution. Pressures from the conversion of farmland to urban development are causing a shift of agricultural activities to areas with less productive soils, shorter growing seasons, and greater distances to major markets.

Exotic species

Chemical runoff and erosion caused by land use changes and impervious surfaces are not the only threats to the Great Lakes basin. Exotic species are now the second leading threat to biological diversity in the Great Lakes region and all over the country. They are considered among the most severe forms of habitat alteration. There are now approximately 145 "aquatic nuisance species" (sea lamprey, spiny water flea, zebra mussel, purple loosestrife and the like) infesting the Great Lakes due in large part to the discharge of ballast water from ships. Exotic species are nonnative to the region. Lack of natural controls in a new habitat can allow the new species to grow at or near its potential growth rate thus disrupting the food web and energy flow in a system. Many of the species that arrived in the last six years, and some of the new ones, appear to be resistant to salt water.

Canadian researchers have identified 17 potential Ponto-Caspian species that have highly invasive histories and are likely to be transported overseas in ship ballast and into the Great Lakes. These species have broad tolerances for salinity. Thus, they are immune to ballast water exchange requirements of current federal law.

Dr. Bill Cooper of Michigan State University has stated that the biggest risk to the integrity of the natural fauna and flora of the Great Lakes is not toxic substances, but the introduction of exotic species: "If one wished to allocate scarce monetary and human resources so as to maximize the reduction in ecological risk per unit resource expended, one would do more good by regulating and/or limiting the introductions of exotics than by obtaining marginal



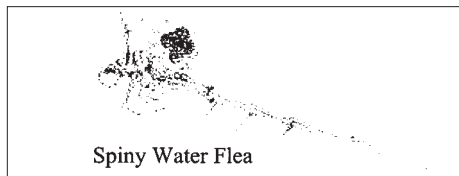
reductions in trace levels of existing toxicants."

Fortunately, both private and public sectors are coming to grips with this pressing problem. The Voluntary Ballast Water Management Program, instituted in 1993 by the Lake Carriers' Association (LCA) to stem migration of the Eurasian Ruffe from western Lake Superior, prohibits taking on ballast water in Duluth/Superior Harbor. When ships must ballast in that port, strict guidelines decree the discharge of the water into the environments where the ruffe is unlikely to flourish. Moreover, federal law

requires that shippers exchange ballast water before coming into the Great Lakes. However, some exotic species still dwell in the sludge and unpumpable slop at the bottom of ballast tanks, only to be released into the Great Lakes. The principle of prevention needs to become paramount on a binational, national, and state or provincial level. The debate must focus on to what extent the risk of biological pollution can be reduced and at what cost.

Zebra mussels, one of the most costly exotics, have spread from the Great Lakes into many inland lakes by accidental transport by boating and fishing equipment and natural transport by animals. They cause a decrease in turbidity, and an increase in water clarity and aquatic macrophytic populations. Zebra mussels have a tremendous filtering capacity for sediments and phytoplankton, which heavily impact zooplankton populations, a popular food source for juvenile yellow perch and among many other fish species.

Other species such as the spiny water flea and its cousin *Cercopagis pengoi*, better known as the fishhook flea, compete directly



Spiny Water Flea

with young fish for the same food source, a zooplankton called Daphnia. They may also add another level of bioaccumulation of persistent toxics such as PCBs. Both are easily transported to other water bodies on boating and fishing equipment due to their size.

Lake Levels

Lake levels fluctuate over time. They respond to the combined influence of precipitation, upstream inflows, groundwater, surface runoff, evaporation, diversions into and out of the system, and water level regulation.

Climatic conditions control precipitation, runoff, and direct supply to the lakes as well as the rate of evaporation. These are the primary driving forces in determining water levels. The Army Corps of Engineers has water level records for the period from 1918 to 1999, during which time there were several periods of extremely high and extremely low water levels and flows. Exceptionally low levels were experienced in the mid-1920s, mid-1930s,

and early 1960s. High levels occurred in 1929-30, 1952, 1973-74, 1985-86, and 1997-98. These data show that water level fluctuations do occur naturally in response to precipitation, temperature, and water supply and that the current water levels are an example of this natural cycle. Inland water bodies are also experiencing water level fluctuations due to the same causes in the Great Lakes water levels, sometimes more extreme due to the smaller quantities of water. These lower water levels are a natural process which for some habitat types can be a positive event, such as wetlands where major water fluctuations return energy to the system.

The issue of dredging for commercial navigation and recreational boating will be front and center as water levels continue to drop for the time being.

Air Deposition

Water bodies can be impacted by pollution sources that are far removed from the area. Long range atmospheric transport and deposition of pesticides has been documented by numerous researchers, and is now believed to contribute significantly to toxic contaminant inputs to the Great Lakes. Other examples of airborne pollutants are mercury and dioxin. Traces of pesticides and other chemicals have been found in the uninhabited Polar Regions of the North which supports this theory.

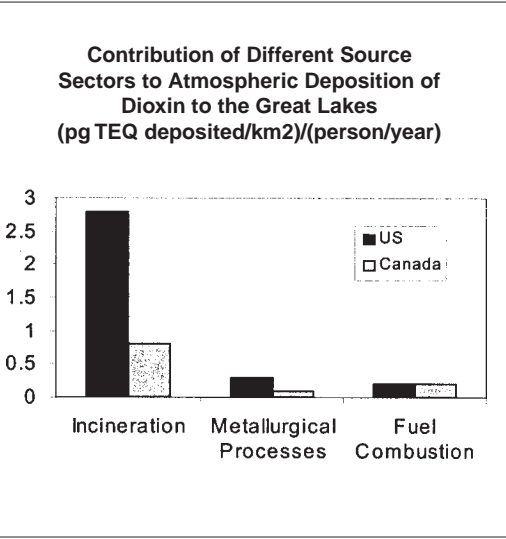
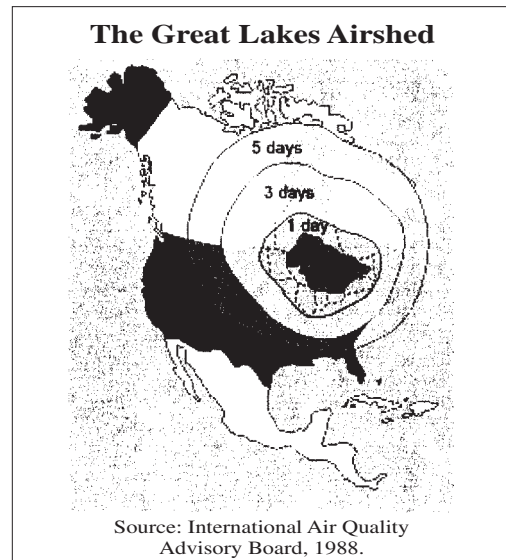
“Because contamination from industrial sources has been largely controlled, the atmosphere is now the main source of toxic organic pollutants to the Great Lakes,” declares Raymond Hoff, Director of Joint Center for Earth Systems Technology at the University of Maryland.

New tools, such as airshed determinations, provide better evaluations and estimates of the total loadings to the Great Lakes. Understanding the pathways of pollutants by air is a complex process. So far, attempts to model systems, study patterns and estimate amounts deposited, versus amounts released, have raised as many questions as answers.

A study on dioxin fallout in the Great Lakes, conducted by the Center for the Biology of Natural Systems at Queens

College of New York, found 1329 sources that could contribute to the loading of dioxins by air to the lakes. Medical waste incinerators, municipal solid waste incinerators, pulp and paper mills, iron sintering plants and cement kilns that burn hazardous waste can all contribute dioxins to the air. The largest source that contributes to dioxin deposition is incineration, illustrated in the adjacent figure.

Management plans have come a long way in the protection of the Great Lakes. Yet, there are still threats to the Great Lakes ecosystem. In order to continue progress,



chemical, physical, and biological issues must be considered in a management plan that will focus on the highest priorities in terms of risk to human health and nature.

(G. Tracy Mehan is director of the Michigan Office of the Great Lakes, and a member of Governor John Engler’s cabinet. Emily Bankard is a student assistant for the Michigan Office of Great Lakes.)



Attorney Writes

By Clifford H. Bloom

Law, Weathers & Richardson, P.C.
Bridgewater Place
333 Bridge Street, N.W., Suite 800
Grand Rapids, Michigan 49504-5360
E-Mail: CliffBloom@lwr.com

WHO PULLED THE PLUG ON MY LAKE?

With lake levels around the Great Lakes approaching record lows, many riparians are wondering what, if anything, can be done to get more water into their lakes. Obviously, one option is to simply wait – most inland lakes go through natural high and low cycles. On some lakes, however, the natural high and low cycles have been affected by water diversion, area development and other factors. Riparians desire to artificially maintain lake levels for a variety of different reasons. In the past, fluctuating inland lake levels was not the major problem it is today due to a lack of cottages and homes on many lakes years ago.

There are normally two means for artificially maintaining lake levels during dry conditions. First, if the lake has an outlet, the outlet can be dammed and regulated. Second, one or more deep wells can be installed to pump water from underground aquifers into the lake.

Artificially maintaining lake levels is not an area where one can exercise “self-help.” The proper legal procedures must be utilized. Anyone who attempts to dam an outlet or install a lake pump (or in the reverse situation, create an outlet or clean out or widen an outlet to increase water outflow) on their own could incur civil and even criminal penalties. Since a lake is like a common highway and the waters are owned by and held in trust for the people of the state of Michigan, no private individual can simply artificially alter lake levels. Furthermore, should an individual attempt to do so and any other riparian or property owner is damaged thereby, the person undertaking the change could potentially be liable for significant monetary damages.

The legal vehicle for setting lake levels is the Inland Lake Level Act. See MCLA 324.30701 *et seq* (“Act”). Although the procedures under the Act are somewhat cumbersome, formal and time-consuming, the Act is really the only safe and lawful way to artificially regulate lake levels. Under the Act, a formal lawsuit must be instituted in the local county circuit court. The lawsuit must be filed by the county board of commissioners or its agent. The county commission can institute a lawsuit on its own initiative, or, it must do so if it is presented with a petition signed by two-thirds of the riparian property owners fronting on the lake involved. After one or more court hearings, the circuit court judge decides whether or not to set a permanent lake level (*i.e.* normally expressed as a set number of feet above sea level), and if so, how that lake level should be maintained. The decision rests within the discretion of the circuit court judge. If the court determines that it is not in the public interest to set a lake level, no lake level will be set and artificial means of maintaining the lake level (such as damming or pumping) probably cannot be utilized thereafter. If the court decides to set a specific lake level, the court will determine the level as well as what means will be utilized to maintain the lake level. Once a lake level is set, the county has the authority to impose a special assessment district to spread the costs of maintaining the lake level to the benefited property owners. A hypothetical lake level order issued by a circuit court could read as follows:

This court hereby sets the statutory lake level for Bear Lake at a target level of 730 feet above sea level, with a range between 728 feet and 732 feet above sea level. The County Drain Commissioner shall use his or her best efforts to meet that target

level and to maintain the lake level within the above-mentioned range at all times. A deep well and pump shall be installed to maintain the lake level, as shown on the plans attached to this Order. Furthermore, the existing Bear Creek Drain outlet located on the township park on the east side of Bear Lake shall be dredged and improved with a dam insert installed as shown on the plans attached to this Order. If the county so chooses, the cost for installing the pump, doing the above-mentioned work on the drainage outlet and for maintaining those items may be paid for by a special assessment district to be levied on the owners of all properties benefited having frontage on or access to Bear Lake.

Are there any other statutes which can be used to authorize setting a lake level? Theoretically, the general special assessments statutes for townships, cities and villages could be utilized to pay for the pump and/or dam apparatus, but they would not accord the necessary authority to set the lake level itself.

If one or more riparians desire to set a level for a lake, I recommend that they consider the following:

I. Attempt to gain the formal support of the lake association first, if one exists.

II. Do not begin to circulate petitions willy-nilly – rather, contact the county drain commissioner in order to come up with the appropriate wording for the petition ahead of time. You certainly do not want to draft your own petition and spend many hours obtaining enough signatures, only to have the drain commissioner or the court reject the form of the petition, so that you have to start over again.

III. Give a realistic assessment of costs to property owners when you are circulating the petition. It does no good to “low ball” the projected cost figures per property in order to obtain petition signatures, since that will only breed opposition later during the court proceedings.

IV. It is often helpful to put together an exhaustive “facts sheet” to give to property owners when you are circulating the petitions, which covers all of the major issues and answers all potential questions regarding the project and the proposed special assessment district. Be sure, however, that everything in such an informational document is absolutely accurate, or the document itself will become a weapon that opponents of setting a lake level will attempt to use against you later. Furthermore, where an issue cannot be nailed down at that time, you should simply state that the particular issue cannot be answered at this time.

V. Remember, the overwhelming majority of people who will oppose setting a lake level will do so because they do not want to be assessed and have to pay for the pump and/or dam necessary to maintain the lake level. Many people who oppose setting a lake level because of the cost involved are embarrassed to admit that the cost is the true reason they are concerned, such that many opponents will argue that the lake level should not be set due to other matters such as environmental concerns (*i.e.* pumping is not “natural”), there is no problem since the lake level will come back eventually, etc. That is not to say that no one will oppose setting a lake level for non-monetary reasons, but it is amazing how many people base their opposition on cost factors.



**OFFICERS AND BOARD MEMBERS
OF MICHIGAN LAKE &
STREAM ASSOCIATIONS**

PRESIDENT – Richard Brown

13355 Lakeshore Dr., Fenton, MI 48430
Ph: 810-629-5964; Fax: 810-750-5964
E-mail: richardb7@prodigy.net

VICE PRESIDENT – Joe Landis

1642 Walnut Hts. Dr., East Lansing, MI 48823
Ph: 517-332-6004 (H); 616-266-5667 (Cottage)

SECRETARY – Shirley Westveer

17415 Thunder Bay, Howard City, MI 49329
Ph: 231-937-5280; E-mail: shirlw@pathwaynet.com

TREASURER/DIR. OF OPERATIONS – Pearl Bonnell

P.O. Box 303, Long Lake, MI 48743-0281
Ph: 517-257-3583; Fax: 517-257-2073
Email: Pbonnell@mlswa.org

REGIONAL VICE PRESIDENTS

Region 1 – Floyd Phillips

9535 Crestline Dr., Lakeland, MI 48143
Ph: 810-231-2368

Region 2 – Kathy Miller

6090 Dexter Lane, Manitou Beach, MI 49253
Ph: 517-547-6426; E-mail: kmiller@tc3net.com

Region 3 – Sondra (Sue) Vomish

52513 Twin Lakeshore Drive, Dowagiac, MI 49047
Ph: 616-782-3319

Region 4 – Jerry McCoy

7420 N. Crooked Lake Dr., Delton, MI 49046
Ph: 616-623-6312

Region 5 – Virginia Loselle

5571 E. Grand River, Howell, MI 48843
Ph: 517-548-2779; E-mail: losellev@state.mi.us

Region 6 – George Fetzer

1757 Tannock Drive, Holly, MI 48442
Ph: 248-634-4353; E-mail: g6344353@tir.com

Region 7 – Dennis Zimmerman

716 E. Forest, P.O. Box 325, Lake George, MI 48633-0325
Ph: 517-588-9343

Region 8 – John Drake

7178 Aqua-Fria Court, Grand Rapids, MI 49546
Ph: 616-940-1972; E-mail: jkd@iserv.net

Region 9 – Rex Keister

4582 North Spider Lake Road, Traverse City, MI 49686
Ph: 231-947-2868

Region 10 – Leo Schuster

3021 Marion, Lewiston, MI 49756
Ph: 517-786-5145

Region 11 – Cecile Kortier (V.P.)

18200 Valerie Dr., Hillman, MI 49746
Ph: 517-742-3104

Region 15 – Army Domanus

N4176 Kari-Brooke Lane, Watersmeet, MI 49969
Ph: 906-358-9912

ML&SA NEWS

MICHIGAN LAKE & STREAM ASSOCIATIONS, INC.

P.O. Box 249, 124 1/2 N. Main Street, Three Rivers, Michigan 49093

Phone: (616) 273-8200

Fax: (616) 273-2919

E-mail: info@mlswa.org

dwinne@mlswa.org

Web sites: www.mlswa.org.

www.mi-water-cmp.org.

Donald D. Winne, Executive Director

NEW ML&SA MEMBER ASSOCIATIONS

Crystal Lake /Perch Lake POA, Hillsdale County
Edward Meckley, President

Little Pine Island Lake Improvement Association, Kent County
Walter Garrett, President

Gratiot Lake Conservation, Keweenaw County
Joseph Lizzadro

Eight Point Lake Association, Clare County
Mark K. Walter, Chairman

Burt Lake Preservation Association, Cheboygan County
John Kosacki, President

Golfside Drive Civic Association, Oakland County
Tom Parmenter, President

Deer Lake Association, Alger County
Charlene McDonnell, President

Osterhout Lake People's Association, Allegan County
Chuck Pugh, President

PLAN TO ATTEND ML&SA FALL REGIONAL SEMINARS

Michigan Lake & Stream Associations will be holding seven fall seminars in 2000. You are invited to attend one or more as you wish.

These seminars are for lake and stream property owners and members of the public to learn about and discuss lake front and water resource issues. Sessions will be on such topics as riparian rights, land use zoning, boat and dock regulations, water quality and water safety, etc.

The Seminars will be held on the following dates and locations. More information will be mailed to ML&SA member Associations in the near future. You may want to call your Regional Vice President for more information. The address and phone number of each Vice President is in the left hand column. The registration cost for the seminars is \$17.50 per person which includes the cost of luncheon.

<u>REGION(s)</u>	<u>DATE</u>	<u>LOCATION</u>
14 & 15	Sept. 9	Hagerman Lake, Watersmeet
9, 10, 11	Sept. 16	Days Inn, Gaylord
12 & 13	Sept. 16	Harbor Inn, Manistique
7	Oct. 14	Lost Arrow Resort, Gladwin
1 & 2	Oct. 7	Potter Center, Jackson Community College, Jackson
3, 4 & 8	Oct. 21	Crown Plaza, Grand Rapids
5 & 6	Nov. 4	Orchard Lake Methodist Church, Orchard Lake

Swimmer's Itch in Michigan: Another Outlook from Michigan State University, Part II

(Part I was printed in the November 1998 issue, page 8)

Patrick M. Muzzall, Thomas M. Burton, Richard J. Snider, Nate R. Coady, Jamie Saxton, and Mike Sergeant:
Department of Zoology (and Department of Fisheries and Wildlife for TMB and JS, and Department of Entomology for RJS),
Natural Science Building, Michigan State University, East Lansing, Michigan 48824

In an article in the *Michigan Riparian* in 1998, we discussed several aspects of the host-parasite relationships of the blood flukes that cause swimmer's itch, their snail hosts, as well as swimmer's itch in Michigan including its history, symptoms, life cycle, prevention and control methods. Several Michigan lakes have a swimmer's itch (cercarial dermatitis) problem including most large, clear water, recreationally important lakes. As part of a project funded by the Michigan Legislature through the Michigan Department of Natural Resources, we initiated research on cercarial dermatitis in 1998. Initial work was conducted on Walloon Lake (Emmett and Charlevoix Counties) and Higgins Lake (Roscommon County) with funding for these projects also contributed by several lake associations. These studies were continued and research was also initiated on Lake Leelanau (Leelanau County) in 1999.

LIFE CYCLE OF SWIMMER'S ITCH—Cercariae

Briefly, the general life cycle of the blood flukes that cause swimmer's itch includes a bird (or mammal in some cases) final host, and a snail intermediate host (Figure 1). There are 15-20 species of blood flukes that can cause swimmer's itch in Michigan. Nine snail species are known to serve as intermediate hosts and several bird species (e.g., mergansers, mallards, geese, swans, wood ducks, grackles, red-winged blackbirds) and two mammal species (muskrats and voles) can serve as final hosts. Eggs are passed with the feces of the final host into the water and hatch into small larvae called miracidia. Miracidia are free-swimming, non-feeding

stages that die after approximately 30 hours if a suitable snail is not contacted. In the snail host, miracidia develop into sporocysts which give rise to cercariae. The cercariae, causative agents for swimmer's itch, emerge from the snail and live for up to 24 hours. Completion of the life cycle occurs when cercariae penetrate the skin of a final host, develop into another stage that moves to the blood vessel of the final host, and mature into adult blood flukes.

Humans are not suitable final hosts, although cercariae accidentally penetrate their skin and may trigger an immune system response in infected individuals. Swimmer's itch (schistosome cercarial dermatitis) is a disease that occurs in approximately 30-40% of humans infected with cercariae. It is characterized by a skin rash or series of individual pustules that cause intensive itching that can be quite uncomfortable. Fear of contracting the disease may limit swimming and recreational activities in affected lakes, reduce tourism and cause economic losses to an area.

We have found two species of blood flukes in the genus *Trichobilharzia* (*T. stagnicola* infecting the snail *Stagnicola emarginata*, and *T. physellae* infecting the snail *Physa sayii*) that can cause swimmer's itch in Higgins and Walloon Lakes. *Trichobilharzia stagnicola* infecting *S. emarginata*, and *T. physellae* infecting *Physa integra*, occur in Lake Leelanau. A significantly larger number of *S. emarginata* than *Physa* spp. were collected and examined for *Trichobilharzia* spp. in the three study lakes. Several general comments can

be made about our research findings in 1998 and 1999.

INTENSIVE SAMPLING OF SNAILS

Our research primarily involves the host-parasite relationships between the blood fluke species that cause swimmer's itch and their snail intermediate hosts. It focuses on developing a model for predicting swimmer's itch occurrence and testing methods of control in Michigan lakes. Four sites were chosen for intensive sampling of snails at regular two-week intervals on each lake from mid May through August in 1998 and 1999. Snails were also collected one or more times from additional sites on the lakes. After collection, snails were sorted into one of eight classes according to shell length, in increments of 5 mm except for the largest class which included all snails over 35 mm. Snails were examined for infection by the light box method (exposing the snails to bright light) or were dissected.

INFECTION RATES OF SNAILS MEASURED

The infection rates of snails with *T. stagnicola* by light box examination were always less than 2.5% from all the lakes and less than 1.5% of the snails were infected with *T. physellae*. Infection rates of snails in a lake may differ between years, and may also vary between sites in the same lake. In one lake, infected snails were only collected from two of eleven sites in 1998, but in 1999 infected snails were collected from nine of eleven sites in the same lake. Given the major differences in percentage of snails infected from site to site within a year, differences in lake-wide infection rates from year to year probably mean very little unless the same number of

snails are examined from the same sites each year. Attempts will be made in the future to collect similar number of snails from each location in each lake.

It is important to remember that the light box detection method determines which snails are actively shedding cercariae at the time of sampling, but does not indicate the number of infected snails present in the lake. In one preliminary study on a subset of snails in one lake, only 0.46% of the snails were found to be shedding cercariae of *T. stagnicola* using the light box technique. Subsequent microscopic dissection of snails presumed to be uninfected, demonstrated that 2.60% were actually infected, but did not shed cercariae in the light box. These results suggest that infection rates of snails actively shedding cercariae of *T. stagnicola* as determined by the light box may not be an accurate representation of the number of snails infected in lakes. The light box detection method used in studies by other investigators and in our past studies may have resulted in substantial underestimates of snail infection rates. However, the advantages of this technique are that a large number of snails can be examined over a short time period and the infection rates of different studies in past years can be compared. The effectiveness of these two methods to determine snail infection rates will be further investigated in 2000. It may be that the light box technique will have to be replaced by labor-intensive dissection to obtain true rates of infection, if these results are confirmed.

Based on our experience in collecting and examining snails for infection (shedding cercariae) via the light box and a published study on swimmer's itch in Australia, we believe that snails should be collected between 8:00 am and 12 noon. This period may be the time of peak cercarial emergence. This also allows for consistency when the snails are sampled so comparisons of infection rates can be made within and between lakes and years. In previous studies done on swimmer's itch in Michigan, the time of snail collections

was not given or varied considerably.

MOST CASES OF SWIMMER'S ITCH REPORTED IN JULY

Infection rates of *T. stagnicola* in snails from each lake were low in May and highest in June, July or August, depending on whether the data were examined from a lake-wide perspective or at specific locations. Discussing these data with the lake associations, it appears that most cases of swimmer's itch are reported by the swimmer's itch hot line in July with the highest number of infections around the Fourth of July. This may indicate that parasite growth and development, and cercarial shedding are temperature related. We will investigate these relationships further in 2000. Another factor possibly affecting this high number of people infected during early July is simply there are more people enjoying the water and becoming exposed.

DO SURFACE WINDS TRANSPORT CERCARIAE TO OTHER PARTS OF LAKES? TO BE INVESTIGATED IN 2000.

An intriguing aspect of data collected over the field season was that areas in a lake that had the highest number of reported cases of swimmer's itch, based on swimmer's itch hot line data, were not necessarily the sites where the highest percentage of snail infection occurred. These differences may indicate that swimmer's itch cercariae are transported from one area of the lake to another area. Therefore, we investigated the possibility that cercariae were transported by wind-driven surface currents. To do this, specially painted fishing bobbers were released from the western side of the northern sub-basin of Higgins Lake on a windy day with wind blowing from west to east. The bobbers were blown across the lake in less than 24 hours. Cercariae have been reported to live more than 24 hours after they have left a snail. While the hydrodynamics of a

fishing bobber cannot be extrapolated to potential movement by cercariae, this experiment suggests that wind-driven surface currents could transport cercariae long distances in a 24-hour period. We plan to investigate this relationship further in 2000.

On two lakes, we worked on developing a trap to capture cercariae as they emerged from the snails in either laboratory aquaria or in the lake. These traps are modified versions of a device used to collect cercariae that cause schistosomiasis (blood fluke disease) in which humans are the final hosts in other parts of the world. They consist of microscope slides covered with a linoleic acid/clear fingernail polish matrix, suspended in the water column. Linoleic acid is believed to act as a cercarial attractant and induces penetration by the cercariae, which stick to the microscope slide. Slides are then removed from the water column and examined under a microscope for cercariae. The cercarial trap was successful in trapping swimmer's itch cercariae in the laboratory. Although the traps have not been successful in attracting cercariae in the lakes, they will be employed at one lake in 2000 to determine if they are useful in capturing cercariae. The use of this device also allows us to test the effectiveness of different over-the-counter compounds used as possible repellents against the cercariae that cause swimmer's itch because laboratory conditions can be controlled.

CERCARIOMETER TO MEASURE CERCARIAE ABUNDANCE BEING DEVELOPED

Researchers on one lake worked on a cercariometer in 1999. It is a sieving/filtering device designed for collecting cercariae from the water. The device was developed to sample cercariae of blood flukes that cause schistosomiasis in humans. It was hoped that the cercariometer would also filter out cercariae that cause swimmer's itch. This is a difficult method to master due to the tiny and fragile nature of cercariae and the large number of other organisms and particles in the water. A few cer

cariae, however, were collected from shallow water at two sites in a lake late in the summer. These results encourage us to devote more time to develop this technique, which could be used to document dispersal of cercariae.

A new component of our study will examine the effectiveness of copper sulfate in reducing swimmer's itch at specific beaches at one lake, if permits are granted to the lake associations for this activity. We plan to compare the results of this treatment in reducing snail populations and reports of swimmer's itch at these beaches and at other beaches that have not been treated with copper sulfate. We expect to document the effects of copper sulfate on snails and other invertebrates at these beaches.

One of our goals is to develop a model to predict outbreaks of swimmer's itch at beaches. We must be able to detect cercariae after they have been shed by the snail intermediate hosts into the water if we are to achieve this goal. While neither the cercarial trap or the cercariometer worked as well as hoped, we will refine these devices. It is essential that we document the presence and abundance of cercariae in the water if we are going to associate their movements with environmental variables. Data will be generated from field and laboratory studies and will allow us to develop the predictive model. The trap device also enables us to test the effectiveness of potential repellents and possible control agents in the laboratory. Another goal is to study the life cycle and behavior of the snail intermediate host in order to generate information that might be useful in developing an integrated pest management approach to control swimmer's itch. Studies on movement and distribution of snails in relation to limnological variables will be studied in the future. Our research will extend into deeper water using SCUBA to determine what role snails in deeper water play in swimmer's itch.

AUTHORS REQUEST LAKE ASSOCIATIONS TO REPORT CASES OF SWIMMER'S ITCH

With the public's help, we are in-

terested in documenting the distribution of swimmer's itch in Michigan. We are requesting that lake associations or their members, and riparian owners, send us information indicating that cases of swimmer's itch have or have not been reported from their lake and what county it is in. Furthermore, we would like to receive any additional information about the lake and its associated animals that would be helpful to us regarding swimmer's itch. Please include your name, address, and telephone number.

We acknowledge the substantial contributions of Edward B. (Ned) Wickes and Bill Case of the Higgins Lake Association who worked with several lake associations and Senator George McManus to obtain funding for the research. Ned Wickes also helped make local arrangements for researchers, as did Albert Flynn of the Walloon Lake Trust, and Jim Bendig of Lake Leelanau. Many other lake association members too numerous to mention provided assistance and information about local conditions. We also acknowledge the efforts of the 1999 field crew, Merritt Gilliland, Abigail Summers, and Melissa Asher. ■

Who Pulled The Plug On My Lake?

(continued from page 11)

VI. Plan on the process taking a long time. From the early planning stages through a final court decision could easily take months to a year or even longer. That does not include the time it will take thereafter to install the pump, dam structure or other devices.

VII. Strike while the iron is hot and while the lake level is low. If you wait too long to begin the process and the water levels begin to rise, you probably will lose public support and you will not be able to have a lake level set until water levels fall dramatically again in the future.

VIII. For people who are concerned about costs, remind them that the process is not going to become any cheaper in the future. An analogy involves the large number of lakes which are contemplating installing sewer systems. Had sewer systems been installed when many of them were first proposed for a particular lake 20 or 30 years ago, it would have been much cheaper (even if one does adjust for inflation) and less disruptive. ■

Jet Skis Collide, Teen Killed

Kalamazoo Gazette, Sunday, July 16, 2000

THE ASSOCIATED PRESS

GLADWIN — A Collision between two jet skis operated by two teenage half-sisters left one of them dead, Gladwin County authorities said Saturday.

Julie Ann Klauss, 15, of New Baltimore died Friday shortly after arriving at a Midland hospital, sheriff's officials said in a statement.

Her 13-year-old half-sister, also of New Baltimore, was uninjured in the crash shortly before 7 p.m. Friday.

Last month, Gov. John Engler signed into law legislation dropping the minimum age of personal

watercraft operators from 14 to 12. That law requires a parent or guardian to ride with operators 12 or 13 years old, and mandates that young drivers gain certification by attending a daylong boating safety class with their parents.

The sheriff's statement did not mention whether an adult was riding with the 13-year-old girl involved in Friday's accident, saying the case was being investigated by the Gladwin County Sheriff's Department's marine patrol division.

Authorities can ticket parents who allow their children to ride personal watercraft without supervision or the required certification, officials said.

Information From Lake Associations Around The State...

Baldwin Lake Association Cass County Don Henke, President

We want to thank everyone who took the time out of their busy schedules to clean the roads around our lake. It's amazing how much trash is picked up every 6 months and we can only imagine how dirty it would look if we didn't clean them. Thanks to all.

Let me bring you up to date on what has been happening at the P.A.L. (Porter Alliance of Lakes) meetings. Discussions have been going on about Purple Loosetrife beetles and the county master plan on wastewater. Our last meeting was held with representatives of Wightman/Petrie, an engineering firm, and invited township members to discuss the how's and when's of conducting a feasibility study in Porter Township for the need of a sewer system. We will keep you informed of all progress on this matter.

Attention all Baldwin Lake property owners: – by Mike Miller

Fertilizing: If you currently don't fertilize, good for you...don't start. If you do, please consider the following advice. Nitrogen is highly soluble and therefore will mostly move as runoff into the lake. When introduced into the lake, it promotes weed and algae growth and has detrimental results on the water quality. Potassium additives are normally minimal and are not a serious concern. **Phosphorus is the biggest concern, with the greatest negative impact on the lake.** Phosphorus allows aquatic plants to take advantage of other non-desirable elements. A Michigan State aquatic expert estimated that one pound of phosphorus could support 775 pounds of aquatic weed. Even though phosphorus is an essential nutrient for aquatic growth, lakes *do not* need outside sources for controlled health growth. Most soils in Michigan have adequate phosphorus levels to support a healthy lawn. If you draw water from the lake for watering, your lawn and plants are already receiving extra phosphorus!!

In summary,

1. Do not use quick-release fertilizers. Instead, use a slow-release type such as sulfur coated urea.
2. Approximately 2-4 lbs. of nitrogen per 1000 sq. ft. per year is adequate.
3. Use a zero phosphorus fertilizer such as 20-0-10.
4. One application 3 weeks after the grass starts turning green, and a light feeding

of winterizer in October/November will promote root growth. Fertilizing too early in the spring or too often is a waste. Any programs in excess of this are advertised and promoted by the fertilizer manufacturers...wonder why??

5. Most importantly of all, stay at least 30 ft. away from the lake. This is commonly called a green-belt buffer. Any closer guarantees runoff and thick, unwanted aquatic weed growth. Herbicides (weed killer) and pesticides should not be used within 30 ft. of the lake...a greater distance if you have a sloping lot. Implementing these lawn care practices will not only provide an attractive lawn, but will also help all of us to maintain a healthy, balanced lake for our enjoyment as well as for the next generation.

Big Brower Lake Association Kent County Bill Cutler, President

Gypsy Moth Suppression Program Making Headway

For the past two years, the trees surrounding Big Brower Lake have been sprayed with a concentration of natural occurring bacteria which is harmless to humans but deadly to Gypsy moths. The goal of the Gypsy moth suppression program is to reduce the infestation of Gypsy moths in native red and white oaks to very low levels.

According to Lisa Vasquez, Director of the Kent County Conservation District, the suppression program has been very successful around Big Brower Lake. Spring sampling by District personnel has determined that egg mass numbers are down dramatically in the immediate area.

The suppression program protocol generally requires spraying be done for three consecutive years, and while egg mass numbers are down significantly, Vasquez is recommending that the area around Big Brower Lake be sprayed again this spring.

In 1999, Lake residents were assessed a fee of \$12.75 per lot for the spraying. This year, because the BBLIA is assisting in management of the program, the assessed fee has been lowered to \$10.

When you receive your invoice in the mail, please pay promptly so the program can continue. This is a crucial "knock 'em out year," and if this year's spraying is as

successful as last year's, it is very likely that no spraying will be needed next year.

And if you are roused from bed by a low-flying airplane on an early morning in May, never fear! It's not Barney Oldfield preparing to crash land on your roof, but rather just the low-flying crop duster spraying to control the moths.

Cedar Lake Recreation Association Van Buren County Jim Walters, President

Water Quality Testing

Ed Hokanson, Dick Beach and Ron Sorenson volunteer their time to perform tests of Cedar Lake's water quality each summer.

- Secchi Disk (water clarity) measurements are taken weekly during the spring and summer months
- E-Coli (bacteria) testing is done after the 4th of July weekend at 20 sites around the Lake to identify failed septic systems
- Phosphorus testing (an indicator of fertilizer runoff) is conducted in the spring and fall
- Chlorophyll testing is done 5 times during the summer to test the Lake's "productivity" (potential for weed growth)

Analysis of the water samples is handled through the Michigan Lake and Stream Association in cooperation with the DNR. The cost of the analysis is paid for with your dues. Last year's test results continue to show that we live on one of the clearest, cleanest lakes in Michigan!

Crystal Lake Association Benzie County Cliff Graves, President

Watershed Management Planning

Watershed Management Planning was the topic of a recently conducted all day seminar. The seminar was sponsored by the Michigan Lakes and Streams Association, of which CLA is a member. As a result of this learning experience, I was able to compare our 1992 Crystal Lake Protection Plan with the latest in watershed management planning concepts.

The good news is that our protection plan is still relevant in that it already encompasses most of the elements of today's watershed management planning. Water quality monitoring, shoreline landscape management, zoning and land use are cornerstones in any program to protect the water quality. The better news is that our protection plan enables us to build on its

success and evolve it into a more comprehensive watershed management plan. Further, the watershed management planning process provides new opportunities to form partnerships and expand the involvement of people around Crystal Lake. The time is ripe to consider moving forward into a new planning cycle. Less than a month has passed since the final draft of the County Master Plan was completed. It is in the process of being forwarded to our Benzie County Planning Commission for adoption. This excellent and far-reaching master plan is in harmony with the mission of the CLA. It speaks to the need for protecting Benzie County's "pristine natural environment" from "degradation" and advocates the preparation of "watershed management plans" for "all watersheds in the County." One of the key priorities advocated for the Planning Commission is to "establish watershed planning groups."

So what is a Watershed Management Plan (WMP)? Simply stated a WMP is a set of goals, tasks, budgets, responsibilities, time lines, measurements and activities that are shared by the stakeholders within a watershed in order to protect the quality of the waters within. In our case, the watershed is the 22 square miles of surrounding land that carries water runoff into Crystal Lake. Ideally, the stakeholders include everyone who resides, works, visits, or recreates within the watershed and share common water quality concerns. Without the involvement of all stakeholders, a watershed management plan falls short of its true potential. Typically, a WMP is developed through a series of eleven steps.

• **Step 1:** Identify stakeholders with common concerns about water quality. Potential stakeholders come from our members, local government, agencies (such as the Benzie Soil Conservation District), other citizen groups and business owners. Create a steering committee with the ability to provide organization and leadership and whose members have the ability to implement change. Establish a technical committee that has access to technical resources and can provide technical information.

• **Step 2:** Characterize the current status of Crystal Lake. Articulate the desired uses of our watershed and identify the pollutants that threaten these uses. Identify the main sources of pollution as well as causes. Most importantly, establish watershed goals based on desired uses. For example, the DEQ web site identifies "body contact recreation" (fancy words for swimming, water skiing, and sail boarding) as a legitimate designated use. Since we have long established that excessive nutrient loading on Crystal Lake threatens the quality of this use, one goal would be to limit nutrient

loading in Crystal Lake.

• **Steps 3,4,5:** Identify the critical areas that contribute to most of the pollution. Survey these critical areas to obtain a list of sources and causes of pollutants. Prioritize pollutant sources and causes to identify the "critical few." Two very useful tools needed to complete these steps are predictive modeling and a geographic information system (GIS). We spoke of the pros and cons of predictive modeling in our fall issue of "Crystal Facets." Regarding GIS, the CLA has long supported the development of GIS for Benzie County and will continue to do so in the future.

• **Step 6:** Determine objectives for the watershed goals established in step two above. In other words, determine how the goals can best be achieved. If, for example, our goal is to limit the nutrient levels in Crystal Lake, then our objectives must spell out exactly how to do that. Objectives in turn become the basis for determining tasks and time lines.

• **Step 7:** Identify the Best Management Practices (BMP) for each source or cause of pollution in the watershed. A BMP is a land use practice that a landowner implements to control sources or causes of pollution. BMP's can involve construction (such as storm water runoff management, grade stabilization, and rock rip-rap placement, plant landscaping, and managerial activities such as septic system inspections).

• **Step 8:** Review the local programs, projects, and ordinances that currently impact water quality. The purpose of this step is to recognize the inclusive nature of a WMP and to answer several intuitive questions. Do current projects and ordinances adequately relate to the goals of the WMP? What partnerships exist and how well are they working? Do opportunities exist to launch new activities in cooperation with existing projects, programs, and ordinances? Taking into account the many excellent programs already in place, how can we avoid redundancy and "reinventing the wheel?"

• **Step 9:** Inform and involve the public. Create an information/education strategy that targets those persons whose actions have the most effect on water quality. Modify the message for the audience. Effective messages are action oriented and should answer the questions,

- (a) What is the problem?
- (b) How does it affect me?
- (c) Why should I care?
- (d) What can I do?

• **Step 10:** Develop an evaluation process. Evaluation is required to determine whether the management plan is work-

ing and whether some of its components need to be revised. The old axiom is—that which is not measured cannot be managed. Evaluation techniques include water quality monitoring, biological surveys, photography, compilations of BMP implementations, pollutant loading reduction measurements, stakeholder surveys, and focus groups.

• **Step 11:** Assemble the plan. Combine the results of Steps 1 through 10 into a complete picture. Write a water quality summary that clearly links conditions in the watershed to the goals of the WMP. The assembled plan should enable a person not acquainted with Crystal Lake to understand the needs and proposed solutions. A key use of the assembled plan is to request agency and foundation grants for implementation. In summary, creating a WMP is not a simple task. However, the benefits can be enormous. Sweat equity, expertise, and funds are required. Volunteers cannot complete all of the critical work. Nor is the necessary funding likely to be available from local sources.

Dodge Lake Lakefront Property Owners Association
Clare County
Hank Coleman, President
Goose Round-Up

The Association will be holding a goose round-up during the last two weeks in June. What this means is the geese will be rounded-up into a holding area and put into transportation crates and removed to specified locations per the DNR. In order for us to do the round-ups we must have 70% of lake front property owners sign a petition for removal. By doing the removal of the geese, we are able to somewhat control the number of geese returning next year. The round-up is fun for the participants, humane for the geese, and a good way to learn about our fine feathered friends. As soon as the DNR sends the petition, someone will knock on your door and ask you to sign, please do. If you are not at home, the petition will also be available at the membership meeting.

Elk-Skegemog Lakes Association
Terri Hoyt, President

ESLA Board Approves \$1,000 for Development of Boat Noise Measuring Device

The significant increase in recreational boating on inland lakes in Michigan is causing a serious problem. Heavy weekend, and holiday use of large, multi-engined 'performance' boats and other craft with loud engines is creating an issue which is affecting both people and wildlife—too much noise.

At every ESLA annual meeting for the past three years, boat noise has been an issue of concern by riparians. Other lakes associations have also voiced complaints to the MDNR and law enforcement officials.

Unfortunately, the laws on the books, and the equipment in the marine patrol boats do not match to make effective enforcement practical or enforceable. Agencies say the laws and the sound measurement equipment must be revised.

A solution for this problem is mandatory, considering Michigan has more registered boats than any other state (980,378); that is a great deal of noise even with good laws and measuring devices!!

In hopes of dealing with the problem, the Higgins Lake Advisory Committee welcomed a promising idea from Torch Lake. When this was proposed to Michigan State University, Division of Engineering Research, Dr. Clark Radcliffe enthusiastically accepted the challenge to design and construct a prototype instrument which will measure and record distance and sound level of a suspect boat. It will provide reliable evidence acceptable in a court of law. State and county officers are eager for such a tool which will markedly improve law enforcement. They are projecting further use in regulation of snowmobiles, ORV's and other machines.

Revision in State marine laws regarding allowable noise levels and current enforcement procedures are needed for compatibility with the new measuring device. Project participants will work with the State legislature on this issue.

A one third/two third, (\$23,000/\$47,000), private/public finance plan has been proposed to the State for funding this project. Legislators have shown appreciation for such citizen commitment. Pledges from lake associations, trusts, foundations and individuals being compiled indicate substantial interest in the project. The early contribution of the Higgins Lake Foundation was the catalyst for the action by the ESLA Board.

The ESLA Board will be monitoring the progress of this development and report to the membership when news becomes available. At the Board meeting on May 4, discussion from the board indicated that this was a riparian concern and thus voted to support the effort with a \$1,000 donation.

Evans Lake Land Owners Association

Lenawee County

Anne Murphy, President

It's Your Lake...Your Neighborhood

REMEMBER the **25-Mile Per Hour Speed Limit** while driving around the Lake. For the safety of our children and

guests, please adhere to this speed limit.

A Friendly Reminder... Weed Control is not an ELLOA sponsored project. If you wish to use a chemical treatment to control weeds, you **MUST** obtain a permit from the Department of Environmental Quality, State of Michigan, prior to any treatment of the lake. Approved chemicals are not harmful if they are applied properly and people are forewarned. If you or your neighbors wish to have weed control chemicals placed in the lake, you should consider the adjacent property owners feelings on the matter before you make any applications, whether you or a contractor does the work. Keep in mind, **a permit from the DEQ is required by the State**, no matter who applies the chemicals.

Farwell Lake Riparian Association Phil Dupuis, President

Do's and Don'ts

Do keep clearing to a minimum. Take special care not to disturb natural vegetation and expose bare areas.

Do protect your lakeshore from construction and urbanization.

Do leave and maintain a buffer strip between fields and ditches, streams or lakeshores. Leave at least 25 ft. of undisturbed buffer, more in areas with slopes or poor vegetation.

Do use fertilizers in proper amounts only when necessary. Non-phosphorus fertilizers are highly recommended. Have a soil sample to determine usage. To reduce water needs, use hay mulch around garden plants and shrubs.

Do plant deep-rooted, woody vegetation along stream beds, road ditches and lakeshores.

Don't use pesticides on gardens and lawns in excess amounts. Avoid use through alternative pest management practices.

Don't burn leaves or brush near the shore. Don't put leaves, branches or organic material into lakes. Compost leaves for garden mulch instead.

Lake Fenton P.O.A.

Genesee County

George Dyball, President

DNR Does Fish Survey On Lake Fenton

by Joe Nucci

Well here it is, the follow up article of "Good eating is at the end of your fishing pole!" If you recall, I wrote that the Michigan Department of Natural Resources would be doing a fish survey of our lake in the spring of 2000.

Joe Leonardi, who is the Fisheries Management Biologist for our area, took the survey on May 8th, 9th, and 10th. Joe

and his crew set fish traps in approx. 10 to 15 different locations on the lake. They also set two Gill nets, which were left in over night. Even though I wrote in my fall letter that we have a great variety of fish in our lake, I was really surprised at some of the fish the MDNR netted.

Examples:

- A 4-foot Garr Pike was netted.
- Carp that weighed approx. 20 lb.
- Large Mouth Bass ranging from 8 to 20 inches.
- Small Mouth Bass were netted.
- Northern Pike up to 35 inches.
- Perch ranging from 6 to 13 inches.
- Blue Gills and Sunfish ranging from 3 to 13 inches.
- Crappie Bass ranging from 4 to 12 inches.

But I think the most interesting catch was the Walleye, they range from 16 to 26 inches. The 26 inch fish was one of the fingerlings that was stocked in our lake in 1994 and the 16 inch was from the stocking of 1997. I asked them how they knew this and they explained that it takes two years for a walleye to mature to 14 to 16 inches. They were real happy to see this, because it showed them that our Lake is supporting the Walleyes.

Joe said that we are scheduled to have another 85,000 2-inch fingerlings released in our Lake in August or September of this year. They are also going to decide this winter if our Lake can handle additional stocking of other fish species.

Glen Lake Association

Leelanau County

Herb Kramps, President

The Zebra Mussel watch is in operation at the Little Glen launching ramp. We hope to have the same crew back this year as last—they did a great job! Please remember to wash off your boats when transferring from other lakes into Glen Lake. Lake Michigan, Crystal Lake, Lake Leelanau and almost every other body of water surrounding us are infested with Zebra Mussels, and we are working to prevent them from gaining access to our lake. The staff at the boat ramp power washes watercraft for no charge—so please utilize this resource, and encourage others to do so, as well. The launching ramp power wash station is open from late June until Labor Day, 9 a.m.-5 p.m. **WE ARE THE ONLY LARGE LAKE IN THE AREA WITH NO KNOWN ZEBRA MUSSELS**, and it is only with your help that it will remain this way.

Hamilton Chain of Lakes (Mary, Louise & Hamilton)

Dickinson County

Bill VanWolvelaere, President

The Dam Problem May be Over Soon

Without the Lake Mary Dam, water levels on our three lakes would be lowered by 4.5-6 feet and our channels would be reduced to creeks. Our docks would become dry docks and our pleasure use of the lakes would become very limited. There would be no need for the two boat landings. Sadly, our property values would tumble. Without a plan for repair or replacement of our dam it could fail and this could happen! For these reasons the Hamilton Lakes Association has been diligent in efforts to secure a new dam.

involves \$25,000 in DNR monies, \$26,500 from a state grant to the county, and the balance from the county treasury. It would also require ownership of the dam by Waucedah Township (they have agreed) with the cost of minor repairs borne by riparians (through township treasuries and/or the Lake Association) and major repairs, if ever needed, through an assessment district.

Kiser Johnson Associates (dam specialists with offices in Norway) have done a preliminary engineering study. That



Last August's DEQ dam assessment report told us what we already knew. The dam needs replacement that must be done under specifications required by the Michigan DNR.

To ensure that a new dam would control the water level at an agreeable level, we collected signatures on a petition for setting a legal lake level and presented those petitions to the County Board of Commissioners. Subsequently, the County Board refused our petition when we (the Lake Board) told them we were not open to an assessment district. It was our feeling that since the DNR owned the property and the two boat landings, they should fix their dam.

A riparian meeting on March 14 with county officials present, echoed the same feeling about setting up an assessment district for Hamilton Lakes. We also contend that the county and townships involved have a considerable tax base at Hamilton Lakes and some of those taxes need to be returned in some fashion.

The past nine months have been used to find solutions to the many facets of the dam problem. Now the good news. We have a tentative solution to build and maintain the proposed \$76,500 Lake Mary Dam. It

study and drawings need DNR approval before final engineering can begin. A meeting on July 11 has been set. Although we are not ready to set the cornerstone, we have made considerable progress in getting a new dam. The persistence of the Hamilton Lakes Board and some faithful riparians has got the job done. Jack Bronzyk and Joe Tavernini have made timely contacts and would not be denied until they got positive answers. Thanks to Attorney Steve Tinti for good free advice when we needed it the most. Jim Pawloski of the DEQ has helped in countless ways including a dam cost estimate.

On the county level thanks goes to Bill Marchetti, County Administrator, and the entire County Board, especially our local Commissioner John Degenauer, and County Board Chairman Joe Stevens. They have taken a special interest in getting this project done in an acceptable manner for Hamilton Lakes riparians. Closer to home, we are grateful to Waucedah Township Board for accepting ownership of the dam. Thanks to our supervisors, Richard Bedard (Waucedah) and Len Bal (Norway) for your time and efforts to achieve a workable agreement.

Finally, keep in mind Representative Doug Bovin, who has worked vigorously to bring all parties together and has helped secure the necessary funding for our dam.

Hopefully, more details will be available at the July 8 general membership meeting. Plan to be at Norway Senior Center for a 10 o'clock social and a 10:30 business meeting.

Hamlin Lake Preservation Society Mason County Susan Austin, President

Park and Dam Projects in the Hopper

The Society's nomination of the Ludington State Park as Michigan's first land reserve is moving forward slowly. As we know, land reserve status will prohibit oil and gas drilling under the park.

Our petition was submitted officially to the Natural Resources Commission on February 9th. I have been advised that the DNR staff plans to complete its review by the middle of June. If that date holds true, the Natural Resources Commission could hold a public hearing at their July 12th meeting. Once approved, our petition will be submitted to the Michigan legislature for final enactment.

Patience is a virtue, and I'm working on developing some. We need to stay the course even if it is taking too long to work through the approval process. The end result of our efforts will forever protect the state park from exploitation. What a neat way to celebrate the millennium!

Now on to the dam. The engineering evaluation of the dam has been completed and submitted to the Department of Management and Budget. The dam needs extensive repairs; however, it is structurally sound at this time. Nevertheless, time and further deterioration could escalate the repair costs beyond the \$477,000 estimate. We need the legislature to appropriate the necessary funds now.

The Hamlin Lake Preservation Society Board met on April 8th and approved a plan to reactivate the consortium of the H.L.P.S., Hamlin Township, Hamlin Lake Association and the Hamlin Lake Improvement Board. This consortium launched the project initially and now will petition Senator Schuette and Representative Mead to immediately seek funds for the repairs. Our letters should be in their hands no later than the 1st of June.

All Preservation Society members and friends can help by writing and urging our elected representatives to immediately address the need for funds to repair the dam. Please write today.

Representative David Mead, 1385 S. Tower Office Building; P.O. Box 30014,

Lansing, MI 48909-7514, and Senator Bill Schuette, 520 Farnum Bldg., P.O. Box 30036, Lansing, MI 48909-7536.

Harper Lake Association Lake County

Larry Noble, President

Park and Dam Projects in the Hopper

It's a fact! The DNR fish survey conducted in the late spring of 1999 found a number of pike in the lake, some as large as 30 inches. DNR fish Biologist, Mark Tonello, of the Cadillac office conducted a three-day fish survey netting in several sites. The survey found a number of Perch, Bluegills, Bass, and Pike. No Trout were netted. All of the pike were taken near the Public Landing. Sometime in the past someone either **intentionally or by accident** introduced the Pike into our lake. They survived and appear to be doing well. Future Trout plantings by the DNR may be in jeopardy as a result of the Pike findings. Pike are voracious feeders and Trout are a favorite food. Mark Tonello has suggested some options and these will be an item discussed at the May 20 meeting at St. Bernard's. Please plan on attending so HLA member input can determine a course of action. Complete fish numbers and details of the '99 survey will be available at the meeting. See you there! – Joe Landis

Higgins Lake P.O.A.

Roscommon County

Bill Case, Executive Director

HLPOA helps in purchase of patrol boat

The Higgins Lake Property Owners' Association has joined the Higgins Lake Foundation and the Roscommon County Community Foundation in purchasing a brand new 21-foot patrol boat for the Roscommon County Sheriff's Marine Division. This boat will be used for patrol purposes on Higgins Lake only with the exception of search and rescue procedures if needed. This new vessel, featuring a 200 HP motor, will have all the bells and whistles necessary to handle all foreseeable problems and conditions. The Sheriff's Department will retire its fifteen-year-old boat to make room for the new one.

Lobdell-Bennett Lake Association Livingston & Genesee Counties

Roger Kelley, President

Orders are being taken for color 20"x24" aerial photographs of Lobdell Lake, Bennett Lake and one showing both Lakes. The pictures were taken in the summer of 1999. The pictures can be viewed on www.aerialgraphics.com. Photos are \$60 each. A limited number of the photos are currently available. Aerial photos are suitable for framing and make excellent gifts. To order

your photo, complete an order form and make checks payable to Lobdell-Bennett Lake Association. Order your copy now and proudly display our lakes!

– Ray Dagnais, Vice President

Long Lake POA

Gogebic County

Arny Domanus, President

I attended a seminar "Aspen-Hero or Villain" in Ironwood on April 12th and 13th. The seminar was a cooperative venture of the Ottawa National Forest, Ruffed Grouse Society, Sierra Club, Gogebic County Forest Commission and Western Upper Peninsula Forest Improvement District. Different viewpoints regarding the growing and harvesting of trees and their effects on wildlife, the economy and the environment were presented. It was a very interesting and informative seminar that provided me with a better understanding of the impact the forest has in our area.

Presque Isle Township in Vilas County, Wisconsin enacted a local ordinance restricting operation of PWC's on lakes smaller than 200 acres to "Slow-No Wake." So far we have not had a problem with PWC's on our lake. A couple of our neighbors that have occasionally used them have done so in a responsible manner. My concern is that as local restrictions are increased we may find people seeking out a lake to operate on. We have to continue to monitor this situation to prevent us from having this same problem other lakes to our south are experiencing.

On May 3rd, Marty and I had another cordial meeting with George Peterson, Watersmeet Township Supervisor at his office. We discussed the "keyhole zoning" ordinance that we had presented to George a few months ago. I gave George some new information I had obtained from the ML&SA conference describing the "keyhole" verbiage other townships have used in Michigan. George agreed to have the Township Attorney review the information and if necessary speak to the ML&SA attorney. He will keep us advised of the status so we can proceed with the process of an addendum to the existing zoning.

Lake Margrethe P.O.A.

Crawford County

Joe Porter, President

History of the Lake project was discussed by Marshall Roe, who is currently in the process of compiling information to 1) acquaint newcomers with the history of the area, 2) restore and preserve the history and stories, and 3) use as a

potential tool to raise money for both the Association and the Foundation.

His time line includes he and his committee meeting with 'story tellers' with old time connections to the area during the month of August. Followup interviews will be done in September. Roe can be reached at 517-348-7715 (mcroe@aol.com) or through the LMPOA Post Office Box 583 in Grayling, Attn: Editor.

Some of the people the committee would like to interview are people connected with the lumbering era, those who winter or summer here, those with generational longevity, and those with stories to tell of the war years and great depression times.

History belongs to everyone, especially those who will never have the chance to experience what you may have in your lifetime. Please be generous with your time, your talents and your most valuable treasure—your stories and your memories. Thanks—Your Editor

Missaukee Lakes Association Missaukee County

Richard A. Morrow, President

A little background on MLA. Our association is comprised primarily of lake front and back lot property owners, surrounding the lake; many of whom are part time or better known as weekend residents. MLA's objectives are to maintain and improve the environmental integrity of the lake through the promotion of quality initiatives, educational opportunities and public safety standards and practices. We continue to recognize outstanding personal performance in obtaining these objectives on a yearly basis through a formal recognition ceremony. We work with the high school faculty and students in monitoring the lake's water quality, as part of the Advanced Self Help Program (ASHP) associated with Michigan Lake & Stream Associations (MLSA).

Moon Lake Riparian Association Gogebic County

John Sick, President

The Michigan DNR has again planted 4600 brown trout on May 5. This year at the suggestion of John Sick they have returned to planting "wild rose" browns which are easier to catch and seem to do very well in our lake. He was told that Moon Lake has been slated for the indefinite future for these annual plantings of trout, which is good news.

The board has purchased a depth-measuring device that will be placed in the lake so that each year we can keep track of fluctuations in water depth. John Sick and Denny Hill will be installing this measuring device. ■

PART 303, WETLANDS PROTECTION – NEW ADMINISTRATIVE RULES

By Colleen O'Keefe, MDEQ Inland Lakes and Wetlands Unit

New administrative rules were announced by the Michigan Department of Environmental Quality (MDEQ) (ORR 99-003 EQ) under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The rules became effective on April 27, 2000. The new rules clarify what activities are primarily dependent upon being located in the wetland; the types of alternatives that may be considered feasible and prudent; and mitigation ratios for replacement of wetlands affected by the permitted activity.

Part 303 states that a permit shall not be issued unless it is shown that an unacceptable disruption will not result to the aquatic resources. The applicant must demonstrate that the proposed activity is "primarily dependent upon being located in the wetland," or that "a feasible and prudent alternative does not exist." The new rules clarify the importance of the project purpose in making permit decisions, give guidance about conducting alternatives analyses, and provide guidance regarding what is a wetland dependent activity.

The new rules also amend the existing Mitigation Rule (R281.925) to clarify and establish mitigation criteria and ratios. Mitigation is required as a condition of many permits issued under Part 303. As authorized under Sections 324.30307(2) and 324.30312(2) of Part 303, the MDEQ may impose conditions on a permit for use or development if the conditions are designed to remove an impairment to the wetland benefits, to mitigate the impact of a discharge of fill material, or to otherwise improve the water quality. The revisions to the Mitigation Rule outline the mitigation options that are available to the applicant. Guidance is provided on what types of mitigation are preferred, where the mitigation should take place, and what the replacement mitigation ratio will be for impacts on various wetland types. Specific compensatory mitigation ratios and criteria are spelled out, ranging from 5 acres of restored or created wetland for every acre of impact on rare or imperiled wetlands, to 2 acres of restored or created wetland for every acre of impact on forested and coastal wetlands, and to 1.5 acres of restored or created wetland to every acre of wetland impact for most other situations. In certain exceptional circumstances, preservation of existing wetlands may be an option at a 10:1 ratio. The rules also allow MDEQ staff some flexibility in determining mitigation requirements. For example, staff may waive compensatory mitigation requirements for small wetland impacts less than 1/3 of an acre, providing no reasonable opportunity for mitigation exists. In addition, the rules require the MDEQ to double the mitigation ratios for projects authorized by "after the fact" permits.

These new rules will also help ensure the consistency necessary for the state to maintain its administration of the Federal Section 404 Program. Section 404 of the Federal Clean Water Act regulates the placement of fill in waters of the United States, including wetlands. In August of 1984, the U.S. Environmental Protection Agency (USEPA) authorized Michigan to administer the Federal Section 404 Program in most areas of the state. Currently, the state's authority to administer the Federal Section 404 Program of the Clean Water Act is under review by the USEPA. While Michigan may make independent policy decisions, its program may not be less stringent than the federal program.

The MDEQ plans to promulgate a second set of rules to clarify certain administrative procedures and to ensure consistency in the permit decision-making process, and in the interpretation of Part 303. A process to develop draft rules, including stakeholder meetings and public hearings, will be initiated in the near future. Issues to be

considered in round two include:

- Clarification of administrative and procedural issues related to permit application review, permit issuance, and permit modification.
- Addition of procedures and fees for conducting wetland assessments during the winter.
- Clarification of the applicability of certain wetland permit exemptions.
- Clarification of the purpose, intent, and content of the wetland inventory.
- Clarification of what constitutes a use of a wetland for which a permit may be required.

It is anticipated that stakeholder meetings for this second set of rules will be initiated in May 2000. Questions concerning wetland rules should be forwarded to Ms. Colleen O'Keefe, Inland Lakes and Wetlands Unit, MDEQ, at 517-373-8813, or e-mail at okeefec@state.mi.us ■

ANOTHER LAKE ROAD END CASE

In 1993, the Michigan Court of Appeals issued its opinion in Jacobs v Lyon Township (after remand), 199 Mich App 667 (1993), the definitive Michigan appellate case on the use of public road ends at lakes. In Jacobs, the Court of Appeals held that the following activities could not occur on a public road which ends perpendicular to a lake – permanent boat mooring, use of shore stations or boat wells, lounging, sunbathing, picnicking and similar activities. In essence, the Court held that a public road is really a road and can be used only for travel and true lake access purposes. In Jacobs, the Court did permit the installation of one non-exclusive dock which could be used by everyone for temporary mooring only. Unfortunately, while the opinion in Jacobs is about as clear as they come, a large number of backlot owners (and at least one Circuit Court judge in Roscommon County) have acted as if the Jacobs decision did not exist.

Despite Jacobs, a number of backlot owners continue to maintain extensive illegal dockage, shore stations and permanent boat moorage on public road ends at Higgins Lake and on other lakes around Michigan. In 1997, a riparian group (the Higgins Lake Property Owners Association or "HLPOA") filed a lawsuit in the Roscommon County Circuit Court (where Jacobs also originated) to have the Jacobs decision enforced. HLPOA asked that permanent boat mooring, the use of shorestations, lounging and similar activities be enjoined by the Circuit Court at the road end at issue. Roscommon County Circuit Court Judge Ronald M. Bergeron apparently disregarded Jacobs and dismissed the lawsuit. HLPOA appealed the matter to the Michigan Court of Appeals. That case, Higgins Lake Property Owners Association v Lyon Township (Case No. 219768), was decided by the Court of Appeals on May 30, 2000. In short, the Court of Appeals again agreed with Jacobs and stated once again that permanent boat moorage, shorestations, picnicking, lounging, etc., could not be maintained or occur on public road ends at lakes.

Many people are hailing this most recent Court of Appeals decision as a victory for the rule of law and common sense. HLPOA and their attorney, William L. Carey of Grayling, are to be congratulated. ■